ADAPTATION FUND

FULLY DEVELOPED PROPOSAL FOR SINGLE COUNTRY

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme:	**AWARE**: Adaptation for Water Access and Resilience in Ewaso Nyiro River Basin
Country:	Kenya
Thematic Focal Area:	Water, Ecosystem Restoration, Food Security, Early Warning Systems,
Type of Implementing Entity:	National Implementing Entity
Implementing Entity:	**National Environment Management Authority (NEMA)**
Executing Entities:	United Nations Children's Fund (UNICEF), World Food Programme (WFP)
Amount of Financing Requested:	20 million USD

Letter of Endorsement (LOE) Signed: Yes ☒ No ☐

NOTE: LOEs should be signed by the Designated Authority (DA). The signatory DA must be on file with the Adaptation Fund. To find the DA currently on file check this page: https://www.adaptation-fund.org/apply-funding/designated-authorities

Stage of Submission:

☐ This proposal has been submitted before including at a different stage (concept, fully-developed proposal)

☒ This is the first submission ever of the proposal at any stage

In case of a resubmission, please indicate the last submission date: Click or tap to enter a date.

Please note that fully-developed proposal documents should not exceed 100 pages for the main document, and 100 pages for the annexes.

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A Project/Programme Background and Context:

Kenya, with its diverse landscape and rapidly growing population, faces significant climate, environment, energy, and disaster risk challenges. Despite contributing less than 0.1% of global greenhouse gas emissions, Kenya is one of the countries hardest hit by climate change impacts.[1] Climate change in Kenya is characterized by increasing temperatures, changing rainfall patterns, and increased frequency in extreme weather events, particularly droughts and floods. These changes have far-reaching consequences for Kenya's economy, environment, and its children.

This recurring and worsening cycle of water scarcity (drought) and excess (flooding), combined with the limited climate resilience of water sector institutions—due to capacity and knowledge gaps in implementing climate-resilient interventions—and fragile infrastructure, along with a vulnerable population dominantly reliant on livestock as key source of livelihood, highlights a clear need for climate change adaptation.

The Adaptation for Water Access and Resilience in Ewaso Nyiro River Basin (AWARE) program will empower communities living within the Ewaso Nyiro River Basin (ENRB) who are dependent on the natural resources within the Basin for their livelihoods. About 70% of the River Basin spans over the northern arid counties of Kenya, which are defined by a scarcity of water and susceptibility to climate shocks that test the resilience of communities, their food systems and biodiversity. The damage caused to water, environment and the loss of the biodiversity as a result of the climate crisis, pose critical challenges to feeding children living in the counties within the Ewaso Nyiro River Basin today and if not addressed for generations to come. Water access and availability remain a key pillar to ensuring children, adolescent and women have sustainable access to nutritious, diets.

A.1 Socio-economic context

The target counties of Marsabit, Garissa, Wajir, and Mandera, all in Northeastern Kenya, face significant socio-economic challenges, including high poverty rates, limited infrastructure, and inadequate access to basic services. Approximately 70% of residents live in poverty, with socio-economic indicators like female literacy rates at 41%, substantially below the national average of 89%[2]. To address historical marginalization, local leaders have advocated for a comprehensive development plan focusing on critical sectors such as education, healthcare, water, security, and infrastructure[3]. Additionally, climate change has prompted a shift in traditional livelihoods, with herders increasingly adopting camels over cows due to their resilience in arid conditions[4]. These developments highlight the region's ongoing efforts to overcome socio-economic hurdles and adapt to environmental challenges. According to the Kenya Demographic Health Survey 2022, Marsabit County was rated third highest for teenage pregnancy (age 15–19) in the country at 29%. Despite this, the reporting of GBV in Marsabit remains low. In 2022, Kenya's national GBV helpline, Health Assistance Kenya, only recorded

[1] World Bank. *Kenya Country Climate and Development Report*. 2023. World Bank Group.
[2] World Bank Group. (2018, May 9). Boosting prosperity, improving equity in north and north eastern Kenya. World Bank. https://www.worldbank.org/en/news/feature/2018/05/08/boosting-prosperity-improving-equity-in-north-and-north-eastern-kenya
[3] KNA. (2024, October 14). North Eastern leaders decry decades of marginalization – Kenya News Agency. https://www.kenyanews.go.ke/north-eastern-leaders-decry-decades-of-marginalization/
[4] Hochet-Bodin, N. (2024, July 1). Camels replace cows in Kenya due to climate change. Le Monde.fr. https://www.lemonde.fr/en/environment/article/2024/06/16/camels-replace-cows-in-kenya-due-to-climate-change_6674901_114.html

16 cases.

Ewaso Nyiro River Basin context

The project has selected Ewaso Nyiro River Basin as its target area, which is severely affected by climate change leading to droughts, floods and the degradation of the watershed. The basin is the backbone of the socio-economic development of the pastoralist communities, agro-pastoralist and riverine communities. More specifically, the project will focus on the counties of Garissa, Marsabit, Wajir and Mandera. During climate shocks women, children, youth and the disabled are disproportionately affected leading to malnutrition, insecurity and intercommunal conflict, increased Gender-Based Violence (GBV), depletion of household savings for water purchases, an increase in school dropout rates and heightened risk of water-borne diseases.

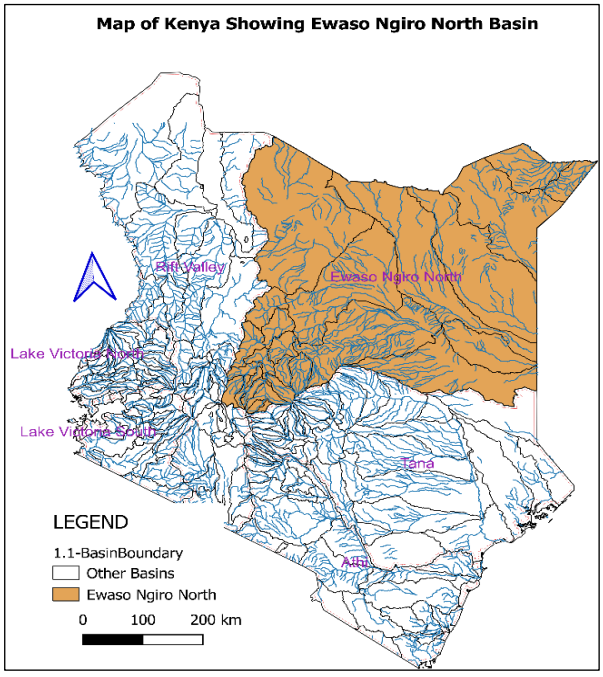


Figure 1: Map of Kenya showing Ewaso Nyiro Basin

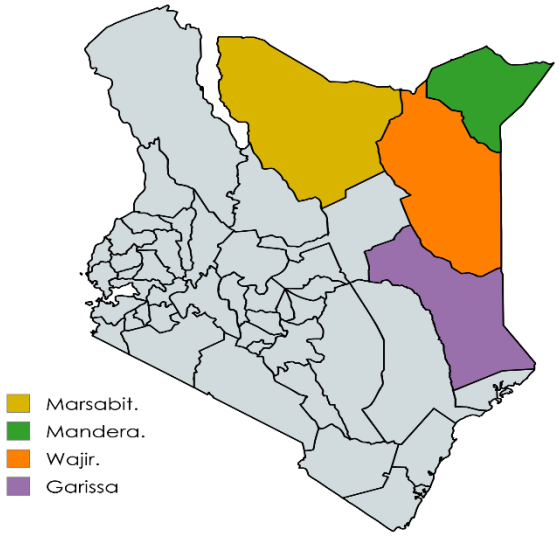


Figure 2: Map of Kenya showing target counties

The River Basin faces several threats and challenges such as unregulated abstractions leading to water conflicts, over-abstraction of water, drying up of springs, degradation of groundwater quality by agricultural chemicals, water pollution, destruction of forests, soil erosion, overgrazing, siltation of surface water sources, water scarcity, flooding in the lower parts of the catchment, among others (GWP, 2022).

Water and food insecurity are closely intertwined in the arid and semi-arid lands (ASALs) of Kenya which characterize the Ewaso Nyiro River Basin – with extended drought periods being the main driver of food insecurity (see Figure 4). During the most recent drought in 2021-23, 4.4. million people in the ASALs were severely food insecure and more than 970,000 children at risk of being acutely malnourished. This period was followed by extensive flash floods affecting vast areas of the basin. Climate change is expected to further increase the frequency and intensity of both drought and flood events.

The Children's Climate and Disaster Risk Index (CCRI-DRM) shows that children and

communities living in the North and Eastern part of the catchment (Mandera, Wajir, Marsabit, and Garissa counties) are at particularly high risk from the impacts of climate hazards and other shocks. According to the 2022 DHS, the percentage of households accessing safe water in those counties is low, only 41.3% in Marsabit, 52.9% in Wajir and 54% in Mandera. Isiolo and Garissa are doing better at 72.1% and 70.8% respectively.

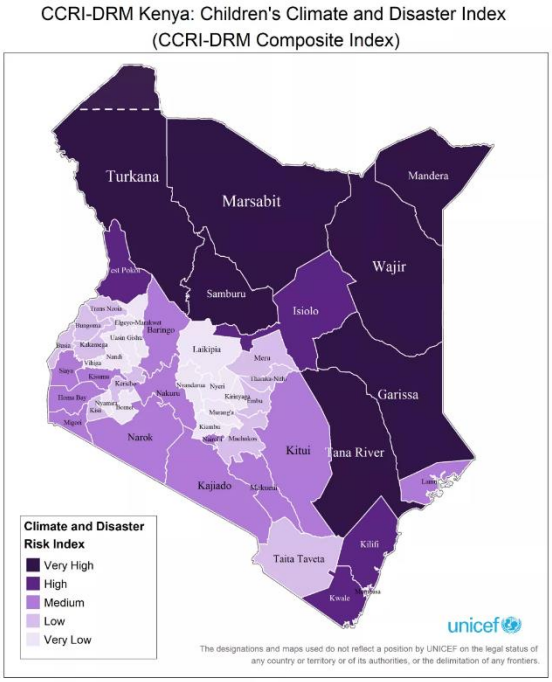


Figure 3: Children's Climate and Disaster Risk Model Kenya

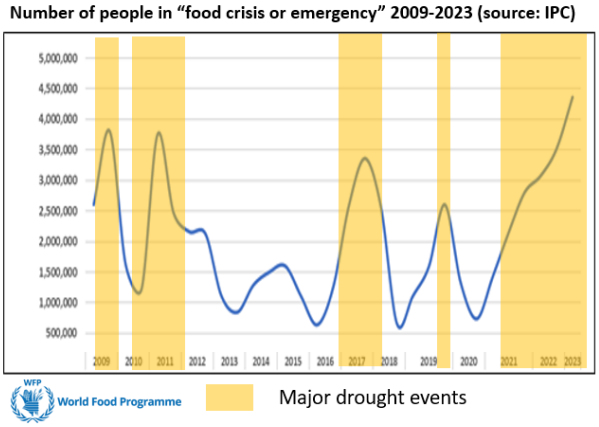


Figure 4: Number of People in "food Crisis or emergency 2009-2023

A.2. Climate, Water, and Gender Inequality

Climate change and disasters do not impact everyone equally. They amplify pre-existing gender inequalities and intersecting social disadvantages—such as age, ability, ethnicity, sexuality, socio-economic status, and education—creating compounded risks for marginalized populations. Women and girls, in particular, face disproportionate impacts on their health, safety, livelihoods, and access to essential services. Disasters lower the life expectancy of women more than men, with women more likely to die during natural hazards and experience severe mental health consequences in the aftermath. Access to healthcare, especially sexual and reproductive health (SRH) services, often becomes even more limited during crises, while economic insecurity and unemployment rates among women typically increase.

Climate change is a threat multiplier that intensifies gender-based vulnerabilities. Women and girls are more dependent on local, weather-sensitive natural resources—such as water and firewood—making them particularly vulnerable to climate-related disruptions. In rural areas, women spend up to five hours a day collecting water and additional hours sourcing fuel. These time-consuming responsibilities reduce their mobility and limit their ability to pursue alternative livelihoods or adapt during climate shocks. When floods, droughts, or other disasters occur, women often lack access to the economic resources—such as land ownership, credit, and technology—that would otherwise support adaptive responses. As a result, they are more exposed to hunger, poverty, and violence, especially in already fragile or conflict-affected contexts.

According to the Gender Snapshot 2024, climate change may drive an additional 158 million women and girls into poverty by 2050—16 million more than men and boys. Already, 47.8 million more women than men are experiencing food insecurity and hunger. The impact of climate change on water availability and quality is especially critical, given the gendered roles in water collection and management. Water scarcity not only increases the time burden on women and girls but also raises the risks of violence during collection, particularly in remote or conflict-prone areas. The stress on water systems can also trigger wider economic and social disruptions, deepening inequalities and increasing the risk of gender-based violence (GBV).
Despite progress, structural gender inequality remains a major barrier in Kenya. While the constitution promotes gender equality, entrenched social norms and patriarchal systems continue to limit women's decision-making power and access to resources. Women are underrepresented in leadership and face high rates of sexual and gender-based violence, harmful traditional practices like female genital mutilation (FGM) and child marriage, and reduced access to education. In Northern and Northeastern Parts of Kenya Women and girls are responsible for water collection in addition to household chores which reduces time for other livelihood activities and education, leading to increased dropout rates in school. Women are not involved in water operation and maintenance which limits income opportunities and career development. Low ability to pay for water and inadequate consultations on tariff undermines women's rights to affordable water services. At the household level women are hardly involved in decisions on resource use and are uninformed of opportunities. These inequalities increase women's vulnerability to climate impacts, especially in sectors like agriculture and water that are both climate-sensitive and female-dominate.

In response, UNICEF and the IFRC conducted a study in 2020 to examine how national and regional disaster risk management (DRM) legal and policy frameworks in Eastern and Southern Africa address gender and GBV concerns. The findings revealed significant variation in how gender considerations are integrated across DRM frameworks. Where gender integration was strong, it was supported by dedicated resources, inclusive policy processes informed by community consultations, and active coordination between DRM and gender institutions. These efforts also relied on skilled personnel able to collect and use sex-, age-, and disability-disaggregated data (SADDD), carry out gender analysis, and ensure GBV prevention and response was embedded in all phases of DRM programming.

A.3. Climate change

Kenya's climate varies significantly throughout the year across different regions.. Broadly, the country is divided into two main climatic zones, namely the arid and semi-arid region and the highland region[5]. In addition to the influence of terrain, altitude and water bodies, several other climate drivers affect weather patterns throughout the year. These include the Intertropical Convergence Zone (the low-pressure belt that drives the wet and dry seasons), the Indian Ocean Dipole (sea surface temperature variations affecting rainfall in East Africa) and the El Niño Southern Oscillation (sea surface temperature variation with global effects).[6]

Historically, Kenya's weather has been characterized by the cycle of dry conditions followed by two rainy seasons: the long **rainy season** from March to May (MAM) and the short rainy season from October to December (OND). However, in the recent years, rainfall patterns have

[5] Richardson, K., Calow, R., Pichon, F., New, S. and Osborne, R., (2022) *Climate risk report for the East Africa region.* Met Office, ODI, FCDO: UK.
[6] Kenya Meteorology Department (2024) *State of the Climate Kenya 2023* https://meteo.go.ke/sites/default/files/downloads/SoC%20Kenya%202023_1.pdf

become increasingly variable..[7] In particular, the long rainy season has experienced a decline in rainfall amount due to late onset and early cessation[8], while the short rainy season has become longer and wetter[9]. Both seasons, have exhibited significant temporal and spatial variability.

The monetised losses incurred as a result of climate related shocks is approximately 10% of the Country's GDP. The primary driver of losses among exposed sectors stems from the decelerated economic growth in industries heavily reliant on the water sector. These include agriculture, energy, health, trade, the blue economy, and others. The sluggish recovery of these sectors following climate change-induced shocks can be attributed not only to limitations in the water sector's capacity to respond but also to the ripple effects of such vulnerabilities.

While rainfall in East Africa has been below average in the last five years, extreme rainfall events have become more frequent and intense. During the 2019-2023 drought, rainfall was well below average across the region. However, the 2023 long rains that followed brought one and a half times as much rain in northern Kenya compared to the average for the last 40 years. Beyond these, however, drought conditions are also persisting for longer and becoming more intense. The impacts of intermittent **drought and flooding** have had devastating impacts on people, animals and livelihoods.[10] In 2024, the extensive and excessive rainfall throughout the country caused 708 households to be displaced in Merti South and North in Isiolo county after the Ewaso Nyiro River broke its banks, leaving a trail of destruction on nearby schools, businesses and critical health and sanitation facilities[11].

Future projections for rainfall in Kenya differ between the two climate zones. In the arid and semi-arid region, there is an expectation that **average annual precipitation** will increase due to climate change, primarily during the short rains. With regards to the highland region, there is more uncertainty, but most models also project an increase. For western Kenya, the models suggest that the short rains may get more rainfall. In general, however, it is expected that rainfall amounts will vary more from year to years, making weather conditions more unpredictable. It is also expected that extreme rainfall will become more intense in the highland region in the future, and flood risk in Lake Victoria will most likely increase.

Temperatures in Kenya have noticeably increased in the last 45 years. Analysis of temperature data from 1979 to 2023 show an **increase in average maximum temperatures** from 29 C to 30.5 C.[12] In Kenya's highland regions, the frequency and intensity of hot extremes are projected to increase, increasing the risk of heatwaves.
Mean annual temperatures have increased by 1 C since 1960.[13] There are differences in warming between different parts of the country, with higher temperatures in some ASAL counties and lower temperatures in the coastal region. Temperatures have increased by more

[7] Kenya Meteorology Department (2024) *State of the Climate Kenya 2023* https://meteo.go.ke/sites/default/files/downloads/SoC%20Kenya%202023_1.pdf
[8] Richardson, K., Calow, R., Pichon, F., New, S. and Osborne, R., (2022) *Climate risk report for the East Africa region.* Met Office, ODI, FCDO: UK.
[9] Government of Kenya (2023). *National Climate Change Action Plan (Kenya) 2023-2027*. Ministry of Environment, Climate Change and Forestry, Nairobi, Kenya.
[10] Government of Kenya (2023). *National Climate Change Action Plan (Kenya) 2023-2027*. Ministry of Environment, Climate Change and Forestry, Nairobi, Kenya.
[11] Families displaced as Ewaso Nyiro River bursts its banks. (2024, April 29). The Star. https://www.the-star.co.ke/news/2024-04-29-families-displaced-as-ewaso-nyiro-river-bursts-its-banks
[12] Kenya Meteorology Department (2024) *State of the Climate Kenya 2023* *https://meteo.go.ke/sites/default/files/downloads/SoC%20Kenya%202023_1.pdf*
[13] The Red Cross Red Crescent Climate Centre (2021) *Country-level Climate Fact Sheet – Kenya.* https://www.climatecentre.org/wp-content/uploads/RCCC-ICRC-Country-profiles-Kenya.pdf

than 1.5 C in Baringo, Turkana, West Pokot, Elgeyo Marakwet, Narok, and Laikipia in the last fifty years.[14] There are high levels of confidence that the mean annual temperature will keep increasing by an additional 1-3.5 C by the 2050s.[15] It is expected that temperatures will increase across all months of the year.

A.4. Climate-resilient (ground)water access context

By the year 2030, it is estimated that water demand will increase in all catchment areas, because of population growth leading to more demands in agriculture and domestic use and exacerbated by the effects of climate change. In Ewaso Nyiro North Basin, water stress is projected to increase to 95% (National Water Master Plan 2030).

Kenya's water sector faces major problems due to climate change and water management issues. Rising temperatures, lower rates of rainfall, and increasing evaporation are reducing water availability. At the same time, weak compliance with regulations are depleting groundwater and lowering water quality. These issues are worsening as the growing population demands more water.[16] In recent years, Kenya has experienced prolonged dry spells, leading to depleted water sources, dried-up rivers, and lowered groundwater levels. The situation is exacerbated by limited knowledge of the resource, inadequate water infrastructure and management systems, making it difficult for many Kenyans to access clean and reliable water supplies.[17]

Water scarcity and drought in Kenya have become increasingly severe due to climate change. According to the CCRI-DRM, over 9.2 million children are exposed to drought[18]. The ASAL regions are particularly vulnerable, with recurring droughts affecting water availability for both human consumption and agriculture. The CCRI-DRM notes very high-water scarcity scores across multiple Kenyan counties, including risk scores of over 9 (out of 10) for Marsabit, Mandera, Wajir, and Garissa. A survey conducted among youth in these counties showed that youth are very concerned about the impact of climate change on their communities, with 100% of respondents from Marsabit and 91% from Wajir being very concerned[19]. The 2020-2023 drought exemplified the lack of resilience of the WASH sector. At that time, more than 5 million people in the ASALs could not access safe water.

Insufficient WASH infrastructure remains a significant issue in Kenya. According to UNICEF and WHO Joint Monitoring Programme data, only 70% of Kenyans have access to basic drinking water services, 54% have access to basic sanitation services, and 38% have access to basic hygiene services.[20] While progress has been made, there are disparities between urban and rural areas, with rural populations generally having lower access rates. Furthermore, in the ASAL counties, only 24% of the population is served by **regulated water providers**; the rest are entirely unserved or depend on unreliable community-managed sources that dry up

[14] Government of Kenya (2023). *National Climate Change Action Plan (Kenya) 2023-2027*. Ministry of Environment, Climate Change and Forestry, Nairobi, Kenya.
[15] Richardson, K., Calow, R., Pichon, F., New, S. and Osborne, R., (2022) *Climate risk report for the East Africa region.* Met Office, ODI, FCDO: UK.
[16] Ministry of Water, Sanitation and Irrigation. *Climate Action in the Water Sector in Kenya - Sector Roadmap*. 2022
[17] ReliefWeb. *Kenya: Drought - 2014-2024*. 2024, January 3. https://reliefweb.int/disaster/dr-2014-000131-ken
[18] UNICEF, *The Kenya Subnational Children Climate Risk Index-Disaster Risk Model (CCRI-DRM): Providing communities with information on climate risks.* (2024) Retrieved from https://www.unicef.org/kenya/kenya-subnational-children-climate-risk-index-disaster-risk-model-ccri-drm
[19] U-Report Yunitok Kenya. (Dec. 2024). https://yunitok.in/opinion/4011/
[20] WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene. *Estimates on the use of water, sanitation and hygiene in Kenya*. 2022 https://washdata.org/data/household#!/ken

seasonally. In Marsabit, Mandera, Wajir, and Garissa over 420 villages and some large towns are dependent on emergency water trucking by government and humanitarian partners during the dry seasons, with many households spending up to 25% of their disposable income on water.

As access to water diminishes and poverty levels escalate, people resort to using unsafe water sources. This shift increases the risk of waterborne diseases, leading to elevated morbidity, malnutrition and mortality rates, particularly among children.[21] Children are more susceptible to waterborne diseases than adults due to underdeveloped immune systems and higher water intake relative to body weight. Limited access to clean water and sanitation, coupled with malnutrition, further increases the vulnerability of children to these diseases. In addition, children may have to travel longer distances to collect water, reducing time for school and play.[22] The lack of climate resilient water supplies in ASAL regions creates an increased burden on women and girls, who are often responsible for household water collection, and creates a barrier to economic development, optimal child-care and feeding practices that ensure sustainable development.

Changes in weather patterns also cause impact to infrastructure, including WASH services. A REACH assessment done in 2024 found that WASH is the most affected sector during floods, particularly as communities affected by floods often already have limited access to WASH facilities and were reliant on open water sources. Once floods hit and the limited infrastructure is damaged, families are forced to resort to unsafe water sources and sanitation practices, leading to increased likelihood of waterborne disease, including cholera[23] with profound negative impact on health and nutrition status, particularly of children under-fives years of age and women including adolescent girls.

Flooding also leads to stagnant water, providing breeding grounds for vectors.[24] The increased incidence of vector-borne and waterborne diseases puts children at higher risk of illness, potentially impacting their long-term health and development.

Reduced water availability intensifies competition between communities, impacting inter-communal tension as well as agricultural productivity and livelihoods. Competition for water resources can lead to conflicts. Deaths from water related conflicts in Kenya have risen from 200 yearly in 2009 to 1200 in 2023, and conflicts that were previously limited to rural pastoralist communities have now also spread to informal settlements in urban areas because of the failed rainy seasons.[25] This puts children at risk of physical harm, as well as at risk of displacement.

Groundwater emerges as the most suitable source for sustainable water security in ASALs, as it is more resilient to droughts than surface water and very limited surface water resourses in the ASALs. Climate change, combined with a growing population and extensive farming and livestock practices, has led to a decline in surface water availability, making it criitical to develop and manged groundwater resourses to address water insecurity in the ASALs. However, significant knowledge gaps persist regarding the country's groundwater resources and their sustainability, resulting in poor drilling success rates and limited access to quality water. These gaps hinder effective exploration, exploitation, and management of groundwater. Additionally,

[21] Kirira, P., Oyatsi, F., Waudo, A., & Mbugua, S. *Improving Access to Safe Water in Rural Schools of Kenya: Qualitative Multisectoral Insights*. 2023. Cureus, 15(12), e50269. https://doi.org/10.7759/cureus.50269
[22] UNICEF, *Analysis of the CCRI for Least Developed Countrie*s. New York: United Nations Children's Fund UNICEF, 2023.
[23] IMPACT Initiatives, *Climate shocks continue to hit Kenya* (2024) Retrieved from https://www.impact-initiatives.org/what-we-do/news/climate-shocks-continue-to-hit-kenya/
[24] Ministry of Water, Sanitation and Irrigation. *Climate Action in the Water Sector in Kenya - Sector Roadmap*. 2022
[25] Mutua, Bb, *Failed rains spark Kenya's water wars.* (2024) Fair Planet. Retrieved from https://www.fairplanet.org/dossier/water-2/failed-rains-spark-kenyas-water-wars/

many water supply systems still rely on fossil fuel-powered generators and, when necessary, reverse osmosis for water treatment, raising production costs and contributing to higher carbon emissions.

Nature-based groundwater recharge has proven to be an effective solution for addressing water scarcity in northeastern Kenya's arid and semi-arid regions. Groundwater recharge can mitigate declining borehole water levels during the dry season, increase yields and reduce salinity overtime particularly in areas in close proximity to both perennial and ephemeral rivers within the different sub drainage basins. By leveraging natural processes such as reforestation, wetland restoration, and sand dam construction, these interventions help replenish depleted aquifers, mitigate drought effects, and support both human livelihoods and biodiversity. A notable success is the widespread adoption of sand dams, particularly in Wajir County, where they capture seasonal rainwater, reduce evaporation, and provide communities with reliable water for domestic and agricultural use.

Communal behavioral practices can influence the quality of groundwater. Building toilets near riverine, over-extraction due to lack of water-sharing agreements between communities and households. In North-Eastern Kenya, water is considered a communal resources hence negative collective management practices that strain groundwater resources. Some communities regard some groundwater sources such as spring a sacred source and may benefit from community preventions approaches and less pollution compared to other sources. Due to psychological distance, some communities collectively belief that groundwater are always abundant and will be and always available resources leading them to continue to have limited knowledge on groundwater resources and disregard community-led initiative to learn how to protect and conserve groundwater. Using social and behavioral changes (SBC) localized strategies and approaches, communities can attain higher awareness and likely adopt sustainable ground-water practices and utilization.

A.5. Water access for pastoral and agro-pastoral livelihoods context

Kenya's Arid and Semi-Arid Lands (ASALs) face escalating climate-related challenges that threaten water security, livelihoods, and food systems. These regions, covering 89% of the country's landmass and supporting 70% of its livestock and 90% of its wildlife, are increasingly affected by erratic rainfall patterns, recurrent droughts, and floods. Water scarcity remains a critical issue, with prolonged dry spells depleting surface and groundwater sources while intense rainfall events lead to destructive flooding and soil erosion. Poor water governance, over-abstraction, and weak infrastructure maintenance further exacerbate these challenges, limiting access to safe and reliable water for drinking, livestock, and food production.

Pastoral and agro-pastoral livelihoods depend heavily on water availability, yet the increasing frequency of droughts has led to widespread loss of livestock and reduced agricultural productivity. The degradation of rangelands due to overgrazing and unsustainable land management practices has further strained water resources. Disrupted herding patterns and competition over scarce pasture and water have intensified conflicts among communities, undermining social cohesion and resilience. In many areas, groundwater is the primary water source, but its overuse, coupled with limited recharge due to reduced rainfall, is leading to long-term depletion, making pastoralists and agro-pastoralists increasingly vulnerable.

Food insecurity continues to rise as declining agricultural yields and livestock losses push households into deeper poverty. The recent drought (2020–2022) left one million people facing

acute food insecurity by mid-2024[26], with counties in the Ewaso Nyiro River Basin—Mandera, Wajir, Marsabit, Isiolo, Garissa, and Tana River—among the worst affected. Many households have resorted to negative coping mechanisms, such as selling livestock and assets, reducing meal portions, and prioritizing livestock water needs over household consumption. These practices, along with poor dietary diversity and limited access to clean water, contribute to worsening malnutrition. Currently, two in ten children under five are wasted and stunted, while over 75% of children aged 6–23 months are not receiving a minimum acceptable diet[27].

Women in pastoral communities bear the heaviest burden, trekking long distances to fetch water, which reduces the time available for childcare and food preparation. Inadequate sanitation and hygiene practices, driven by water shortages, increase the risk of waterborne diseases, further weakening community health and nutrition. The reliance on traditional pastoral practices, such as overstocking livestock and prioritizing livestock water needs, exacerbates pressure on already fragile water resources. Resistance to alternative water conservation methods and limited awareness of sustainable water management further hinder adaptation efforts.

Climate projections indicate that Kenya will experience a 1.4°C temperature rise by 2030, with ASAL counties expected to face more extreme heat and prolonged dry spells. Rainfall variability will continue to pose challenges, leading to increased reliance on groundwater sources, which are already under pressure. Drought cycles, which previously occurred every 5–10 years, are now happening every 2–3 years, accelerating land degradation and resource depletion. The World Bank warns that declining water availability will further reduce agricultural productivity and livestock numbers, while indirect climate impacts, such as increased soil erosion, pest infestations, and wildlife migration, will compound the crisis.

Without urgent intervention, the worsening water crisis in pastoral and agro-pastoral communities will continue to undermine livelihoods, food security, and health. Addressing these challenges requires a comprehensive approach that strengthens water governance, promotes sustainable land and water management, and enhances climate-resilient livelihoods. Improved access to water through efficient irrigation systems, water harvesting technologies, and groundwater recharge initiatives is essential to sustaining pastoral and agro-pastoral livelihoods in the face of climate change.

A.6. Early warning and anticipatory action context

Over the past few decades, the ASAL of Kenya have become increasingly vulnerable to climate variability and extreme weather events including prolonged droughts, erratic rainfall, and floods. These climate-induced hazards threaten livelihoods, food security, water availability, and biodiversity while exacerbating environmental degradation, poverty, socio-economic instability, and resource conflicts that disproportionately affect pastoralist and agro-pastoralist communities specifically women, youth and children. During the recent drought of 2020-2023, Kenya experienced five consecutive below-average rainy seasons, leaving an estimated 6.4 million people in need of humanitarian assistance and causing approximately 2.5 million

[26] Kenya NDMA: Long Rains Food Security Assessment Report, July 2024 https://ndma.go.ke/12636-2/#:~:text=2024%20Long%20Rains%20Food%20and%20Nutrition%20Security%20Assessment%20Report,-Published%20On%20%2D%20August&text=The%20onset%20of%20the%20March,earlier%2Dthan%2Dnormal%20onset.
[27] Integrated Phase Classification for Acute Malnutrition Report, July 2024

livestock deaths in pastoral areas[28]. Strengthening early warning and anticipatory action (AA) mechanisms in ASAL Kenya is essential to transitioning from reactive climate risk management to proactive risk reduction. AA are the actions taken to reduce the impacts of forecasted climate hazards before they occur, or before the most acute impacts are felt. By enhancing early warning systems, improving access to climate information services, and supporting anticipatory action (AA) financing mechanisms, this project will empower vulnerable communities and minimize the impact of climate shocks before, during, and after they occur, ultimately strengthening climate resilience.

AA in Kenya faces systemic challenges, including inadequate financing, lack adequate and accessible flood early warning systems, limited human resources capacities, limited use of weather, climate, and vulnerability data, and weak multiagency coordination. A lack of awareness and capacity for effectively using early warning systems at county and community levels exacerbates these issues, hindering the timely implementation of preventative measures and actions. In the ASALs, communities have long-held traditional ways influenced by cultural beliefs of predicting and responding to shocks as part of early warning system and there has been limited integration of this ways into Early warning and anticipatory action context modern EWS. Moreover, the weak integration of scientific forecasting with indigenous knowledge, inadequate dissemination channels, and limited institutional coordination hinder proactive response measures.

During the recent drought the government of Kenya and development partners such as Kenya Red Cross and affiliate bodies developed an Early Action Protocol (EAP)[29] to guide the timely and effective implementation of early actions. WFP together with the county governments of Marsabit and Wajir recently developed an Anticipatory Action Plan (AAP) for Marsabit and Wajir counties for OND 2024 season. Although the AAP was preapproved to access funding if activation was reached, the triggers and thresholds were not reached despite communities facing climate change impacts. This was due to the inherent challenges in the development of AA triggers and thresholds, that lacked the integration of vulnerability data. Additionally, the Kenya Meteorological Department has highlighted several ongoing challenges. For instance, the low predictability of the (March-April-May) MAM season which limits the accuracy of early warning forecasts during this critical period, lack access to sub-seasonal data from key global modeling centers, which constrains its ability to produce detailed SPI forecasts. Furthermore, the absence of a comprehensive impact database makes it difficult to align forecasts with real-world socio-economic drought impacts and produce impact-based forecasting[30]. This makes it challenging to develop effective AAPs.

There is also a lack of real-time flood forecasting. However, there are free and easy to use online flood models available such as the Google flood hub, which can be leveraged by the county government to send flood warning up to 7 days in advance based on the predictions of the Google flood hub. The Google flood hub also can identify historic flood areas on a high resolution which will be used to identify locations at risk for better targeting[31].

[28] *United Nations and partners call for $472.6 million to respond in 2023 as the drought in Kenya deepens*. (2023.). Kenya. https://kenya.un.org/en/208262-united-nations-and-partners-call-4726-million-respond-2023-drought-kenya-deepens

[29] Kenya: Drought - Early Action Protocol Summary https://reliefweb.int/report/kenya/kenya-drought-early-action-protocol-summary-eap2022ke02

[30] Workshop Report: Developing an Action Plan for the Kenya Drought Watch System and Reviewing Triggers and Thresholds for Drought Anticipatory Action. Accelerating Impacts of CGIAR Climate Research for Africa (AICCRA). https://cgspace.cgiar.org/server/api/core/bitstreams/8d8c9703-f0c8-4c25-be32-6bfbe4d6d5b9/content

[31] https://sites.research.google/floods/l/0/0/3

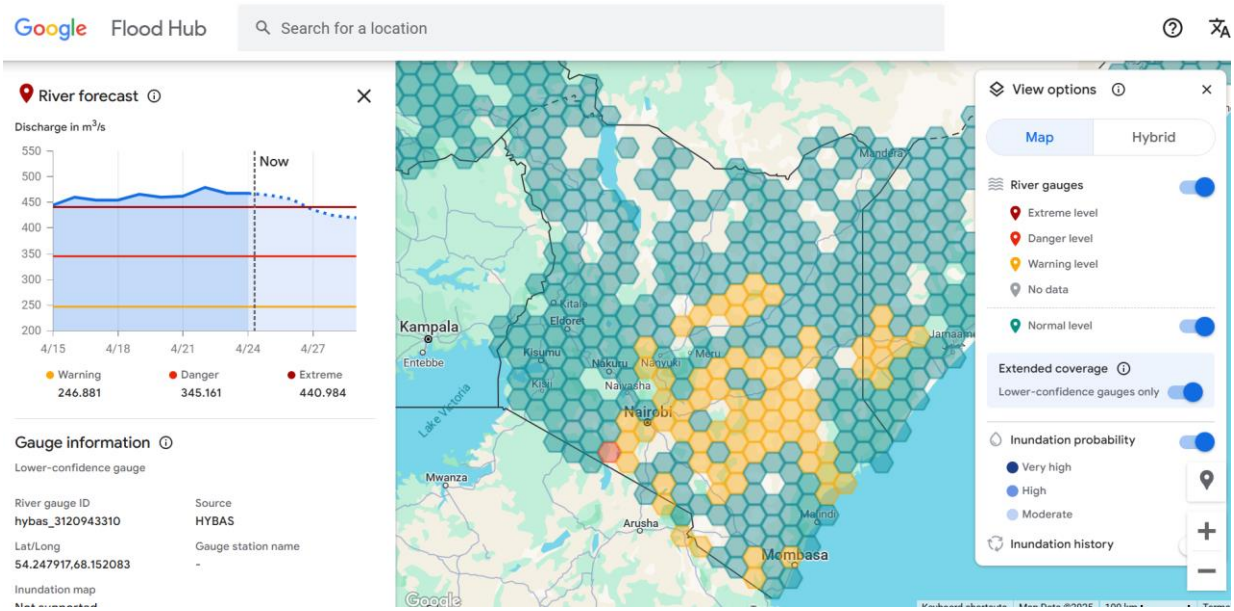


Figure 5: Google Flood Hub snapshot

Recognizing systemic challenges, Kenya's national Technical Working Group (TWG) on AA has developed a five-year roadmap (2024–2029)[32] to foster an enabling environment and improve interagency coordination for effective AA. The roadmap is structured around seven pillars designed to address critical gaps in policy, funding, and coordination:

1. **Early Warning**: Strengthening hazard monitoring and forecasting systems.
2. **Early Action**: Advancing hazard-to-impact modeling for targeted interventions.
3. **Coordination and Governance**: Enhancing the role of government institutions in adopting the AA approach.
4. **Research and Innovation**: Promoting scientific inquiry to address challenges in implementing AA.
5. **Policy and Advocacy**: Advocating for government recognition of risk-sensitive approaches to disaster management.
6. **Financing**: Lobbying for government allocations to anticipatory financing mechanisms.
7. **Monitoring, Evaluation, and Learning**: Establishing robust knowledge management and information-sharing systems.

Under the Early Warning pillar, the roadmap emphasizes establishing a synchronized national framework for developing hazard triggers and thresholds. It also advocates for enhanced collaboration between forecasters and practitioners, strengthening the capacity for impact-based forecasting and anticipatory action through joint training and research initiatives.

In addressing the unique vulnerabilities of children, the Kenya Sub-National Children's Climate and Disaster Risk Model (CCDRM)—developed by UNICEF and the Ministry of Environment, Climate Change, and Forestry—provides critical insights. The CCDRM assesses children's exposure to climatic and environmental stressors at the county level and highlights underlying vulnerabilities. However, while this tool offers valuable risk assessments, it is insufficient on its own to address the dynamic nature of weather related risks.

To enhance its utility, the CCDRM must be integrated with seasonal weather forecasts provided by the Kenya Meteorological Department (KMD) and streamflow data from Water

[32] Kenya National Technical Working Group on Anticipatory Action. (2024). Kenya Anticipatory Action Roadmap 2024 - 2029. Nairobi. https://www.icpac.net/documents/923/Kenya-Anticipatory-Action-Roadmap-2024-to-2029.pdf

Resources Authority (WRA). These forecasts offer timely insights into upcoming climatic conditions, enabling targeted interventions. By linking the CCDRM with forecasts and defining integrated AA triggers, stakeholders can develop actionable anticipatory measures, such as pre-positioning supplies, conducting community awareness campaigns, and improving infrastructure. This integration will ensure that early warning systems not only identify high-risk areas but also provide specific, timely advisories to protect children, their support systems, and their communities. Active engagement of communities in all phases of the AA from the early stages of risk assessment to response planning is very crucial to enhance community trust, local ownership, and adoption of social norms that may hinder uptake of new-behaviours and reduce social divisions and inequalities. Additionally, there is continued need to provide a two-way feedback and communication through accountability to affected population on the EWS to better learn and improve on its use and understanding by community members.

Through such strategic alignment, Kenya can significantly strengthen its AA systems, reduce vulnerabilities, and build resilience against future climate shocks.

A.7. Climate change adaptation policy and coordination context

Kenya has established itself as a legislative leader in climate change through the enactment of the Climate Change Act in 2016 (revised 2023), which provides a comprehensive legal framework for climate action. This Act mandates the creation of Climate Change Units (CCUs) across various government bodies, including county governments, to mainstream climate change into national and local development plans. The recent launch of the National Climate Change Action Plan (NCCAP) III (2023–2027) outlines Kenya's strategic priorities for climate action, focusing on both mitigation and adaptation measures.

Despite these positive developments, significant challenges persist in Kenya's climate adaptation governance and knowledge management. A key issue is the limited coordination among stakeholders, which undermines the effectiveness of climate adaptation interventions. While Kenya has made progress in integrating climate change considerations into development plans, there is a lack of detailed vulnerability and risk assessments for critical sectors such as water, health, nutrition and energy, hindering targeted interventions. Despite the establishment of CCUs, their capacity remains limited, especially at the county level, affecting their ability to effectively coordinate adaptation efforts at the county level[33].

Another major challenge is the insufficient involvement of youth and gender perspectives in climate governance. Youth (representing 80% of the population) and women are often underrepresented in decision-making processes, limiting their contributions to innovative climate solutions and adaptation strategies. Government institutions at all levels should explore innovative mechanisms for youth engagement on climate change and seek to integrate the climate change agenda into youth development programs. This is clearly outlined in Kenya's NCCAP 2023-2027 priority 8 on youth and children, which calls for the involvement of youth in climate policies, but also to build their capacity on the development of bankable climate change project proposals.

Furthermore, the current National Adaptation Plan (NAP) requires updating to reflect the latest climate data and projections, especially as Kenya will submit the update of its Nationally Determined Contributions (NDCs) in 2025. This update is crucial to ensure that the NAP aligns with both national and international climate commitments and provides a clear roadmap for the

[33] International Monetary Fund. Fiscal Affairs Dept. (2024). Kenya: Technical Assistance Report-Climate module of the Public Investment Management Assessment. IMF eLibrary. https://doi.org/10.5089/9798400268342.019.A001

adaptation measures necessary to address current and future climate risks. In this context, Kenya's adaptation efforts need to be more inclusive, well-coordinated, and adequately resourced to ensure that the country can effectively manage climate risks and build resilience across all sectors and communities.

Lastly, Knowledge management (KM) for climate adaptation is essential for ensuring that accurate and relevant climate data is effectively shared and utilized across all levels of government and society, including by last-mile communities. In Kenya, the Climate Change Directorate (CCD) Knowledge Platform aims to facilitate (part of) this. However, the platform has remained largely dysfunctional due to capacity problems at the Ministry. Further challenges in KM remain, including gaps in data collection, limited infrastructure, and difficulty reaching rural and marginalized areas. For KM to be effective, it must ensure that both scientific research and local knowledge inform adaptation strategies. This means developing systems that make climate data accessible to local communities, empowering them to make informed decisions and implement climate-resilient practices. By strengthening KM and ensuring it reaches the most vulnerable populations, Kenya can improve coordination among stakeholders, enhance policy effectiveness, and increase the overall impact of climate adaptation efforts.

A.8 Waste management context

The arid counties of Wajir and Marsabit, in North Eastern Kenya face significant waste management challenges besides the recurring extreme droughts and floods. Moyale and Marsabit towns in Marsabit county with an urban population of 52,388 and 39,730 respectively, lack adequate waste collection systems and disposal infrastructure. Wajir town which has a high water table and whose urban population relies on shallow wells, posing a high contamination risk, equally has one of the highest and fast-growing urban population currently estimated at 101,365. The general mode of waste disposal in these urban spaces in the Ewaso Nyiro catchment is by open dumping and burning. The waste disposal site in Wajir town has been linked to the contamination of water aquifers serving the urban population. The towns of Moyale and Marsabit have no legal waste management (dumping) sites at all, leading to illegal dumping and scattering of waste, causing blockades on the drainage systems in the urban areas and causing water pollution and flooding. As the population continues to grow[34] an increase in solid waste generation has been witnessed, straining already insufficient waste management systems besides contributing to environmental pollution and posing public health risks[35] through water contamination, depriving the urban population clean drinking water and damge to infrastructure due to flooding as a result of blocked drainage systems . Conversely, during droughts, the lack of water for sanitation and hygiene intensifies reliance on unsafe hygiene practices, increasing vulnerability to disease outbreaks.

Materials Recovery Facilities (MRFs) offer an adaptive solution by improving waste segregation and reducing the volume of unmanaged waste, which in turn helps maintain cleaner urban environments and enhances the resilience of public health systems and infrastructure. The National Environment Management Authority (NEMA), under the framework of the Sustainable Waste Management Act, 2022, has prioritized the promotion of MRFs across counties as part of a decentralized and climate-smart waste management system. Through

[34] Kenya National Bureau of Statistics & The National Treasury and Planning. (2022). Kenya National Bureau of Statistics. https://www.knbs.or.ke/wp-content/uploads/2023/09/2019-Kenya-population-and-Housing-Census-Analytical-Report-on-Population-Dynamics.pdf

[35] UNICEF Kenya. (2023). *UNICEF Kenya Consolidated Emergency Report 2022*. https://open.unicef.org/sites/transparency/files/2023-05/Kenya CER 2022.pdf

technical support, policy enforcement, and pilot projects, NEMA is facilitating the integration of MRFs into county waste plans, while also supporting public awareness and source segregation efforts. These initiatives contribute not only to improved waste recovery and circular economy outcomes but also to enhanced adaptive capacity, particularly in climate-vulnerable urban areas.

Water quality monitoring for timely detection of contaminants and the implementation of corrective measures can greatly complement adaptation efforts. The absence of systematic monitoring programs allows pollutants from waste to compromise the drinking water sources, posing health risks to the local population. Implementing regular water quality assessments is essential to safeguard public health and ensure the sustainability of water resources in the face of environmental and climatic challenges.

B. Project/Programme Objectives:

Considering the context and problems outlined above, the AWARE program has the objective to make *Vulnerable communities in EWASO NYIRO RIVER BASIN experience improved well-being, water access, food security, and reduced vulnerability to climate change and climate-induced shocks, contributing to sustainable development and climate resilience.*

The program is structured in five distinct components:

1. **Climate resilient water access for human and livestock consumption:** Sustainable groundwater development and water conservation measures to reduce vulnerability of communities to climate induced disasters (mainly drought and floods) through provision of climate resilient water access infrastructure as well as surface water run-off retention and recharge structures including supporting continuous professional development.

   Aligned to AF outcomes:
   Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses.
   Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors.
   Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress.

2. **Ecosystem restoration and climate resilient livelihoods for food and nutrition security:** Sustainable and diversified agro-pastoral and pastoral livelihoods for improved food and nutrition security supported by development and management of climate resilient water assets and ecosystem restoration.

   Aligned to AF outcomes:

   Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level
   Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors.
   Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress.
   Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas.

3. **Enhanced early warning systems and anticipatory action:** Reduced vulnerability of communities to floods and droughts by providing an effective flood and drought risk assessment, monitoring and early warning system, increased capacity and knowledge base, and inclusive communication strategy.

   Aligned to AF outcomes:

   Outcome 1: Reduced exposure at national level to climate-related hazards and threats.
   Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level.

4. **Systems strengthening for enhanced and inclusive climate adaptation coordination and knowledge management:** The Ministry of Environment, Ministry of Water, and County Climate Units will be supported to improve inclusive coordination, update the National Adaptation plan, and enhance knowledge management for climate adaptation. All with a strong focus on youth and women participation.

   Aligned to AF outcomes:

   Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses.
   Outcome 7: Improved policies and regulations that promote and enforce resilience measures

5. **Enhanced water quality through climate resilient waste management:** Community and institutional capacity to safely manage waste and monitor water quality is strengthened, preventing waste ending in the environment during heavy rainfall causing water pollution, disease and flooding.

   Aligned to AF outcomes:

   Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses.
   Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress.

Adaptation zones

The project will establish adaptation zones where the five components will largely converge in common geographic areas in all the sub drainage basins and build on the existing climate-resilient impact hubs identified by the County Governments of Marsabit, Wajir, Mandera, and Garissa. The hubs are catalysing investments in climate adapted livelihoods using a multi-sectoral and system approach to bring long-lasting change to agro-pastoral and pastoral communities and build their capacities to manage shocks and stressors. These will be overlayed with watershed/sub catchment maps to identify "adaptation zones", where progress will be accelerated to show impact and create multiplier effects. A special focus will be on the Lorian Swamp wetland areas, a fertile plain at the border of Garissa and Wajir county where the Ewaso Nyiro River drains into.

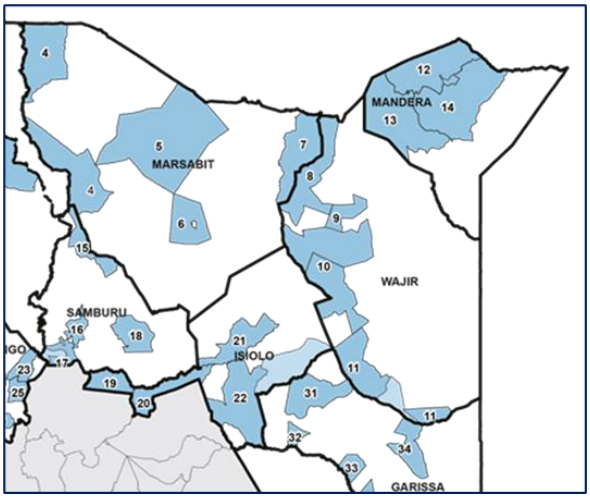


Figure 7: County climate resilience hubs

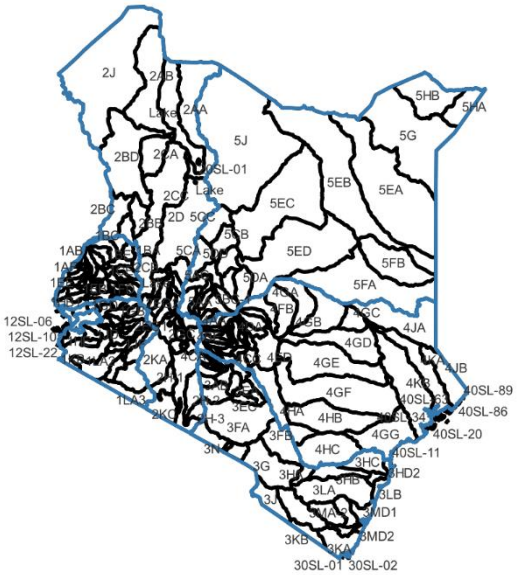


Figure 6: River subcatchments in Kenya

C. Project/Programme Components and Financing:

Table 1: Project Components and Financing

Project/Programme Components	Expected Outcomes	Expected Concrete Outputs	Amount (US$)
1. Climate-resilient Water Access for Human and livestock Consumption	OUTCOME 1: By 2029, increased numbers of people are benefiting from climate-resilient water systems in targeted communities within the Ewaso Nyiro North River Basin (ENRB)	Output 1.1: Enhanced capacity of Water Resource Management Institutions and professionals for sustainable groundwater development and management in ENRB Output 1.2 Improved rain/floodwater harnessing for Managed Aquifer Recharge (MAR) and Nature-based Solution (NbS)	8.95M

		Output 1.3: Climate-resilient groundwater infrastructure developed and in operation in target communities within ENRB counties Output 1.4: Strengthened financial management capacity of Water Services for sustainable water service delivery in the context of climate change	
2. Ecosystem restoration and climate resilient livelihoods for food and nutrition security	OUTCOME 2: By 2029, communities in targeted ENRB locations have established and sustained climate-resilient and diversified livelihoods supported by functional water infrastructure and resilient and productive ecosystems	Output 2.1: Prioritized rangeland resources including land are brought under restoration, safeguarded and sustainably managed for improved climate change resilience Output 2.2: Community-validated climate resilient water infrastructure developed and or rehabilitated for food security Output 2.3: Climate-smart agriculture and nature-based enterprises promoted through inclusive value chains for climate-resilient livelihoods Output 2.4: Improved household access to nutritious and diversified diets, contributing to enhanced livelihood resilience	5.5M
3. Anticipatory action	OUTCOME 3: By 2029, communities in targeted ENRB locations benefit from having an enhanced early warning system	Output 3.1: Flood EWS accuracy improved by incorporating more data using existing open source flood models Output 3.2: Improved Anticipatory Action triggers defined in updated plans, integrating (child) vulnerability in target counties and nationally Output 3.3: County budgeting process for Anticipatory Action strengthened Output 3.4: Early Warning	800k

		Communication systems improved to effectively reach last-mile communities	
4. Systems strengthening for enhanced and inclusive climate adaptation coordination and knowledge management	OUTCOME 4: By 2029, the Ministries of Environment and Water and County Climate Units in targeted ENRB counties adopt an enhanced coordination and governance framework.	Output 4.1: Enhanced capacity of the Ministry of Water and County Climate Unites in targeted ENRB Counties for inclusive and participatory climate adaptation planning and coordination in the water sector. Output 4.2: National Adaptation Plan (NAP) updated through an inclusive and participatory process incorporating feedback from key stakeholders, including youth and ENRB County Representatives Output 4.3: Increased capacity of youth in targeted ENRB counties to meaningfully participate in climate adaptation governance and action Output 4.4: A functional and regularly updated climate change and adaptation knowledge platform established and used by the Ministries, County Climate Units, Youth, and other stakeholders in targeted ENRB counties	650k
5. Enhanced water quality through climate resilient waste management	OUTCOME 5: By 2029, an increased number of people in targeted ENRB communities benefit from safe climate-resilient waste management and water quality practices in communities	Output 5.1: Enhanced technical capacity of relevant institutions in targeted ENRB Counties for water quality monitoring and enforcement related to waste management. Output 5.2: Increased access to climate-resilient waste management infrastructure Output 5.3: Improved knowledge and adoption of safe and climate-resilient waste management practices and the importance of water quality monitoring within communities and institutions Output 5.4: Strengthened	500k

		organizational capacity of county environmental committees in ENRB Counties to develop, implement, and monitor policies and actions addressing waste-related water pollution.	
Project/Programme Execution cost			1.9M
Total Project/Programme Cost			18.3M
Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			1.7M
Amount of Financing Requested			20M

C.1 Projected Calendar:

While Table 2 indicates the key dates of the project, Annex 2 contains a quarterly workplan.

Table 2: Project calendar

Milestones	Expected Dates
Start of Project/Programme Implementation	January 2026
Mid-term Review meeting	June 2027
Project/Programme Closing	January 2029
Terminal Evaluation	June 2029

C.2 Beneficiary estimates

Project beneficiaries per component are displayed in Table 3. While beneficiaries per output can be found in Annex 9

Table 3: Beneficiary estimates

Component	(beneficiary) indicator	target
Climate-resilient Water Access for Human and livestock Consumption	*Number of people reached with at least Basic Water that is safe and available when needed*	266,000
Ecosystem restoration and climate resilient livelihoods for food and nutrition security	*Number of people benefitting from investments in ecosystem restoration and climate-resilient livelihoods supported by public and private resources*	176,000
Enhanced early warning systems and anticipatory action	*NA*	NA

Systems strengthening for enhanced and inclusive climate adaptation coordination and knowledge management	*NA*	NA
Enhanced water quality through climate resilient waste management	*Number of people benefiting from climate resilient waste management infrastructure* *Number of people with increased awareness of sustainable waste management*	22,407 90,000

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Project components

The proposed project targets two specific impacts of climate change and the associated risks affecting the already vulnerable population in the Ewaso Nyiro North River Basin: (1) The rising frequency and intensity of droughts, which challenge the lack of resilience of the water sector, prevent continuous and safe water supply, pose public health risks, and undermine livelihoods; (2) Increasingly unpredictable and intense rainfall, which leads to flooding, damages fragile water infrastructure, causes water pollution through waste, and devastates livelihoods.

This recurring and worsening cycle of water scarcity (drought) and excess (flooding), combined with the limited climate resilience of water sector institutions—due to capacity and knowledge gaps in implementing climate-resilient interventions—and fragile infrastructure, along with a vulnerable population dominantly reliant on livestock and rainfed crop production, highlights a clear need for climate change adaptation, *especially in the water sector*. However, the following barriers exist:

1. Capacity and infrastructure gaps in knowledge, exploration, exploitation, and sustainable management of groundwater created critical service gaps especially for the most vulnerable groups including minorities, women, people with disabilities and others.
2. Water scarcity and inadequate water assets and their maintenance, unsustainable land use practices that lead to reduced productivity and limited access to markets. This also limited access to water resources to marginalized and vulnerable groups.
3. Systemic challenges in identifying and assessing risk, anticipatory action and early warning systems, including inadequate financing, limited understanding, use and transmission of weather, climate, and vulnerability data, and weak coordination
4. Limited coordination, insufficient involvement of youth, women and other vulnerable groups perspectives, inadequate focus on behavior change, and lack of access to finance in climate adaptation governance and knowledge management efforts.
5. Inadequate waste management, combined with insufficient water quality monitoring, resulting in water contamination and disease outbreaks during floods, as well as an increased risk of salinity and fluoride contamination in drinking water during droughts.
6. High population vulnerability and limited adoption of climate-adaptive behaviors. Recognizing that reducing vulnerability is the foundation of adaptation.

To address these barriers, the program will therefore deploy a combination of 5 climate adaptation measures (components) to empower local communities (focusing on vulnerable and marginalized groups like women, people with disabilities and minorities), managers and policymakers at the county and national levels to adapt to the above-outlined climate change challenges, namely:

(i) Developing capacity to enhance knowledge and sustainable management of groundwater resources, including water quality, and establishing infrastructure to ensure climate-resilient access for human and livestock consumption.

(ii) Integrated water and land management solutions that support development and or rehabilitation of water infrastructure and rangeland restoration for improved climate-resilient crop and livestock livelihoods and reduced population vulnerabilities.

(iii) Establish and strengthen climate risk information for water related hazards, to strengthen EWS and Anticipatory Action as well as communication of alerts and other climate data related information appropriate for local community context

(iv) Strengthening the system for climate change adaptation, knowledge management, coordination and policies with emphasis on the inclusion of women, youth and children.

(v) Improving waste management and water quality monitoring, to prevent contamination of (drinking) water and other environmental resources during floods and drought.

Ultimately, this combination will result in a population of the ENRB that has year-round climate resilient water access, diversified livelihoods and diets less susceptible to climate change, and is better and timely informed on climate change and related hazards, prompting timely anticipatory action supported by climate adaptive behavior and early warning systems. This will significantly reduce their vulnerability and strongly support the community, and the sectors they rely on, in climate adaptation.

Project AWARE will have a gender transformative approach to ensure that women are engaged as active and effective agents and promoters of climate change adaptation and mitigation. Women and girls should not only be considered victims of climate change but also as agents of change. To promote gender equality and women's empowerment throughout the process, women will be involved in decision-making for climate action. This will ensure the integration of their knowledge and experiences regarding climate change. This enriches the discourse with diverse perspectives and talents.

The interventions and their outputs are described in more detail below.

A.1. Climate resilient water access for human and livestock use

The project component is aligned to the Kenya sessional paper No. 1 of 2021 on National Water Policy, National Adaptation Plan 2015 to 2030 and the National Water sector Investment programme (NAWASIP) 2023 – 2030; to improve the adaptive capacity of vulnerable communities particularly women, children, youth and disabled persons for sustainable access to climate resilient safe water services for enhanced public health, education and welfare and be more resilient to climate induced emergencies.

This will be achieved by strengthening the human resources capacity for sustainable groundwater development and management, improving seasonal run-off water conservation and groundwater recharge including nature-based solutions, establishing climate resilient groundwater services

and infrastructure, and strengthening the technical and management capacity of Water Service Providers.

***Output 1.1: Strengthened Human Resources capacity for sustainable and climate resilient Groundwater development and Management in ENRB*.**
This output aims to build the capacity of sector professionals working in the four target counties to effectively plan, manage, and monitor groundwater resources in the face of climate change. It focuses on professional development through technical skills training programs, peer learning, mentoring and coaching to support the sustainable development and management of groundwater in the region.

- **Activity 1.1.1** Develop and implement training program on climate change & hydrological analysis in partnership with Hydrological Society of Kenya (HSK) and the Hydrologists Registration Board and establish structure for Continuous Professional Development (CPD) in HSK.
- **Activity 1.1.2** Develop and implement training program on hydrogeological analysis & best practices with GSK and establish structure for CPD in Geological Society of Kenya (GSK)
- **Activity 1.1.3** Establish structure for CPD and training program of drillers including on design, construction & operation of climate resilient borehole water supply systems for graduate engineers

Output 1.2 Improved rain/floodwater harnessing for Managed Aquifer Recharge (MAR) and Nature-based Solution (NbS)
The output will strengthen the management of seasonal rainfall run-off to enhance groundwater recharge and retention, improve water availability during the dry season from ephemeral rivers, enhance reliability and water quality of existing boreholes including reduced salinity levels. This is done through the construction of sand dams and reverse wells.

- **Activity 1.2.1** Feasibility study to identify locations for construction of water conservation (sand dams) and Managed aquifer structures (Reverse wells) in priority sub drainage basins, site and design.
- **Activity 1.2.2** Construct sand dams and /or sub surface dams and provide solarized water abstraction equipment and community water points.
- **Activity 1.2.3** Construct water filtration and reverse wells for managed aquifer recharge to increase yields and /or reduce salinity of existing boreholes.

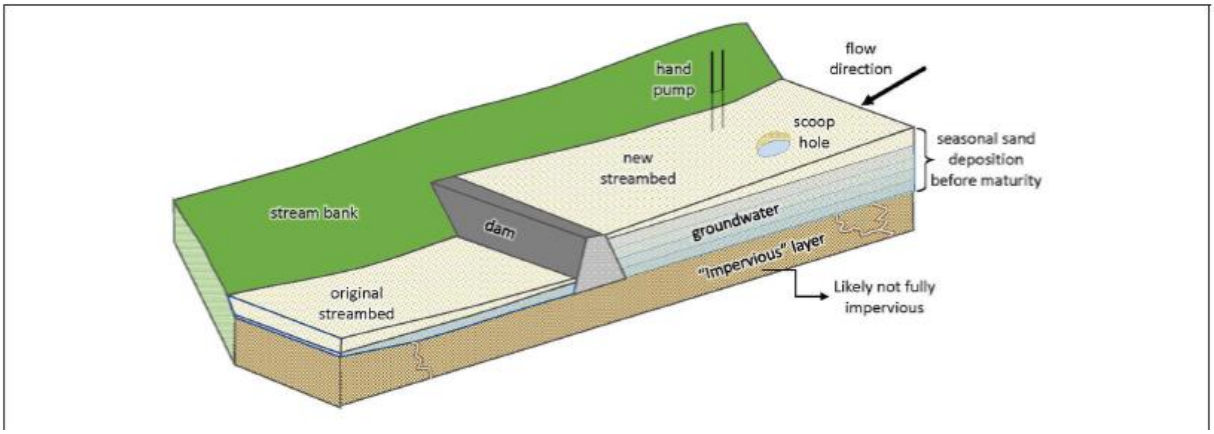


Figure 8: Sand dam schematic showing seasonal sand deposition before maturity and two common abstraction methods (Esma and Merwade, 2020)

Site selection criteria

Sand dam sites were proposed by County government officials and overlayed with WFP hubs and groundwater suitability maps to identify high demand locations with potential for sand dams. Sites with existing scoop holes where people traditionally obtain water but do not provide year-round water availability, will be selected for technical feasibility assessment and design of the structures. The geo-locations for the proposed sites are indicated in Annex 6.

Output 1.3: Climate-resilient groundwater infrastructure developed and in operation in target communities within 4 target Counties.

This output focuses on enhancing access to reliable and sustainable groundwater services in 4 target counties in Ewaso Nyiro basin. By constructing new infrastructure, upgrading existing infrastructure, adopting green energy solutions, and utilizing innovative technologies, the project will ensure communities, schools, and healthcare facilities have access to climate-resilient (ground)water systems. This component will target Leave No One Behind (LNOB) groups comprising of marginalized minority groups, women, people with disabilities and other vulnerable groups.

- **Activity 1.3.1** Drill and equip new boreholes for climate resilient community water supplies including solarization, hydrogeological and geophysical surveys.
- **Activity 1.3.2** Upgrading of existing borehole systems to be climate resilient for communities in water scarce locations including solarization
- **Activity 1.3.3** Provision of climate resilient water supply connection to schools
- **Activity 1.3.4** Provision of climate resilient water supply connection to healthcare facilities
- **Activity 1.3.5** Upgrading of Shallow Wells to renewable energy Pumped Systems
- **Activity 1.3.6** Construction of multi-village water supply scheme including hydrogeological & geophysical survey

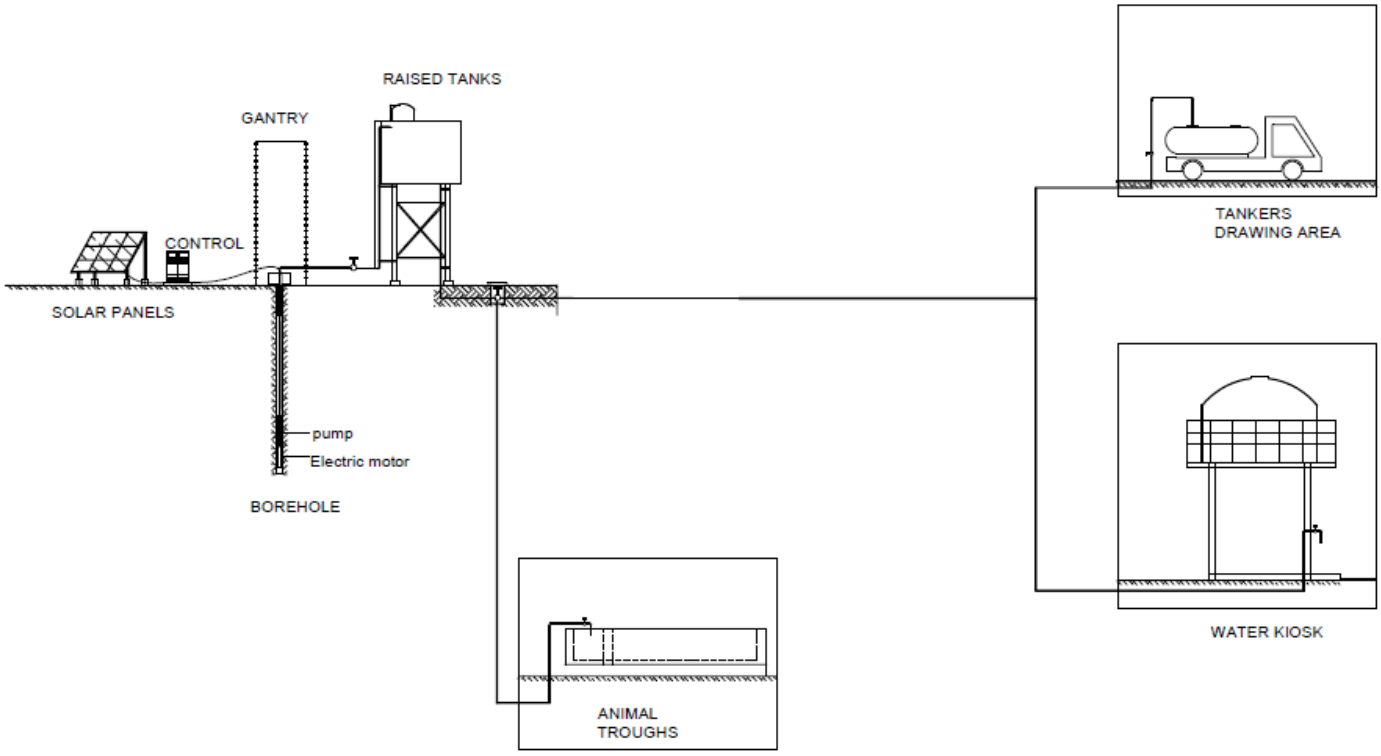


Figure 9: Schematic of solarized borehole system including animal trough, water kiosk and tanker drawing area.

Site selection criteria

UNICEF has implemented an innovative groundwater suitability mapping (Figure 9) combining remote sensing, weighted GIS overlay analysis, hydrogeological assessment and geophysical surveying, that has shown potential to significantly increase ground water drilling success rates. Groundwater suitability maps produced under this program for the targeted counties were overlayed with the list of villages prone to seasonal water trucking that was shared by the county governments and further overlayed with WFP hubs to identify the potential new borehole drilling sites in high demand areas. Hydrogeological and geophysical surveys will be undertaken to site the actual drilling location of the new boreholes. In addition to the technical feasibility of the sites the project will also prioritize locations with high community vulnerabilities to ensure the project is focusing on addressing issues to LNOB groups. The approximate geo-locations for the proposed sites are indicated in Annex 6.

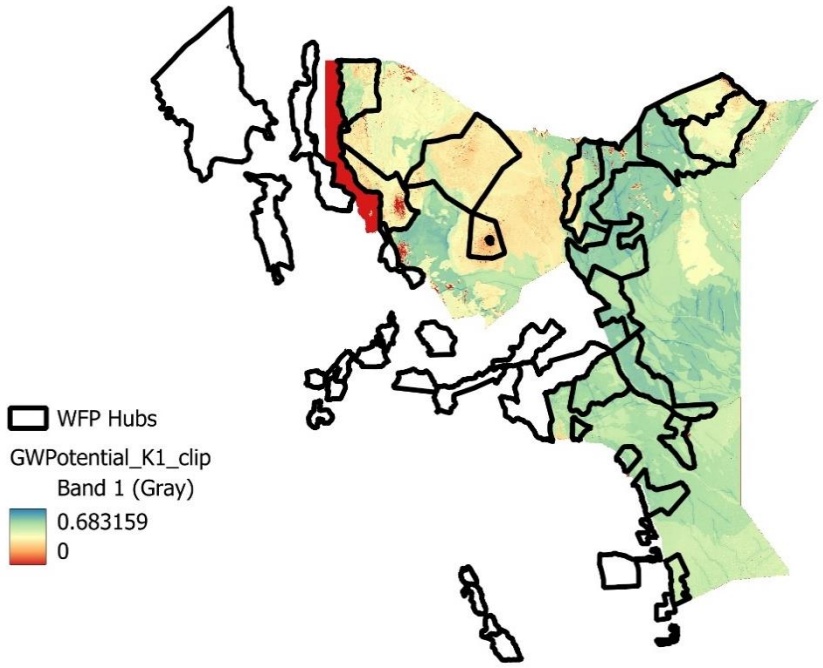


Figure 10: Groundwater potential and County resilience hubs in target counties

Output 1.4: Strengthened financial management capacity of Water Services for sustainable water service delivery in the context of climate change.

This output focuses on improving the capacity, financial sustainability, and management of water services in 4 target counties. By building technical skills, promoting innovative financing models, and enhancing governance structures, the project aims to ensure the delivery of equitable and sustainable water services, with a focus on LNOB groups**.** The project will support affordability analysis, establish a lifeline tariff and pro-poor rates and mandatory criteria for inclusion of marginalized women in the planning, implementation and management of the water infrastructure. The output (through activity 1.4.9) will also strongly involve the community including women and people with disabilities and ensure they are aware of the water governance structures that support them but are also accountable to the community as end users. By putting feedback loops in place, the community can report misuse or poor service by the water point management.

- **Activity 1.4.1** Train young people from target counties on sustainable climate resilient water supply operation and maintenance which includes training, coaching / mentoring and follow up - at Kenya Water Institute and provide basic tools

- **Activity 1.4.2** Build capacity of County water departments and Water Service Providers (WSPs) on climate resilient planning, design, O&M, water safety planning, Water Quality monitoring & last-mile connectivity to LNOB groups.
- **Activity 1.4.3** Establish & operationalize professional O&M model in all rural areas
- **Activity 1.4.4** Technical support to WSPs to develop sustainable tariff for full O&M cost recovery by ensuring affordability for LNOB groups
- **Activity 1.4.5** WSPs supported to increase metering ratio to reduce Non Revenue Water and appropriate technology adopted to support data management, leakage detection and service monitoring
- **Activity 1.4.6** Build capacity of WSPs to enforce water resources management rules
- **Activity 1.4.7** Train Board of directors, water committees /municipal boards on water governance
- **Activity 1.4.8** Support WSPs develop & implement pro-poor policies
- **Activity 1.4.9** Sensitization of community on County Water Governance, their water rights, WUA accountability, importance of payment for water, and feedback loops to regulator/oversight.

A.2 Ecosystem restoration and climate resilient livelihoods for food and nutrition security

The objective of this component is to support sustainable and diversified community livelihoods, improve food and nutrition security, and enhance climate resilience through the development and management of climate-resilient water infrastructure and resources and the protection, restoration and better management of natural ecosystems.

The component will address rangeland degradation, low investment in restoration, and challenges in governance and coordination. Restoration and sustainable management will adopt a catchment approach, guided by community priorities and detailed assessments. Integrated water and land management will enhance water infiltration, soil moisture retention, and aquifer recharge through in-situ and stormwater harvesting.

Key restoration interventions will include assisted natural regeneration, rangeland reseeding, fodder planting, soil and water conservation structures, Farmer Managed Natural Regeneration (FMNR), and managing invasive species. Improved coordination strengthened inclusive rangeland management committees where vulnerable groups including women and minorities are well represented, and grazing management plans will be developed to support restoration efforts.

Restoration will also be linked to nature-based enterprises such as fodder production, grass seed banking, beekeeping, and sustainable gums and resin production to ensure sustainability by providing climate-resilient livelihood options by prioritizing LNOB and other vulnerable groups in the community. These efforts will increase ecosystem species richness and productivity while improving soil fertility, water regulation, and resilience to climate shocks like floods and droughts.

The component will further enhance the resilience and economic stability of communities especially for women and other vulnerable groups by promoting sustainable, climate-resilient livelihood strategies, improving water access, supporting climate-smart agriculture, and fostering nature-based enterprises for livelihood diversification and ecosystem restoration. Additionally, it aims to enhance children, adolescents and women access to and utilization of nutritious and diversified diets for optimal growth and development by creating optimal food access and healthy practices.

Overview of Outputs and Activities

Output 2.1: Prioritized rangeland resources including land are brought under restoration, safeguarded and sustainably managed for improved climate change resilience

Using a multi-sectoral and multi-stakeholder approach, this output will focus on working with communities to identify and map out degraded areas, design and implement ecosystem restoration interventions that contribute to larger landscape level restoration and rehabilitation.

- **Activity 2.1.1**: Conduct participatory detailed assessments of land and water ecosystems to determine degradation levels, determine restoration opportunities and design restoration plans
- **Activity 2.1.2**: Implementation of ecosystem restoration through structural interventions including earthworks for soil and water conservation, erosion control structures, access control structures. The interventions will include but will not be limited to checkdams, gabions, terraces, bunds, ripraps, stonelines, grazing corridors these structures will reduce runnoff, increase water infiltration and imporve soil moisture.
- **Activity 2.1.3:** Implementation of ecosystem restoration through biological interventions including but not limited to: shelterbelts, pasture reseeding units/ grass seedbanks, enclosures for managed natural regeneration, vetiver hedge grows for soil reinforcement, bio-swales and contour grass strips. These infrastrucutre will support with slope stabilization, soil anchoring and hydrological regulation.
- **Activity 2.1.4:** Formation and strengthening of inclusive relevant natural resource management groups such Rangeland management Committees (RMCs) and Water Resources Users; Associations (WRUAs) for improved rangeland and watershed management and governance for sustainability with proper representation of women, minorities and other LNOB groups
- **Activity 2.1.5**: Pollution control and sustainable land use – promoting sustainable agricultural practices, promoting integrated pest management, developing and enforcing guidelines to prevent encroachment and unsustainable practices
- **Activity 2.1.6**: Implement land and water ecosystem protection strategies, including small-scale flood control measures and implement nature-based approaches such as safeguarding riverbanks. Retaining and gabion walls, riparian buffer strips, vegetated terraces and reforestation of catchments as appropriate are the range of structural and non-structural interventions to be implemented.

Output 2.2: Community-validated climate resilient water infrastructure developed and or rehabilitated for food security.

This output will focus on enhancing water availability and access to address the challenges of water scarcity, erratic rainfall, prolonged droughts and impoverishment of livelihoods. Emphasis will be on stormwater/floodwater harvesting, storage and distribution for irrigation. Further, the strengthening of water infrastructure management systems and frameworks will improve the adaptive capacity of the target vulnerable communities, support livelihoods mainly for women and youth and build climate resilience.

- **Activity 2.2.1**: Conduct multi-stakeholder (national, county and community level) mapping and consultation for the development and/or rehabilitation of water infrastructure for productive use (including water pans).
- **Activity 2.2.2**: Development and/or rehabilitation of community-validated climate resilient and sustainable water infrastructure including stormwater harvesting and storage for irrigation. Efficient irrigation technologies that optimize water use to deliver more yields per unit of water used and that employ renewable energy for pumping.
- **Activity 2.2.3**: Formation and strengthening of inclusive water management community groups with poper representation of women, minorities and other LNOB groups for improved water management, including training of Irrigation Water Users' Associations on irrigation system management, on-farm water management and environmental issues in irrigation development and operation.

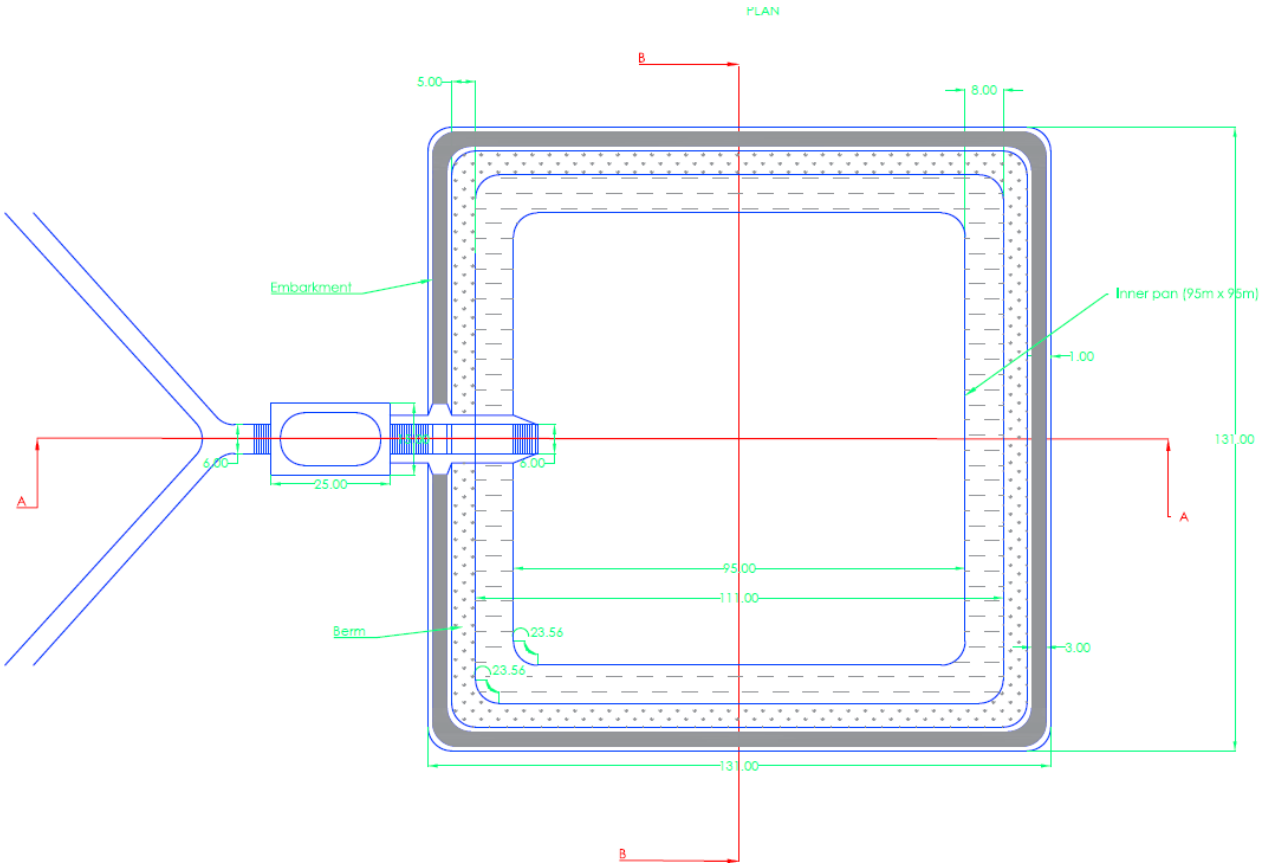


Figure 11: Water pan technical drawing (top view)

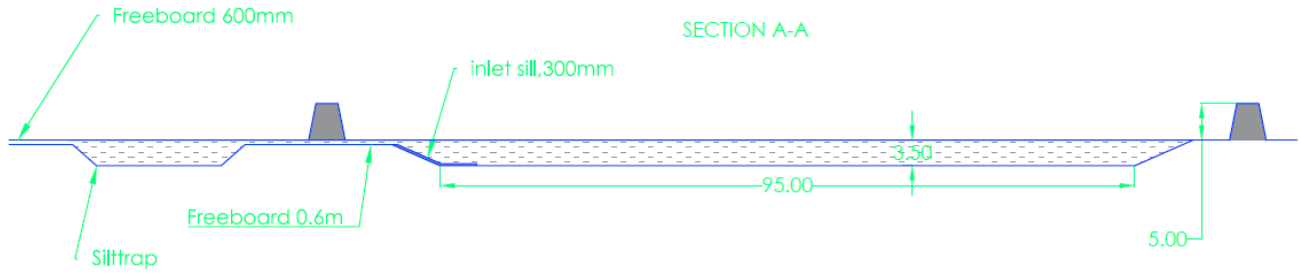


Figure 12: Water pan technical drawing (side view)

Output 2.3: Climate-smart agriculture and nature-based enterprises promoted through inclusive value chains for climate resilient livelihoods

This output prioritizes investments in climate-resilient livelihoods focusing on women and youth including promoting climate-smart practices tailored to the ASALs, utilization of sustainable indigenous knowledge related to cultivating nutritious and drought-tolerant crops, in addition to supporting generation of alternative income opportunities from nature-based enterprises linked to the Outcome on building ecosystem resilience. The interventions will also build the skills and knowledge of men, women and youth in targeted households and communities within the Climate Resilient Food Systems Hubs and will also leverage access to timely climate information.

- **Activity 2.3.1**: Capacity strengthening to promote cultivation of nutrition-sensitive and drought-tolerant/climate adapted crops and livestock targeting smallholder farmers.

- **Activity 2.3.2**: Capacity strengthening of smallholder farmers to transition to climate-smart practices such as crop rotation, conservation tillage, cover cropping, agroforestry to enhance productivity of croplands.
- **Activity 2.3.3**: Support development of nature-based enterprises run by women and youth such as beekeeping, fodder production, grass seed production and gums and resins and provide targeted support such as private sector and market linkages.
- **Activity 2.3.4**: Support vulnerable community groups to access financial inclusion to enhance their social and economic adaptive capacities

Output 2.4: Improved household access to nutritious and diversified diets, contributing to enhanced livelihood resilience .

This output will focus on ensuring that improved climate resilient livelihoods deliver sustainable, nutritious and diversified diets. The focus is on optimizing the livelihoods investments by promoting household consumption of the nutrition-sensitive crops to increase the food and nutrition security of targeted populations. It will emphasize protecting and promoting sustainable diets and practices in the face of predicted adverse impacts of climate change to support optimal growth and development. This intervention brings social gains alongside the proposed economic and environmental benefits. Improved sustainable diverse diets, and the resulting improved health and wellbeing of populations, will make targeted populations more resilient to climate hazards and the longer term climate effects.

- **Activity 2.4.1** integrate climate resilient water access as key pillar of improving nutrition outcome in existing guidelines feeding of young children, food for school age children and maternal nutrition.
- **Activity.2.4.2** Engage with research institutions and local private sector partners to develop and test environmentally friendly low-cost value addition processing of agricultural and livestock outputs into nutrient dense food products.
- **Activity 2.4.3** Capacity strengthening of health facility and community health workers to promote the climate resilient, nutritious livelihood production and to support targeted communities to modify their behaviors, adopting practices that increase their ability to adapt to climate impacts.
- **Activity 2.4.4**: Utilize existing community-based platforms to build awareness and modify behaviours to prioritize household consumption of a portion of the nutrition-and climate-sensitive livelihoods production.
- **Activity 2.4.5**: Capacity building on food storage, processing and meal preparation of introduced nutritious agri-livelihoods in order to build household food and nutrition security for improved climate resilience.

A.3 Enhanced early warning systems and anticipatory action

This outcome focuses on building climate resilience by strengthening early warning systems (EWS) and anticipatory action mechanisms. It includes activities that enhance flood risk assessment, integrate advanced climate risk prediction, and empower communities and institutions with climate services and early action capabilities. Special effort is made to ensure that early warning system speak to the community needs and mechanisms, and integrate traditional knowledge. By leveraging innovative technologies, capacity-building initiatives, and localized approaches, the project aligns with the Adaptation Fund Results Framework to reduce climate vulnerability and improve adaptive capacity.

Output 3.1: Flood EWS accuracy improved by incorporating more data using existing open source flood models

This output strives to integrate Google's existing and free-to-use flood models, both real-time and historic, into county and community early warning systems. Google Flood Hub gives flood warnings up to seven days in advance and indicates different danger levels. It has been used in humanitarian

operations before[36].

- **Activity 3.1.1:** Validate Google Flood hub inundation history maps for target counties with community and county stakeholders
- **Activity 3.1.2** Train county WRA and County KMD on usage of Google Flood Hub EWS and integration in existing communication structures

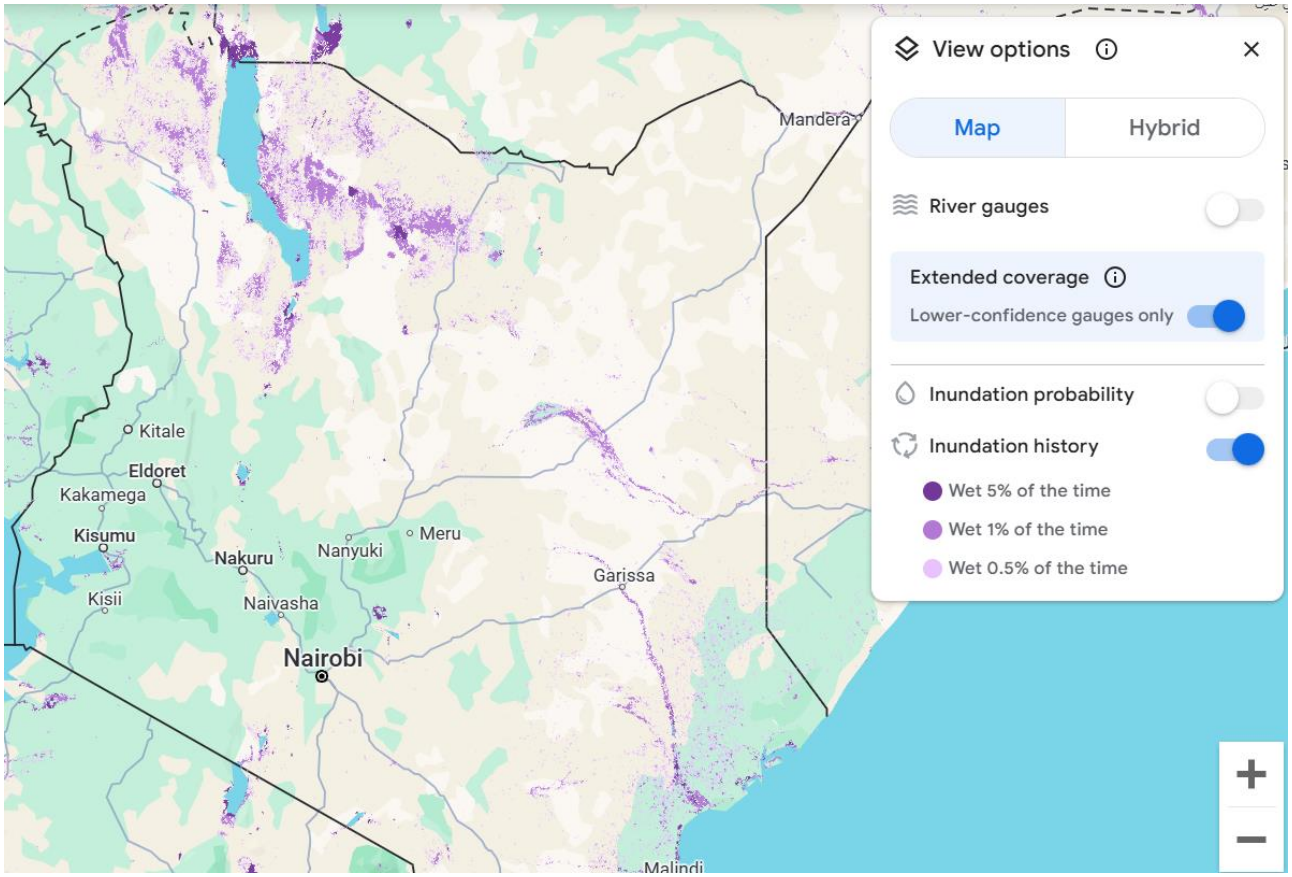


Figure 13: Inundation History from Google Flood Hub

[36] https://blog.google/technology/ai/advanced-flood-hub-features-for-aid-organizations-and-governments/

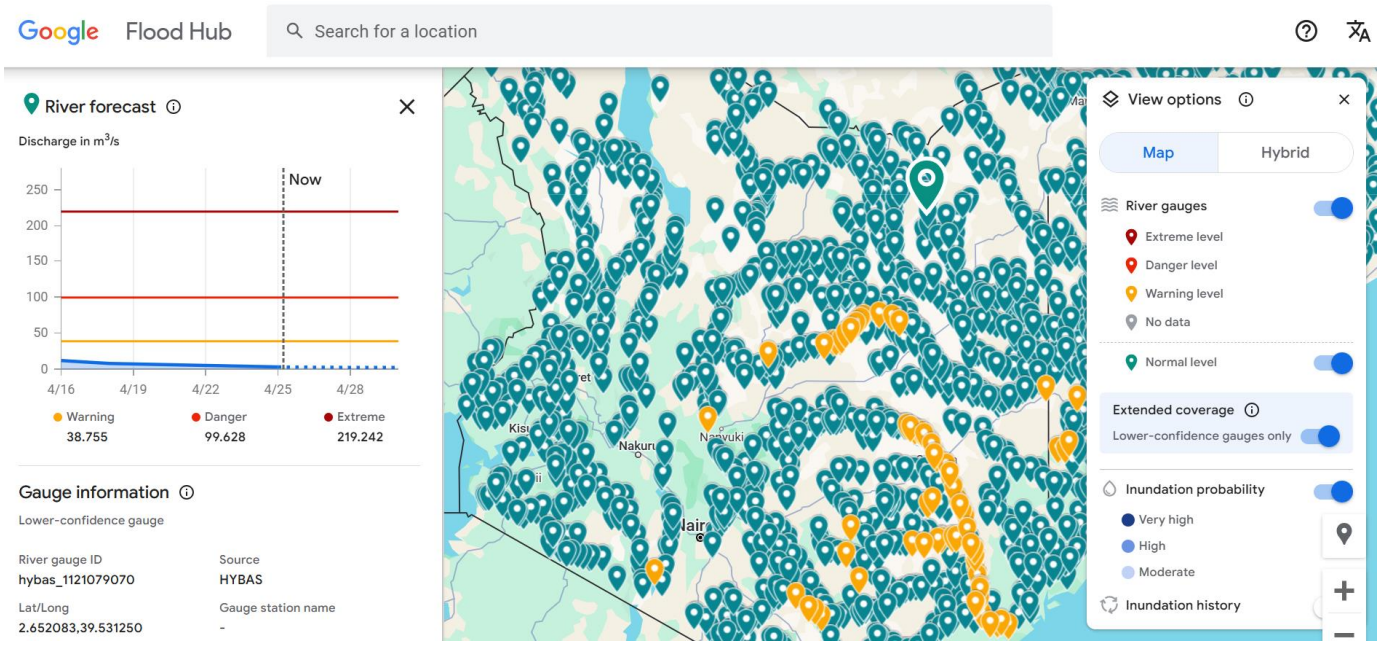


Figure 14: Flood forecast from Google Flood Hub

Output 3.2: Improved Anticipatory Action triggers defined in updated plans, integrating (child) vulnerability in target counties and nationally

This output focuses on improving Anticipatory Action (AA) triggers by integrating child vulnerability index into both national and county-level systems. The AA roadmap emphasizes the need for harmonized trigger development, yet current triggers are often based solely on scientific or meteorological thresholds that may not fully reflect the lived realities and vulnerabilities on the ground—especially those affecting women and children. To address this gap, this output supports the integration of the Children Climate Disaster Risk Model (CCDRM) into Kenya Meteorological Department's seasonal forecasts (Activity 3.2.1), ensuring that child-centered risk factors are considered in early warning systems. Additionally, it supports a review and improvement of AA triggers in county Anticipatory Action Plans, incorporating vulnerability data—such as that regularly collected by the National Drought Management Authority (NDMA)—to ensure that decisions to act are grounded in both meteorological science and social risk realities (Activity 3.2.2). This approach enhances the precision and relevance of early actions, ensuring they are timely and targeted to those most at risk.

- **Activity 3.2.1** Integrate the Children Climate Disaster Risk Model (CCDRM) into the national seasonal forecasts issued by Kenya Meteorological Department
- **Activity 3.2.2** Review and improve triggers and thresholds for AA in county Anticipatory Action Plans and integrate (child) vulnerability data

Output 3.3: County budgeting process for Anticipatory Action strengthened

Output 3.3 aims to strengthen the county budgeting process for Anticipatory Action (AA), recognizing that early action is only effective if counties allocate their own resources to support it. Currently, AA implementation in Kenya is heavily reliant on development partner funding, which raises concerns about sustainability and government ownership. Without dedicated county budget lines, even the best-designed AA plans risk remain unimplemented when disaster strikes. This output will support counties in meeting the national guideline of allocating at least 2% of their development budgets to disaster risk management and anticipatory action (Activity 3.3.1), while also improving transparency and reporting. UNICEF brings a strong track record in supporting

county budgeting processes, positioning it well to assist counties in institutionalizing AA within their public finance systems for long-term impact.

- **Activity 3.3.1** Assist counties in allocating and reporting a minimum of 2% of the development budget to DRM/AA

Output 3.4: Early Warning Communication systems improved to effectively reach last-mile communities

Output 3.4 focuses on improving Early Warning Systems (EWS) to effectively reach and resonate with last-mile communities, recognizing that the value of early warnings lies not only in their accuracy but also in community trust and understanding. In many areas, traditional forecasting practices—such as interpreting goat intestines—still hold more sway than scientific predictions, and even one inaccurate forecast can cause communities to lose faith in formal EWS altogether. There is a critical need to help communities understand that while scientific predictions are based on the best available data, they are not infallible—uncertainty is part of any forecasting system. This output uses a human-centered design (HCD) approach to understand local beliefs, behaviors, and trust dynamics around early warnings (Activity 3.4.1), and will develop culturally relevant and localized social and behavior change (SBC) materials to improve communication through radio, Community Health Promotors (CHPs), and other familiar platforms (Activity 3.4.2). By training CHPs, radio stations, and community mobilizers to communicate not just the warnings but also the science behind them and the importance of acting despite uncertainty (Activities 3.4.3 and 3.4.4), this output aims to foster a more realistic, informed, and resilient relationship between communities and early warning information.

- **Activity 3.4.1** Conduct community HCD immersion session on EWS to understand local EW uptake and understanding
- **Activity 3.4.2** Develop contextualized SBC Early Warning communication materials for radio, Community Health Promotors (CHPs) and other platforms in local languages
- **Activity 3.4.3** Train radio stations and CHPs on translation and communication of timely early warnings of flooding to community
- **Activity 3.4.4** Train community health promotors and workforce and community social mobilizers on early warning communication and utilization/AA

A.4 System strengthening for enhanced climate adaptation coordination

This component focuses on improving institutional coordination, technical capacity, and knowledge-sharing mechanisms to support climate adaptation in the water sector and beyond.

Output 4.1: Enhanced capacity of the Ministry of Water and County Climate Units in targeted 4 Counties for inclusive and participatory climate adaptation planning and coordination in the water sector.

This output enhances coordination and builds technical capacity for water sector professionals and stakeholders to address vulnerabilities and risks effectively.

- **Activity 4.1.1**: Provide technical capacity building for water sector professionals and stakeholders to enhance climate adaptation coordination.
- **Activity 4.1.2**: Strengthen the capacity of County Climate Change Units (CCUs) in targeted counties for effective coordination of water sector activities.

Output 4.2: National Adaptation Plan (NAP) updated through an inclusive and participatory process incorporating feedback from key stakeholders, including women, youth and 4 target County Representatives

This output will support the update of the National Adaptation Plan (NAP). Kenya's current NAP runs from 2015-2030 and is therefore coming to an end. It is therefore necessary to update the NAP, taking into account the latest climatic data and predictions and gained knowledge on climate adaptation.

- **Activity 4.2.1** Update Kenya's National Adaptation Plan
- **Activity 4.2.2** Conduct consultation workshops including women and youth group consultations to inform NAP

Output 4.3: Increased capacity of youth in targeted 4 counties to meaningfully participate in climate adaptation governance and action

This output empowers youth to play a critical role in climate adaptation efforts by equipping them with the skills and support needed to develop and implement impactful projects, this has already been successfully done for two regions in Kenya under leadership of the MECCF. It also supports young people to participate in land restoration activities, as a part of UNICEFs global GreenRising initiative.

- **Activity 4.3.1**: Train youth on developing bankable climate change project proposals to engage them in climate action initiatives.
- **Activity 4.3.2** Engage 2,000 young people in UNICEFs GreenRising through land restoration of 200 ha

Output 4.4: A functional and regularly updated climate change adaptation knowledge platform established and used by the Ministries, County Climate Units, Youth, and other stakeholders in targeted 4 counties

Output 4.4 aims to establish a functional and regularly updated climate change and adaptation knowledge platform that empowers Ministries, County Climate Units (CCUs), youth, and other stakeholders in targeted 4 counties to make informed, timely, and inclusive decisions. This decentralized system bridges national policy with local action by structuring and standardizing climate data, enhancing accessibility through tools like HackMD, Power BI, and SMS/USSD dashboards, and capturing local and indigenous knowledge through participatory approaches. It also strengthens visibility and voice for youth, women, and marginalized groups through storytelling and co-authored county briefs. The platform supports national planning cycles such as NCCAP III, the NAP, and NDCs by providing real-time, structured evidence for reporting and adaptation strategy refinement. With robust feedback loops, capacity building, and policy integration, this system ensures that knowledge generation is continuous, locally owned, and actionable at every level.

- **Activity 4.4.1**: Information Collection & Structuring Training (1 physical, 2 virtual sessions)

- **Activity 4.4.2**: Template and Taxonomy Development
- **Activity 4.4.3:** Use of Online Software (HackMD, Power BI, system support)
- **Activity 4.4.4:** Story Dissemination & Communication Training including production of human-interest stories, filed notes, case studies, press releases and other knowledge and communication products
- **Activity 4.**4.**5:** Centralized KM Management (QA, dashboard integration, oversight)

A.5 Climate resilient Waste management for water quality

This outcome focuses on the strengthening of sustainable waste management practices to enhance climate resilience through mitigating the impacts of flooding and drought on water systems. Proper waste management reduces water contamination risks during floods, which can introduce pollutants into water sources, and during droughts, which exacerbate water scarcity and concentrate existing pollutants. By establishing climate-resilient waste management infrastructure, promoting circular economy practices, and strengthening water quality monitoring systems, this outcome ensures that communities and ecosystems are better equipped to adapt to the impacts of climate change. These interventions align with climate adaptation goals to protect water resources, enhance water quality, and ensure sustainable resource management under changing climatic conditions.

Output 5.1: Enhanced technical capacity of relevant institutions in targeted ENRB Counties for water quality monitoring and enforcement related to waste management.

This output focuses on strengthening institutional capacity for pollution monitoring and sustainable waste management, particularly in the context of climate-related events such as floods. Flooding significantly increases the risk of contamination in domestic water sources due to surface runoff, highlighting the need for rapid, field-based water quality assessments. To address this, NEMA staff will undergo a 5-day training and be equipped with portable water quality monitoring kits to enhance real-time pollution surveillance during emergencies. Additionally, a training module on sustainable waste management and compliance with the Sustainable Waste Management Act will be developed, forming the basis for a 2-day training targeting county government staff, waste handlers, CBOs, and contractors. Together, these activities aim to build a more responsive and compliant environmental management system capable of reducing pollution risks and improving public health outcomes.

- **Activity 5.1.1:** Strengthen institutional capacity to monitor pollution levels in domestic water sources, especially during flood events when surface runoff can introduce contaminants into water systems.
- **Activity 5.1.2:** Procure portable water quality monitoring kits
- **Activity 5.**1.3: Develop training module on sustainable waste management and compliance with the sustainable waste management act
- **Activity 5.1.4:** Train government staff and waste handlers (County govt, CBO, contractors) sustainable waste management and compliance with the sustainable waste management act

Output 5.2: Increased access to climate-resilient waste management infrastructure

This output focuses on increasing access to climate-resilient waste management infrastructure in Marsabit Town, where unmanaged waste frequently blocks drainage channels, worsening the impact of floods and posing a serious threat to water quality. During heavy rains, solid waste washed into open drains and waterways contributes to urban flooding and the contamination of domestic water sources, while in dry periods, poor waste disposal exacerbates health risks. To address this,

the project will establish Material Recovery Facilities (MRFs) to foster circular waste management and reduce the volume of waste reaching drainage systems. In addition, a climate-resilient waste management site will be developed in compliance with all 10 criteria of the Sustainable Waste Management Act, including secure fencing, leachate and fire control systems, controlled tipping, and proper licensing. This infrastructure will improve waste handling, protect vital water systems, and serve as a replicable model for resilient urban waste management in arid regions.

- **Activity 5.2.1:** Establish Material Recovery Facilities (MRFs) to foster circularity in waste management, reducing waste that could clog drainage systems during floods and worsen flood impacts.
- **Activity 5.2.2:** Develop climate resilient waste management site adhering to all 10 criteria of the sustainable waste management act.

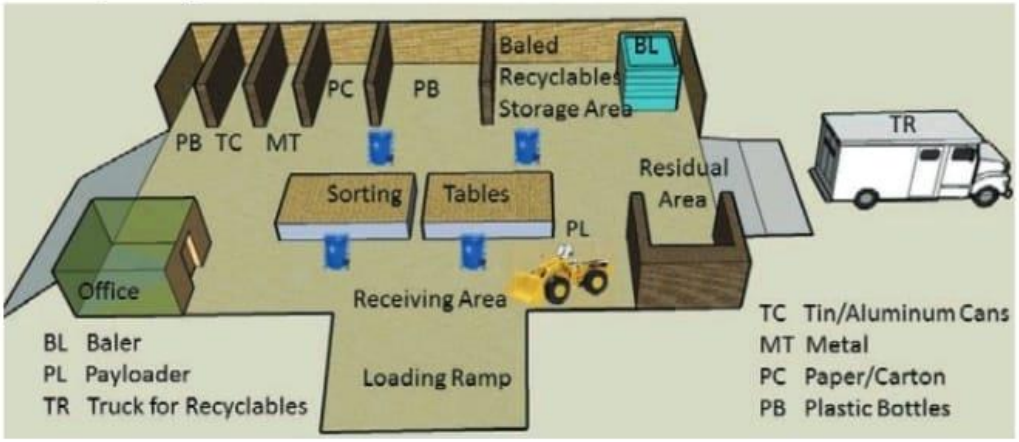


Diagram of Manual MRF

Figure 15: Diagram of Material Recovery Facility (MRF)

Output 5.3: Improved knowledge and adoption of safe and climate-resilient waste management practices and the importance of water quality monitoring within communities and institutions

Output 5.3 focuses on improving knowledge and encouraging the adoption of safe, climate-resilient waste management practices in 150 villages, empowering communities to better manage waste and safeguard water resources. By raising awareness on the critical link between waste disposal and water quality, the project will promote behaviors that mitigate the impacts of floods and droughts on water systems. Through community education campaigns, residents will be taught the importance of waste segregation at source, recycling, and reuse, while also understanding how improper waste management exacerbates flooding and worsens water scarcity during droughts. This effort will build local adaptive capacity, reduce environmental pollution, and improve community resilience to climate impacts.

- **Activity 5.3.1:** Conduct community education campaigns on the importance of waste segregation at source, recycling, and reuse, emphasizing how improper waste disposal worsens flooding and reduces water availability during droughts.

Output 5.4: County Environment Committees Revamped to Address Waste-Related Pollution

Output 5.4 aims to revamp and strengthen County Environment Committees in Marsabit and Wajir to play a more active and informed role in tackling waste-related water pollution, which poses a growing risk during both floods and droughts. In these counties, limited waste oversight has contributed to clogged drainage systems, contaminated water sources, and heightened vulnerability

during climate shocks. Through targeted capacity building, the committees will be better equipped to identify sources of pollution, enforce relevant regulations, and coordinate actions to mitigate flood-induced contamination and protect scarce water resources during drought periods. By reinforcing local environmental governance, this output ensures that waste management challenges are addressed more proactively, with community-driven solutions aligned to climate resilience and water safety goals.

- **Activity 5.4.1:** Strengthen the capacity of County Environment Committees including enhancing representation of women, youth and other vulnerable groups to identify and address waste-related water pollution, focusing on mitigating flood-induced contamination and safeguarding water resources during droughts.

B. Program economic, social and environmental benefits

The proposed project offers an integrated package of climate adaptation interventions tailored for communities in Kenya's arid and semi-arid lands (ASALs), prioritizing economic efficiency, social inclusion, environmental sustainability, and gender responsiveness.

In alignment with the Adaptation Fund's 15 Environmental and Social Policy (ESP) principles and Kenya's National Environmental and Social Safeguards Policy, all project components and outputs were systematically screened for potential environmental and social risks. This process was carried out through extensive stakeholder consultations and on ground assessments. Following this, a comprehensive Environmental and Social Impact Assessment (ESIA) was conducted (see Section II.K), which informed the project's risk categorization and a detailed mapping of compliance across all 15 ESP principles (see Section II.E). The findings directly informed the development of a context-specific Environmental and Social Management Plan (ESMP) (Annex 3).

Overall, Project AWARE demonstrates strong coherence with the Adaptation Fund's ESP framework. All proposed activities—including climate-resilient water systems, rangeland management, groundwater recharge through nature based solutions, and sustainable waste infrastructure—integrate key safeguards on environmental integrity, human rights, and social equity. The project explicitly embeds core ESP principles such as access and equity, gender equality, protection of natural habitats, pollution prevention, and public health. Potential risks—such as those related to proper waste management—have been identified and are being addressed through inclusive planning and robust screening tools.

As detailed further in Section II.H, the proposal was shaped through a participatory, multi-level consultation process involving stakeholders at both national and county levels. Community-level engagements—particularly with women and marginalized groups—were intentionally designed to ensure safe spaces for open dialogue. These consultations have ensured that the project is responsive to both national and sub-national priorities, while directly reflecting the needs, knowledge, and aspirations of vulnerable populations, especially women.

Detailed number of beneficiaries and economic benefits per output are described in Annex 9 and summarized below.

B.1 Economic benefits

It is known that improved water supply and sanitation and water resources management boosts countries' economic growth and contributes greatly to poverty reduction. A Stockholm

International Water Institute (SIWI) report[37] shows that among the world's poor countries, those with access to improved water and sanitation services experience greater economic growth. Poor countries with improved access to clean water and sanitation services enjoyed annual average growth of 3.7%. Poor countries with the same per capita income but without improved access had an average annual per capita GDP growth of only 0.1%. The report further outlines how economic benefits from investments in the WASH sector range from 3 – 34 USD per 1 dollar invested. Part of this is manifested through the time people (usually women and children) spend on water collection. By increasing water access, collection time will be reduced, saving time for other economic activities and schooling and thus increasing disposable income.

Investing in ecosystem restoration in the rangelands and farmlands generates various immediate and economic benefits, making it a cost-effective strategy to enhance agricultural productivity, improve rural livelihoods and reduce risks. According to IFAD[38], estimates show that each 1 USD invested in restoration generates up to USD 30 in economic returns. Additionally, enhancing healthy soils has the potential to offset between 5 to 20% of global emissions while boosting food security. Specifically, healthy ecosystems reduce vulnerability to droughts, floods and other climate-related disruptions, ensuring stable food production and increased availability of forage and fodder results in healthier and productive livestock. Resilient ecosystems buffer against extreme weather events, reducing the economic burden of recovery efforts and enhance the capacity of water assets/infrastructure to attain their intended investment outcomes.

Diversified income streams through nature-based enterprises such as fodder, gums and resins, grass seed, among others present opportunities for communities to improve their livelihoods. Deliberate targeting for women and youth will be key in ensuring that these groups are prioritized for the interventions and support through this proposed project.

Well-coordinated anticipatory action (AA) has been shown to deliver significant economic benefits by reducing disaster-related losses before they occur. According to global evidence, every $1 invested in anticipatory action can yield between $3 and $15 in avoided disaster losses, depending on the hazard, context, and the timeliness of the intervention[39]. These savings stem from reduced emergency response costs, lower damage to infrastructure and livelihoods, and faster recovery times. By acting before predictable hazards like droughts or floods strike—such as by pre-positioning resources, securing water supplies, or supporting at-risk households—AA not only protects lives and assets but also strengthens long-term resilience, particularly for vulnerable groups like women, children, and persons with disabilities. The cost-effectiveness of AA makes it a compelling strategy for climate adaptation and disaster risk reduction, especially in fragile and hazard-prone regions such as Kenya's arid and semi-arid lands.

B.2 Social benefits

Improved access to water in North Eastern Kenya brings significant social benefits, transforming the well-being of communities in the region. First, it enhances health outcomes by reducing waterborne diseases such as cholera and dysentery, which are prevalent in water-

[37] Stockholm International Water Institute (SIWI). (2005). *Making water a part of economic development: The economic benefits of improved water management and services*. Stockholm International Water Institute. Retrieved from https://siwi.org/wp-content/uploads/2015/03/csd_making_water_part_of_economic_development_2005-3.pdf

[38] https://www.ifad.org/en/w/news/cop16-with-investment-small-scale-farmers-can-restore-lands-and-deliver-significant-food-security-climate-and-economic-benefits#:~:text=Estimates%20show%20that%20the%20benefits,emissions%20while%20boosting%20food%20security

[39] Kenya National Technical Working Group on Anticipatory Action. (2024). Kenya Anticipatory Action Roadmap 2024 - 2029. Nairobi. https://www.icpac.net/documents/923/Kenya-Anticipatory-Action-Roadmap-2024-to-2029.pdf

scarce areas[40]. Access to clean water also promotes better hygiene practices, helping communities maintain sanitation and reduce the spread of disease. Economic empowerment is another key benefit, as the time saved from water collection can be redirected towards income-generating activities, leading to financial independence and better livelihoods for women and children.

Furthermore, access to water supports local economies by improving livestock health and enabling small-scale irrigation, which is essential for agricultural activities in the region. Socially, the reduction in time spent collecting water empowers women and girls, providing opportunities for education and participation in decision-making processes, contributing to gender equality. Moreover, reliable water access promotes social cohesion and reduces conflicts over scarce resources, fostering collaboration within communities. Finally, better water infrastructure boosts resilience to climate change by helping communities withstand periods of drought and climate shocks, ensuring sustainable livelihoods and fostering long-term stability. The overall quality of life improves, particularly for vulnerable groups, and allows communities to preserve their cultural practices and way of life.

Beyond these immediate benefits, improved water access plays a crucial role in strengthening climate-resilient livelihoods. By securing reliable water sources, communities can sustain food and nutrition security through climate adaptation strategies, such as diversifying food production and improving dietary practices. Complementary interventions—including capacity building on food storage, processing, and meal preparation—help households maximize the nutritional benefits of locally produced food. Social and behavior change activities further reinforce these efforts by encouraging households to prioritize the consumption of nutrition-sensitive crops, reducing reliance on unhealthy or insufficient food purchases.

By integrating water access with climate adaptation strategies, this initiative enhances resilience to climate shocks, particularly for vulnerable groups such as women and children. It supports long-term improvements in health, nutrition, and economic stability, ensuring that communities are better equipped to withstand droughts and other environmental challenges. Ultimately, these efforts contribute to a more sustainable and self-sufficient future, where access to water is a foundation for improved well-being and strengthened social structures.

B.3 Environmental benefits

To ensure environmental sustainability and prevent groundwater sources from getting depleted, this program will invest in strengthening groundwater monitoring. The investments in sub-catchment management plans (SCMPs) will also ensure sustainable (ground)water management.

Restoring arable and pastureland is critical to food security; thus, transforming food systems from a primary cause of degradation into a solution for ecosystem recovery. Sustainable agricultural practices such as diversified cropping, regenerative farming and integrated pest management can enhance soil health, improve water retention and increase carbon sequestration. These practices will enhance the resilience of ecosystems, enabling them to support the communities highly dependent on them as a source of livelihood.

Increased vegetation cover in the rangelands will reduce soil erosion and enhance rangeland health. Restored ecosystems also improve the natural water cycle, replenishing aquifers and promoting sustainable land management.

[40] World Health Organization: WHO. (2023, September 13). Drinking-water. https://www.who.int/news-room/fact-sheets/detail/drinking-water

B.4 Vulnerability and Beneficiaries Analysis

Figure 15 illustrates the cyclical nature of droughts and floods in Kenya, with severe events occurring approximately every two years and affecting millions of people. As outlined in Section I.A, these climate hazards are projected to intensify in frequency and severity under future climate change scenarios. A summary of the key climate risks and underlying vulnerabilities in the project's target areas is provided in Annex 8.

Figure 16 includes a series of risk maps generated from Kenya's Children's Climate and Disaster Risk Model. These maps highlight the high levels of vulnerability in the target counties—Marsabit, Wajir, Mandera, and Garissa:

- The left map shows that all four counties fall within the highest composite risk category for climate and other hazards.
- The middle map highlights that three of the four counties rank in the highest category of child vulnerability, indicating that critical systems—such as water supply, nutrition, and health—are fragile and ill-equipped to withstand climate shocks.
- The right map confirms that these counties also face extreme water scarcity, further compounding their vulnerability.

These data-driven insights confirm that the project is focused on the most climate-vulnerable populations, particularly children and women, in regions where exposure to hazards intersects with deep systemic weaknesses.

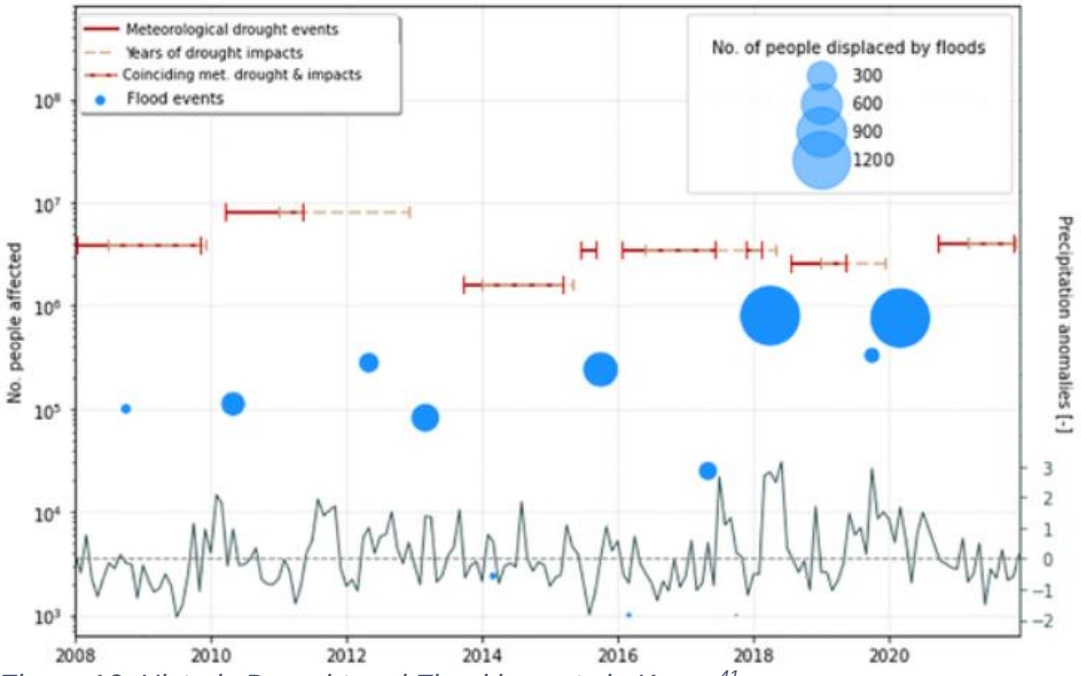
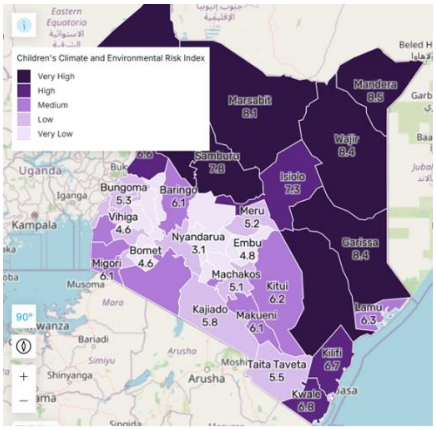
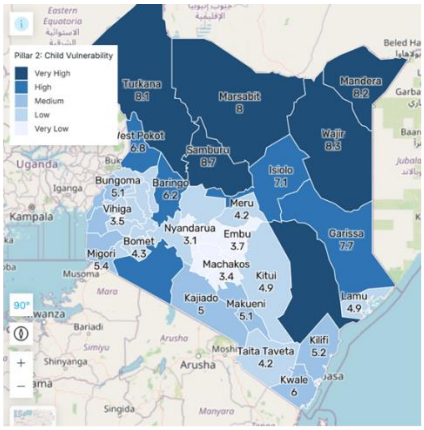


Figure 16: Historic Drought and Flood impacts in Kenya[41]

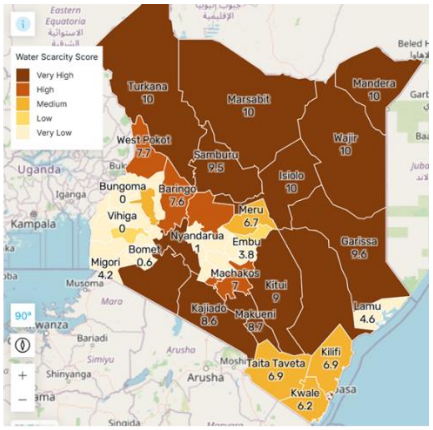
[41] Caught Between Extremes: Understanding Human-Water Interactions During Drought-To-Flood Events in the Horn of Africa - Scientific Figure on ResearchGate. Available from: https://www.researchgate.net/figure/Drought-and-flood-events-and-impact-timeline-for-Kenya-a-and-Ethiopia-b-The-time_fig2_363239374 [accessed 24 Apr 2025]



Composite risk index per county in Kenya



Composite child vulnerability in Kenya per county



Exposure to water scarcity in Kenya per county

Figure 17: Composite risk indices from CCDRM

C. Cost effectiveness

The proposed project is designed to be both cost-effective and sustainable. By leveraging existing infrastructure and frameworks established by the government and UN agencies, the project minimizes the need for new administrative and operational structures, ensuring that implementation costs are kept low. Additionally, the project will require minimal extra staffing, primarily focused on enhancing the capacity of current staff through targeted training, which further reduces operational costs.

Investing in climate adaptation, particularly in improving water access, livelihoods, and early warning systems, has been proven to be cost-effective over time. For instance, improving water infrastructure such as rainwater harvesting systems, boreholes, and groundwater management helps mitigate the impact of droughts and floods. This reduces the need for expensive emergency relief and reconstruction efforts following climate events. The integration of early warning systems (EWS) will also allow communities to anticipate and prepare for climate shocks, thereby minimizing the economic impact of these events. Reports by international organizations such as the World Bank indicate that investing in water infrastructure significantly lowers long-term costs compared to emergency responses, as it fosters greater resilience against climate change-induced water scarcity[42].

Further, the proposed approach will also systematically address root causes of gendered vulnerabilities and inequalities that contribute to communities not being able to achieve optimal use of natural resources in a sustainable and resilient manner.

C.1 Comparison with Alternative Options

To demonstrate cost effectiveness of the infrastructure interventions the project evaluated multiple options feasible in the target areas and identified the most cost effective and technically feasible options. Table 4 contains an analysis of different options for water systems in the target counties, and related reach and costs.

[42] World Bank Group. (2023, November 17). Climate Action Key to Kenya's Upper-Middle-Income Country Aspirations. World Bank. https://www.worldbank.org/en/news/press-release/2023/11/17/climate-action-key-to-kenya-s-afe-1123-upper-middle-income-country-aspirations

The decision to focus on boreholes and sand dams in this project was based on a combination of cost-effectiveness, long-term sustainability, and feasibility and suitability in the local context. Compared to other water supply options like reverse osmosis (RO) systems and water trucking, boreholes and sand dams offer a much more reliable and affordable solution for rural and semi-arid communities.

Boreholes, especially those powered by solar pumps, have a moderate capital cost at 75,000 USD Their annual operation and maintenance (O&M) costs are relatively low—between $500 and $1,500—and they can serve approximately 2,000 people. With a lifespan of 10 to 20 years, boreholes are a practical and resilient option, particularly in areas with accessible groundwater. The use of solar power also reduces dependency on fossil fuels and lowers running costs, making boreholes more sustainable over time.

The project will also identify locations for strategic boreholes for multi village schemes, connecting multiple villages in a radius of 3-5 km. With an average cost of 200,000 USD, the multi-village water schemes can reach an average of 6,000 people with safe water, bringing a good cost/beneficiary ratio.

Sand dams, on the other hand, are even more cost-effective. With a capital cost of $40,000 and extremely low annual O&M costs of just $250 to $500, sand dams provide water at a cost of just $0.1 to $0.5 per cubic meter—far cheaper than other systems. They also have a long lifespan of 20 to 30 years and support approximately 1,000 people per dam. Sand dams not only supply water but also recharge groundwater, improve soil moisture, and help restore local ecosystems, making them a highly climate-resilient solution. Their construction and maintenance can also be managed by local communities, increasing ownership and long-term sustainability. Sand dams will be preferred options in locations where borehole water have high salinity, availability of seasonal rivers, availability of sand and feasibility of the location to anchor the sand dam in the bed rock in a reasonable depth

In contrast, reverse osmosis (RO) systems are significantly more expensive and technically complex. They require a high initial investment—typically $150,000 to $200,000—and annual O&M costs can reach $20,000 to $50,000. The cost of water production ranges between $1.00 and $3.00 per cubic meter, which is 20 to 100 times higher than sand dams. RO systems also have shorter lifespans (7 to 15 years) and are less suitable for community-based management due to the technical expertise required for maintenance. Furthermore, RO systems produce a large volume of brine—a highly concentrated waste stream that must be carefully managed. If not handled properly, this waste can contaminate soil and water sources, creating additional environmental concerns.

Water trucking, which is the main water supply method for the target villages during the dry seasons is also not a viable long-term solution. While it requires lower capital investment, the cost per cubic meter is extremely high—between $10 and $50—and the approach is logistically complex and only suitable for short-term emergency response. It is not scalable or sustainable for providing daily household water needs. Besides, the trucks are usually diesel powered and emit significant amounts of greenhouse gases.

Ultimately, the project prioritized boreholes, multi-village water schemes, and sand dams because they provide a reliable, cost-effective, and community-driven solutions that aligns with climate resilience goals. They ensure that large numbers of people can access safe water over the long term without incurring the financial and environmental costs associated with RO systems or water trucking.

Table 4: Cost comparison between different interventions considered for component 1

Water System	Capital Cost (USD)	Estimated O&M Cost (USD/year)	Cost per m^3 (USD)	Number of Beneficiaries	Lifespan (Years)
New Borehole (solar-powered pump)	$75,000	$500 – $1,500	$0.50 – $1.50	2,000	10 – 20
Sand Dam	$40,000	$250 – $500	$0.1 – $0.5	1,000	20 – 30
Multi village water schemes	$200,000	$1,000-$3,000	$0.50 – $2.00	6,000	15-25 years
Water Trucking	N/A (operational only)	$10 – $50 per m^3	$10 – $50	Variable (emergency use)	N/A
Reverse Osmosis (Medium Commercial, large scale)	$150.000 - $200,000[43]	$20,000 – $50,000	$1.00 – $3.00	1,000 – 5,000	7 – 15

Under **Component 2**, the project's approach offers a strategy, focusing on an integrated approach for long-term community empowerment, food security, enhanced land productivity and economic development. The project appreciates the interconnectedness of livelihoods in the ASALs where most inhabitants combine livestock keeping, crop production and trade, and as such, taking this into consideration contributes to building the communities' resilience to climate change related shocks. An integrated approach presents the opportunity to reach a larger beneficiary base, achieve sustained impact and enhance scalability of interventions.

The purpose is to provide a basis for growth to address root causes and build the resilience of communities and natural ecosystems to climate variability and other shocks. With the primary goal of strengthening the resilience and sustainability of food systems in the ASALs, the project thus is focusing on empowering vulnerable communities including agro-pastoralists and pastoralists.

Enhanced access to reliable water as a factor of production, improved land productivity, and increased access to markets, through stronger value chains (including nature-based enterprises), linkages with the private sector and improved access to finance, will increase the opportunities for livelihood

[43] As per quote received from Davis and Shirtliff Kenya

adaptation, will raise incomes and asset ownership amongst pastoralist and agro-pastoralist communities, and will enable and sustain ecosystem restoration activities. Restoration of rangeland landscapes will increase overall productivity and reduce climate risks by improving the overall supply of fodder, water and other critical productive inputs. The outcomes will include increased food and water security and greater income security.

C.2. The Cost of Inaction

The cost of inaction on climate resilience and water scarcity in Kenya especially in the ASAL regions is profound, particularly in light of the severe economic and social impacts of the recent droughts and floods. The drought from 2020 to 2022 was the worst in four decades, affecting over 4.2 million people and resulting in the death of approximately 2.5 million livestock[44]. This situation contributed to widespread food insecurity, with around 3.5 million people facing crisis or emergency levels of food scarcity.

In addition to drought impacts, flooding has exacerbated the humanitarian crisis. In early 2024, heavy rains resulted in catastrophic flooding that affected over 238,763 households, displacing more than 117,336 households and causing at least 478 fatalities. The floods destroyed approximately 92,256 acres of farmland and led to significant infrastructure damage, including the destruction of roads and water sources[45]. This compounded the challenges faced by communities already struggling from the effects of prolonged droughts, as many were still recovering from previous losses when the floods struck.

The recurring nature of these climate-related disasters creates long-term fiscal liabilities. Overall, Kenya's updated Nationally Determined Contribution (NDC) (2020) estimates that between 2010 and 2020, adverse climate change-related events led to annual socioeconomic losses of 3–5 percent of total gross domestic product (GDP). Without addressing water scarcity and enhancing climate resilience through proactive investments, Kenya will remain trapped in a cycle of vulnerability marked by repeated humanitarian crises, escalating poverty rates, and significant economic losses that undermine national recovery efforts and long-term sustainability.

Furthermore, Kenya loses about 6.9% of GDP due to hunger and undernutrition[46], with malnutrition contributing 24% to child poverty. Despite this, counties allocate only 0.9% of their budgets to interventions that address nutrition security. This proposal aims to integrate climate, food and nutrition interventions, implement anticipatory mechanisms, and promote sustained behaviour change, contributing for the reduction of the USD 38.3 billion predicted lifetime losses to the Kenyan GDP due to undernutrition.[47]

[44] Kenya 2022 Drought Response in Review - Kenya. (2023, February 23). ReliefWeb. https://reliefweb.int/report/kenya/kenya-2022-drought-response-review

[45] Kenya | Floods - 6 month Operation Update (31/10/2024) - Kenya. (2024, October 31). ReliefWeb. https://reliefweb.int/report/kenya/kenya-floods-6-month-operation-update-mdrke058-31102024

[46] GoK. COHA (2019). *Social and economic impact of child undernutrition in Kenya*. https://www.nutritionhealth.or.ke/wp-content/uploads/COHA_Infographics/COHA%20-%20Kenya%20Report%20-%20November%202019.pdf

[47] Atieno, S. (2019, May 3). *Science Africa*. Retrieved March 7, 2025, from https://news.scienceafrica.co.ke/nutrition-kenya-needs-to-increase-investment/

C.3 Sustainability

The sustainability of the project is ensured through a multifaceted approach that integrates appropriate technology, capacity building, community engagement, and institutional strengthening. By enhancing the technical and financial management capacities of water resource management institutions, the project ensures that professionals are equipped with the necessary skills for sustainable groundwater development and management. Additionally, the establishment of small-scale water providers and regulated utilities to operate and maintain infrastructure further supports long-term sustainability. The project also emphasizes socio-economic assessments to inform tariff structures, ensuring affordability and pro-poor approaches, which are crucial for the continued viability of water services. Furthermore, the alignment with ongoing government and UN programs focused on climate adaptation and disaster risk reduction ensures efficient resource utilization and avoids duplicating efforts.

Moreover, the project promotes climate-resilient livelihoods by restoring and managing rangeland resources, developing climate-smart agriculture, and improving household access to nutritious diets. Community-led initiatives, such as the formation of Rangeland Management Committees and farmer-to-farmer extension networks, foster local ownership and long-term stewardship of resources. Enhanced early warning systems and anticipatory action plans, integrated into county budgeting processes, ensure that communities are better prepared for climate-related risks. By focusing on enhancing water access, livelihoods, and early warning systems, the project fosters long-term climate resilience while reducing reliance on continuous external support. The establishment of a functional climate change knowledge platform and the strengthening of organizational capacities for waste management further contribute to the project's sustainability. For more detailed information, please refer to Annex 14, which includes a comprehensive table outlining the specific sustainability interventions and outputs.

D. Project alignment with national or sub-national sustainable development strategies

The project directly contributes to Kenya Vision 2030 aims to transform Kenya into a newly industrializing, middle-income country providing a high quality of life to all its citizens by 2030 in a clean and secure environment. The implementation of the Kenya Vision 2030 happens through Medium Term Plans (MTPs). The **MTPIV 2023-2027**, mentions drought and climate change as the top two challenges for its implementation[48]. The 5 pillars of the MTPIV (Agriculture, Micro Small and Medium Enterprise Economy; Housing and Settlement; Healthcare; and Digital Superhighway and Creative Economy), all rely strongly on the reliable availability of water access. Investments proposed in this project will directly contribute to MTPIV by providing climate resilient, professionally managed water systems by prioritizing community engagement and ensuring the meaningful participation of women and youth.

Access to water at community level will also further advance the 2022-2027 **Bottom-up Economic Transformation Agenda (BETA).** Here, the Sector has been identified as a key BETA enabler. The key objectives are to intensify the provision of water infrastructure by strengthening of community structures in the participatory management of freshwater, coastal and marine resources and ecosystems and to enhance resilience, mitigation and adaptation to climate change[49]. As regards water for livelihoods, the focus on sustainable crop and livestock

[48] The National Treasury and Economic Planning State Department for Economic Planning, KEY HIGHLIGHTS OF THE FOURTH MEDIUM TERMPLAN (MTP IV) 2023 – 2027 Highlights of MTP-IV

[49]Parliamentary Budget Office, Masinde, M., Nyaga, R., & Makara, L. (2023). Budget Watch for FY 2023/24 and the medium term: Operationalizing the Bottom-up Economic Transformation Agenda. In Budget Watch for FY 2023/24

production and adoption of solar-powered irrigation infrastructure supports the BETA's key enablers, such as environment and climate change and aligns with the agriculture and food security pillar which is a key priority sector.

National Water and Sanitation Investment program (NAWASIP) Framework 2023 – 2030 developed in 2022 with available budget of USD 4.9 Billion and financing gap of USD6 Billion, NAWASIP has national targets to reach 100% water coverage in both urban and rural areas, 40% sewerage coverage, 60% non-sewered urban sanitation and 100% of reasonable sanitation in the rural areas by 2030 through four result areas of urban water supply, rural water supply, urban sanitation and rural sanitation. The proposed project will directly contribute to urban and rural water supply and urban sanitation result areas through planned interventions under component 1 and 5.

National Irrigation Sector Investment Plan (NISIP) launched in March 2025 provides a strategic blueprint for Government and private investments in the form of five complementary development pathways including expanded farmer-led irrigation development, high performing public schemes, enabled corporate agribusiness, revitalized irrigation in ASALs and maximized community scheme benefits. The proposed project will directly contribute to revitalized irrigation in ASALs and maximized community scheme benefits by supporting food and fodder production in vulnerable pastoralist communities and enhancing community-based irrigation.

Kenya's National Adaptation Plan (NAP, 2015-2030) has made water and sanitation one of its priorities. The proposed project will directly contribute for the below sub actions of the NAP:

- Enhance capacity of institutions and bodies responsible for water and sanitation on climate change impacts and the water sector.
- Promote awareness on climate change impacts and the water sector including promoting public awareness on water conservation (recycling, wastewater management) and efficient water use.
- Mainstream disaster risk reduction measures in the water sector planning and service delivery, particularly in vulnerable, high risk regions.
- Promote the use of efficient irrigation systems.
- Enhance collaboration of trans boundary water resource management.
- Strengthen water resource monitoring and assessment for early warning and planning.
- Promote technologies that enhance water resource efficiency.

National Climate Change Action Plan (NCCAP, 2023-2027), acknowledging the uniquely vulnerable role of Leaving-No-One-Behind (LNOB) groups to the effects of climate change including effects on water, NCCAP has made youth and children one of its eight priority actions. The proposed project directly aligns to NCCAP Priority 1 (DRM), Priority 2 (Food & Nutrition Security), Priority 3 (Water, Fisheries, and the Blue Economy) and Priority 5 (Health, Sanitation and Human Settlements)

The proposed project also aligns with the **African Union (AU) agenda 2063**, which emphasizes that Africa shall have equitable and sustainable use and management of water resources for socio-economic development, regional cooperation, and the environment.

The proposed project is well-aligned with the **Kenya Climate Smart Agriculture Strategy and Implementation Framework (2017)** which has four objectives; enhance adaptive capacity and resilience of farmers, pastoralists and fisher-folk to advance impacts of climate change,

and the Medium Term (No. 16) [Report]. Parliamentary Budget Office. http://www.parliament.go.ke/sites/default/files/2023-09/Budget%20Watch%202023_0.pdf (p. 28)

develop mechanisms that minimize greenhouse gas emissions from agricultural production systems and create an enabling regulatory and institution framework and address cross-cutting issues that affect climate smart agricultural production.

Furthermore, to enhance future disaster response, urgent legislative and infrastructural improvements are advocated, including the passage of the **National Disaster Management Bill.** The project aims to develop and disseminate risk maps to define the floodplains, and the risks associated with having any type of activity within their geographical extent for the communities and to help local and national governmental agencies to prepare legislation and plans that ensure that these locations are not inhabited.

The Government of Kenya sessional paper No 01 of 2021 on national water policy promotes an inclusive and integrated approach to the management of water resources by ensuring measures are put in place for water resources management planning; water quality management; catchment protection and conservation; the development and application of appropriate technology; and the monitoring and information systems as well as to promote sustainable utilization of water resources. The national water policy has also developed a policy statement and policy directions on mainstreaming climate change and gender equality. The national water and sanitation services strategy 2019–2030 has clearly assessed climate risks and identified clear strategies for mitigation and adaptation including adoption of green technologies such as solar, wind, biogas and geothermal as well improving efficiency to contribute to the reduction of negative climate change effects by 2025. The national water services regulatory board has developed guidelines for utilities and county water departments for disaster prevention and management such as the disaster management plan which is a requirement for licensing of utilities.

E. Project compliance with relevant national technical standards

Project AWARE (Adaptation for Water Access and Resilience in the Ewaso Nyiro River Basin) has been designed to fully comply with relevant national technical regulations and environmental laws, as well as the Environmental and Social Policy (ESP) of the Adaptation Fund.

A comprehensive environmental and social screening process has been completed in line with national requirements and the Adaptation Fund's ESP. Based on this process, activities have been categorized according to potential risk, and appropriate mitigation and monitoring measures are being integrated into project design.

E.1 Compliance with National Technical Standards

- **Environmental Management and Coordination Act (EMCA, 1999, Cap 387):** The project aligns with the provisions of EMCA, which provides the legal framework for environmental protection and sustainable resource use in Kenya. All activities with potential environmental or social impacts, such as water infrastructure and land restoration, are subject to screening under this Act.
- **Environmental (Impact Assessment and Audit) Regulations, 2003 (Revised 2019):** The project follows these regulations for the categorization of activities and the development of Environmental and Social Management Plans (ESMPs) for all interventions deemed Category A or B. These ESMPs guide mitigation measures, institutional responsibilities, and environmental monitoring.
- **Water Act, 2016:** All project activities related to groundwater abstraction, recharge,

and water infrastructure development comply with the Water Act. This ensures legal water use, sustainable aquifer management, and equitable access in accordance with national water governance standards.

- **Water Harvesting and Storage Regulations (2021):** The design and implementation of managed aquifer recharge (MAR) systems, shallow wells, water pans, and other storage infrastructure are in line with these regulations, supporting safe, regulated, and climate-resilient water access.
- **National Climate Change Action Plan (NCCAP 2023–2027):** The project contributes directly to NCCAP objectives under water resource management, disaster risk reduction, and climate-resilient livelihoods, aligning with Kenya's Nationally Determined Contributions (NDCs) and broader national climate resilience agenda.

E.2 Alignment with the Adaptation Fund Environmental and Social Policy (ESP)

The project is fully compliant with the Adaptation Fund's ESP, including:

- **Risk Screening and Categorization:** All activities have been screened for environmental and social risks in accordance with the ESP's 15 principles. Where necessary, ESMPs have been developed to ensure that identified risks are managed responsibly.
- **Gender Equality and Social Inclusion:** The project applies a gender-responsive approach, ensuring that women, youth, and marginalized groups are actively engaged in planning, decision-making, and benefit-sharing. Special attention is given to water access, time burdens, and livelihood diversification for women.
- **Stakeholder Engagement and FPIC:** Meaningful consultations have been conducted with local communities and stakeholders, respecting Free, Prior, and Informed Consent (FPIC) principles, especially in areas with Indigenous communities.
- **Grievance Redress Mechanism (GRM):** A multi-level GRM has been developed to allow communities and stakeholders to raise concerns during implementation. The GRM will be accessible, culturally appropriate, and gender-sensitive.
- **Environmental and Social Management Measures:** ESMPs and other safeguard tools have been developed for relevant activities to ensure continued compliance with both national regulations and the Adaptation Fund's ESP. These will be monitored throughout implementation.

F. Project complementarity to existing similar projects

The AWARE project, will complement the below initiatives by expanding the reach to more beneficiaries and taking forward best practices and lessons learned:

Horn of Africa Groundwater for Resilience (Hoagw4r) Program - The Ministry of Water, Sanitation and Irrigation is implementing the Horn of Africa Groundwater for Resilience (Hoagw4r) Program. This program's objective is to increase sustainable access and management of groundwater in the Horn of Africa borderlands (Wajir, Garissa, Turkana, Marsabit and Mandera Counties). Through the Program, 400 boreholes will be drilled and/ or rehabilitated with the associated distribution networks, 50 exploratory wells, Managed Aquifer Recharge and restoration of Groundwater Catchment Areas and capacity building of Water Resources Users Associations (WRUAs).

Kenya Water, Sanitation and Hygiene Programme (K-WASH) – The World Bank Funded K-WASH programme support the Government's objective under NAWASIP to accelerate the

achievement of universal access to safe water supply and improved sanitation services in Kenya's 47 counties by 2030 in an affordable, equitable, and sustainable manner to address the dual challenge of increasing and sustaining access to improved rural water services and rural sanitation challenges, improving the governance, accountability, operational efficiency, and financial performance of WSPs, and improve coordination, and strengthen sector monitoring and reporting to ensure that sustainable rural WSS are provided.

The Financing Locally-Led Climate Action (FLLoCA) program, supported by the Government of Kenya and the World Bank, focuses on empowering local communities to implement climate resilience projects, including water-related initiatives. In northeastern Kenya, FLLoCA has facilitated the rehabilitation of boreholes, installation of solar-powered water systems, and development of water harvesting and distribution infrastructure. These projects aim to enhance water access and management, thereby improving livelihoods and food security in the region[50].

More Water More Life initiative – UNICEF is currently implementing a sustainable groundwater innovation project dubbed "More Water More Life initiative" in the Arid and Semi-Arid Land (ASAL) counties of Turkana, Samburu, Marsabit, Mandera, Wajir and Garissa counties to build resilience of communities to droughts and floods that are exacerbated by the effects of climate change by applying a combination of technical-scientific desk study methods and field validation for mapping underground water resources which enables accessing the far-flung areas that were hard to reach using the conventional survey methods to increase the drilling success rate and consequently enhance sustainable and climate-resilient water services serving multiple villages in water scarce locations.

Strengthen Community Resilience in Turkana County through Improved Water Management- This KOICA funded, and UNICEF implemented WASH programme started in 2019 and will continue to 2027. The project includes construction of solar powered water supply facilities, sand dams and sanitation and hygiene interventions for communities and institutions. The AWARE program will further benefit from the successes and lessons learned from this project in a climatically similar setting.

Climate Resilient Food Systems (CRFS) - The programme will further complement and scale up ongoing interventions especially within the Climate Resilient Food Systems (CRFS) Programme under implementation by WFP and related to strengthening the resilience of communities within the ASALs. The CRFS Programme is being implemented in 10 ASAL counties (Samburu, Isiolo, Wajir, Marsabit, Garissa, Tana River, Mandera, Makueni, Baringo and Turkana), targeting 885,000 beneficiaries (51% of whom will be women), over a 4-year period. The implementation is based on a hub model which is an area-based approach consisting of a well-defined geographic area or network within a county where to layer, integrate and sequence climate-resilient investments in terms of integrated water solutions, ecosystem restoration, climate risk management, anticipatory actions, alternative livelihood options, climate-smart agro-pastoral and pastoral practices, value chain and market opportunities while nutrition and gender actions are key crosscutting consideration during implementation. In fragile areas such as the ASALs, the hubs aim at optimizing investments and maximizing results and impacts to progressively build community and ecosystem resilience.

[50] Financing Locally Led Climate Action (FLLOCA) program: Multi-Sectoral team conducts feasibility study and community engagement. (n.d.). County Government of Mandera. https://mandera.go.ke/financing-locally-led-climate-action-flloca-program-multi-sectoral-team-conducts-feasibility-study-and-community-engagement/

Furthermore, the project will benefit from the results and the related experiences and lessons learned from UNESCO past activities in assessing the 2024 Nairobi floods and in piloting the CDI (Capacitive De-Ionization) technology in Naivasha for groundwater desalination as well those of the project “Enhancing Flood Resilience in Kenya”, which is under implementation at the lower Tana river basin.

A detailed analysis of the mentioned projects and project AWAREs complementarity can be found in Annex 10.

G. Learning and knowledge management

The Government of Kenya will lead the knowledge management (KM) function for climate adaptation, leveraging existing structures to ensure effective coordination and dissemination. Through the AWARE project, KM will be strengthened to ensure timely, structured, and accessible climate information reaches policymakers, local communities, and key actors at national and county levels. All knowledge products developed under AWARE will be made publicly available through national and global platforms, enabling replication of successful interventions across climate-affected regions of Kenya. Below are the Key learning and KM activities planned by the project:

Kenya Climate Change Knowledge Portal (KCCKP)
Led by the Climate Change Directorate (CCD), KCCKP serves as Kenya’s central climate knowledge hub. However, operational capacity constraints have limited its full utilization. AWARE will support CCD through:

- Technical Assistance: Enhancing portal functionality and integrating structured data.
- Capacity Building: Training CCD staff in knowledge management practices and digital tools.
- Stakeholder Engagement: Facilitating partnerships to improve data quality and flow from diverse actors.

Collaboration with the Maarifa Centre The Maarifa Centre, hosted by the Council of Governors (CoG), facilitates county-level knowledge exchange. AWARE will reinforce this by:

- Content Integration: Aligning adaptation content with county governance priorities.
- Capacity Strengthening: Training county officers in climate resilience knowledge management.
- Data Sharing: Supporting interoperability with national systems and enhancing county reporting quality.

Partnership with UNESCO’s IHP-WINS
Kenya’s water and climate data landscape remains fragmented across institutions. AWARE will support integration with UNESCO’s IHP-WINS platform, which will serve as a centralized repository for water-related data. Key contributions include:

- Data Aggregation: Integrating datasets on groundwater, floods, and climate impacts.
- Visualization Tools: Offering interactive maps and dashboards for analysis and communication.
- Collaborative Knowledge Sharing: Ensuring open access for researchers, policy actors, and communities.

Expanded KM Activities Under AWARE
To operationalize the above platforms and commitments, AWARE will implement the following cross-cutting KM modules:

1. Information Collection & Structuring Training: Three annual training cycles will equip

County Climate Change Units (CCUs), youth mentors, and stakeholders with standardized data collection skills using tools like KoBoToolbox and HackMD. These trainings will also cover interpretation and post-training mentorship to ensure local knowledge is effectively captured and structured.

2. Template and Taxonomy Development: A one-time co-design process will produce harmonized templates and data taxonomies for consistent climate reporting across counties. This includes expert consultation, county validation workshops, and translation into accessible, user-friendly formats, all aligned with HackMD structures.
3. Use of Online Software: The project will cover annual licensing, hosting, and technical support costs for digital tools including HackMD, Power BI, RapidPro, and KoBoToolbox. These tools will enable real-time collaboration, automated data flows, and low-bandwidth accessibility for mobile users.
4. Story Dissemination and Communication Training: AWARE will promote narrative-based knowledge sharing by training CCUs and youth on how to develop and disseminate local adaptation stories in multimedia formats. Outputs—ranging from radio spots to WhatsApp micro-videos—will strengthen local engagement and cross-county learning.
5. Centralized KM Management: The project will support the quality assurance, version control, and structured publication of county-sourced content. Cleaned and standardized data will feed into dashboards, mobile alerts, and web platforms, ensuring actionable insights are available to diverse users across Kenya.

The full knowledge management plan is in Annex 11

H. Consultative process

The consultative process, involving high-level leadership from ministries, UNICEF, development partners, UN agencies, and Relevant County Government departments, was held at both the national and sub-national levels. It engaged key stakeholders in water and climate change initiatives across various sectors. Community consultations were also conducted in all 4 target counties in carefully selected locations to ensure diversified geographic and demographic coverage of the consultations including covering the views of minorities, vulnerable groups, women and youth.

At the National level, the main goals were to validate objectives, gather feedback, and explore collaboration opportunities. Key objectives included co-creating the Theory of Change and Integrated Results Framework to align with existing and pipeline government and development partner's programmes and projects and avoid duplication of efforts, establishing governance structures, and aligning climate finance streams. The process also aimed to define agency roles for the Adaptation Fund proposal, present the concept to NEMA and MoWSI for feedback, and discuss budget alignment with environmental priorities. Additionally, bilateral meetings were held to explore government support and partnerships, while the AF Proposal was introduced to WATSAN DPG members.

At the County level, the main objectives of the consultations were to discuss relevance of proposed project components, identify priority areas and get technical input for the proposed interventions. The consultations were held both physically and virtually, with teams from UNICEF, WFP, and NEMA participating actively. Stakeholders identified key challenges, such as inadequate water infrastructure, delays in early warning systems, and limited resources for disaster response. They recommended solutions such as solar-powered water systems, nature-based solutions, and better coordination for disaster management. Emphasis was placed on the need for community involvement, particularly in youth and women's participation in climate action. The consultations also highlighted the importance of strengthening local

capacity in climate adaptation and water management, improving coordination among stakeholders, and ensuring that interventions are sustainable and inclusive. The proposed interventions align with the county's existing climate change strategies and will be anchored in existing structures, such as the County Climate Change Committees and Ward-level climate planning committees. The feedback from these consultations helped to ensure that the project meets the needs of the communities and is feasible for successful implementation.

Community consultations were held in seventeen communities across the targeted areas in the four counties to inform the design of the proposed interventions. These consultations were conducted with the aim of understanding communities' experiences with water access, the effects of climate change, and local resource management practices. Additionally, they provided a platform to gather feedback on the proposed interventions, identify community-driven priorities, and validate the challenges already documented, while ensuring that the solutions remain inclusive, sustainable, and community-owned.

The process engaged a wide spectrum of community members, including elders, women, youth, persons with disabilities, community health volunteers, representatives from minority groups, representatives from local water user committees, climate change and land committees, and village administrators. Separate sessions were also held specifically for women and youth, creating a safe space for these often-underrepresented groups to speak candidly about their unique needs and vulnerabilities. This approach enabled a more deeper understanding of the differentiated impacts of water scarcity and climate change. It also helped identify ways in which women could be more meaningfully involved in the implementation and governance of water-related interventions. In regions experiencing high levels of migration—such as areas along the Liboi-Somalia border and parts of Wajir—internally displaced persons (IDPs) were also consulted, contributing their perspectives on cross-border water conflict, displacement, and seasonal movement.

The discussions surfaced several key concerns. Communities consistently expressed that water insecurity remains a pressing issue, particularly during the dry season. Many depend on a single water source—often a water pan or borehole—that is frequently overstretched by the demands of both human and livestock use. Diminishing water volumes, rising salinity levels, and aging or broken infrastructure were commonly cited problems. In these forums, women spoke strongly in favor of being actively involved in the planning and management of water points, as well as in income-generating activities like farming. Youth also demonstrated enthusiasm for taking part in managing water kiosks and adopting climate-smart agriculture initiatives.

Importantly, several communities proposed alternative or additional interventions not initially included as interventions in their area. These included the construction of sand dams, the protection and rehabilitation of dry riverbeds (laggas), and the fencing of water pans to protect them from overuse and contamination. In response, the proposal was adaptively revised to incorporate these suggestions. Requests for solarizing boreholes, separating water access points for people and livestock, and improving fencing around existing infrastructure were also prominently featured in the feedback.

Ultimately, the consultations affirmed the relevance of the planned activities while also offering critical insights that enriched the proposal.

The detailed community and stakeholder consultations are described in Annex 12.

I. Justification for funding

Table 5: Justification for funding

Project/Programme Components	Baseline (without project)	Adaptation impact with project)	Evidence base
1. Climate-resilient Water Access for Human and livestock Consumption	Water access in the ENRB is generally low and a large part of the population rely on surface water, which dry up seasonally and even more during worsening droughts people are either dependent on water trucking or displace to other locations. This is mainly due to poor sustainable infrastructure development and limited institutional capacity in the target areas. Floods also severely impact water access, destroying infrastructure and contaminating water sources, leading to cholera and other water borne diseases.	Through investments in groundwater resource assessment, institutional strengthening, Nature based water ground water recharge and retention and infrastructure development for sustainable and flood-resilient water access, communities in the target 4 counties will have reliable, year-round access to improved water sources — even during climate shocks. A strong focus on building government capacity will ensure the long-term sustainability of these improvements.	Existing UNICEF and government projects in target locations and other locations with similar environment including in Turkana and Samburu have proven to create enhanced resilience of communities in ASAL counties due to deep groundwater access and construction of sand dams. This is a common practice in many drought prone countries and often the most feasible cost-effective solution.
2. Ecosystem restoration and climate resilient livelihoods for food and nutrition security	The middle and lower parts of the Ewaso Nyiro basin are mostly ASALs and given their fragile nature can only support a low-density pastoralism and agro-pastoralism. Overgrazing, unsustainable land use practices, water use conflicts between crop farmers and pastoralists and encroachment on riparian land are key challenges faced in the basin. These result in a decline in land health and productivity. As rangeland and cropland productivity decline, resulting in low yields, the communities experience food insecurity and significant economic strain. Limited financial resources restrict investment in	Integrated approaches that address water availability, ecosystem restoration by the project will enhance agricultural productivity for food and nutrition security. Further, supporting food production and establishment of nature-based enterprises that are primarily led by women and youth presents opportunity for livelihood improvement for these population groups while contributing to building the resilience of ecosystems.	Every USD invested in restoration can generate upto USD 30 in economic benefits. Further, climate smart agricultural practices such as agroforestry, cover cropping and crop diversification can provide food security and enhance soil health for sustained land productivity.

	sustainable land management practices, accelerating further.		
3. Enhanced early warning systems and anticipatory action	Kenya is experiencing a cycle of droughts followed by flooding events, that result to avoidable high losses and damages in the region. Climate Change has a documented effect on changing the rainfall patterns both in a spatial and temporal manner. Information on climate services (rainfall) does not reach the communities on the ground in a context sensitive way. There are no Early Warning Systems in place to provide Government and communities alike with enough time to minimize the effects of the weather extremes, especially floods. Furthermore, there is no capacity to understand, anticipate, plan for and respond effectively to future drought and floods events. Therefore, the vicious cycle of extreme weather events followed by heavy losses of lives and livelihoods and damages to property, potential harvests and income will continue to exist.	With investments in understanding and assessing the risk from floods and droughts; in establishing EWS and in capacitating decision makers and technical staff and in raising the awareness of the communities; and in providing them with tools to understand, plan, anticipate and respond to heavy rainfalls and long droughts, the vicious cycle will be broken and the resilience of both the communities and government to climate change effects will be enhanced	EWS have been utilized extensively in Southern African countries resulting in reducing the vulnerability of the communities and enhancing their resilience.
4. Systems strengthening for enhanced and inclusive climate adaptation coordination and knowledge management	Kenya's climate adaptation efforts face challenges due to weak coordination across sectors, limited county-level capacity, and incomplete vulnerability assessments. Fragmented initiatives undermine effectiveness. Youth and women are underrepresented in governance. The National Adaptation Plan (NAP) is outdated and not aligned to the 2025 NDCs. Knowledge management systems are underdeveloped.	Enhanced coordination and technical capacity in the water sector and strengthened County Climate Change Units (CCUs) will improve localized adaptation efforts. Updating the National Adaptation Plan (NAP) with current climate data will ensure that policies address emerging risks. Youth training and mentorship will foster innovative climate action, while an	Evidence from Kenya's County Climate Change Fund (CCCF) shows that strong county institutions improve adaptation outcomes. UNFCCC findings confirm updated NAPs better align with NDCs. Youth programs like the Africa Youth Climate Hub show trained youth drive innovation. Knowledge platforms

		improved CCD Knowledge Platform will enhance knowledge-sharing and evidence-based decision-making. These efforts will lead to more effective, inclusive, and well-coordinated climate adaptation in Kenya.	globally improve coordination and decision-making.
5. Waste management	Major urban centers within the Ewaso Nyiro Water Basin are facing increasing microbial and chemical contamination due to inadequate waste management and related infrastructure. If unaddressed, this will drive up water treatment costs and increase mortality among vulnerable populations.	Enhanced water quality monitoring, investment in appropriate waste management infrastructure, strengthened public awareness, and institutional capacity-building will significantly improve resilience in the domestic water sector.	Studies in Kenya (e.g., Water Services Regulatory Board reports) show that water quality monitoring and better waste management reduce contamination levels and treatment costs. WHO evidence links improved WASH infrastructure to lower disease burden and mortality. Institutional strengthening consistently correlates with more sustainable water management outcomes.

J. Sustainability of the project outcomes

The sustainability strategy of the project relies on four elements: a) ensuring government/community ownership and stakeholder engagement; b) create capable institutions and critical mass of experts; c) Using appropriate technologies and understanding the environmental factors; d) dissemination and uptake of the products. The sustainability strategy for each output is described in Annex 14

Ensuring Government/Community ownership and Stakeholder Engagement

The project recognizes that sustainability of water supply services depends on government at national and local level commitment and accountability to consumers on the availability and quality of services provided. To foster accountability, the project anticipates investments in policy, legislation, institutional and co-ordination structures, and technical capacity to anchor the accountability of service performance. Understanding of the socio-economic conditions of communities is vital to the sustainability of project interventions. The project involving local communities in planning and decision-making processes from the outset including ensuring the involvement of women and youth, making sure their needs related to project activities are understood and that they are able to meaningfully participate in the project activities. All relevant stakeholders have been engaged, and preliminary discussions have already taken place. Across the four target counties, consultations have been held

with 17 communities, ensuring that the voices of local beneficiaries are actively integrated (See Section II.H). All intended beneficiaries of the project outputs including government entities, private sector actors, communities, and small-scale farmers have demonstrated a clear understanding of the project objectives and expressed strong willingness to contribute in every possible way. They have already started supporting the project by identifying potential sources of data, information, and other relevant inputs. It is envisioned that through continued consultations, including dedicated inception and closing meetings, beneficiaries will remain closely involved throughout project implementation. The project has also outlined clear roles and responsibilities of the Government and other partners that promotes accountability, prevents duplication of effort, and ensures that resources are used effectively to deliver the set targets.

Institutional and Human Resource Capacity building and awareness raising

The results of the project will be rendered sustainable through the capacity building components, which includes engagement on institutional and human resource capacity, and service improvements, focusing on improving service providers capacity to operate and maintain water points. This includes technical and managerial capacity, where the governmental officials (who will be involved in all processes) will acquire skills in data identification, collection and analysis, development and operation of the various tools developed. Furthermore, the project will deliver community customized information using innovative, context specific tools, in local languages that will offer an interactive approach and benefit them. This will increase their buy-in and ownership from the community side and therefore the sustainability of the results.

Technical and Environmental factors

Technical elements of sustainability, mostly related to infrastructure and data availability includes using appropriate locally adaptable technologies, ensuring risk assessments are conducted and structural designs adjusted to adapt to or mitigate these risks. The AWARE project is designed in such a way that up-to-date scientific approaches for ground water suitability maps, geophysical studies conducted for village level or multi-village water infrastructures planned for the project. In addition to ensure sustainability of the project environmental impacts of project activities well established mitigation measures will be implemented throughout project implementation. This includes understanding of the nature of the watershed, seasonal water variability, water quality, water use and options for diversification, opportunity to implement nature-based ground water recharge solutions to improve water quality and quantity available for human and livestock consumption. The project will also enhance water supply efficiency through improving resilience of the infrastructure, addressing Non-Revenue Water (NRW), harnessing smart meter and other technology to optimize supply services, including utilizing green energy solutions. The investments in rangeland and catchment conservation, based on Nature based Solution (NbS) approaches, are expected to enhance ecosystem services thereby protecting and enhancing water sources, reducing pollution and treatment costs.

Access to knowledge management components

To ensure sustainability, the AWARE project will strengthen and embed climate adaptation knowledge management (KM) within existing national and county systems. Led by the Government of Kenya, AWARE will build long-term capacity in institutions like the Kenya Climate Change Knowledge Portal (KCCKP) and the Maarifa Centre by providing technical support, training, and tools for structured data management and open access dissemination. Integration with UNESCO's IHP-WINS platform will further centralize water-related data, enabling continuous collaborative knowledge sharing. Through standardized training, development of harmonized reporting templates, digital infrastructure support, and centralized KM management, AWARE will leave behind durable systems that allow policymakers, communities, and researchers to access and use climate information well beyond the project's lifetime. The project's results will be disseminated through the media outlets of the Agencies involved such as web sites, social media accounts etc., and aforementioned through consultations where local media (both press and social media) will be invited to cover.

K. Environmental and social impacts and risks

A full Environmental and Social Screening has been completed for Project AWARE, in accordance with Kenyan legal requirements and the Adaptation Fund Environmental and Social Policy (ESP). The project aligns with all 15 ESP principles. The table below outlines which principles require no further action and which require additional assessment or mitigation during implementation.

Table 6: Environmental and Social Risks of the project

Checklist of environmental and social principles	No further assessment required for compliance	Potential impacts and risks – further assessment and management required for compliance
Compliance with the Law	The project adheres to all applicable Kenyan laws, including EMCA (1999), Water Act (2016), and Water Harvesting Regulations (2021).	N/A
Access and Equity	The project promotes inclusive access to water and climate adaptation in underserved counties (Wajir, Mandera, Marsabit, Garissa).	Monitoring needed to ensure infrastructure siting does not unintentionally exclude some populations.
Marginalized and Vulnerable Groups	Project activities prioritize pastoralists, women, and children. Design integrates inclusive livelihoods and water access (Output 2.4).	Risks of exclusion if participatory planning is not well implemented.
Human Rights	Supports rights to safe water, climate resilience, and food security through adaptation services.	N/A
Gender Equality and Women's Empowerment	Ensures women's participation in planning and implementation, particularly in Components 1, 2 and 4.	Gender-sensitive indicators and outreach will be needed to track actual participation and benefit sharing.
Core Labour Rights	Labor standards are applied in water infrastructure projects under Component 1,2 and 5.	Construction works may pose safety risks or labor grievances if contractors do not adhere to standards.
Indigenous Peoples	Engages Indigenous communities in climate adaptation planning.	Further engagement and ESMP measures may be required in areas with distinct Indigenous communities.
Involuntary Resettlement	Project avoids displacement and land-use conflicts, especially in rangeland restoration (Output 2.1).	Site-specific screening will be conducted to confirm land tenure and voluntary participation and prevent resettlement.

Protection of Natural Habitats	Uses nature-based solutions like MAR to enhance ecosystems (Output 1.2).	Requires ESIA for MAR sites located near wetlands or fragile ecosystems.
Conservation of Biological Diversity	Promotes rangeland biodiversity through sustainable grazing and reseeding (Output 2.1).	Screening required to avoid activity overlap with ecologically sensitive or protected areas.
Climate Change	Enhances community resilience via early warning systems and flood protection (Component 3).	Infrastructure in flood-prone areas must be designed to withstand extreme events.
Pollution Prevention and Resource Efficiency	Supports county-level waste management and pollution control (Output 5.4).	MRFs and waste sites must be managed to avoid leachate, air pollution, and contamination.
Public Health	Reduces climate-related disease risks through clean water access, enhanced nutrition, and waste management infrastructure (Component 5).	Waste sites and water infrastructure must be designed to avoid contamination and vector breeding.
Physical and Cultural Heritage	Respects Indigenous water knowledge and protects significant water sites. Integrated traditional knowledge in EWS.	Further community consultations needed to confirm there are no inadvertent impacts on heritage resources.
Lands and Soil Conservation	Rangeland interventions improve soil health and reduce erosion (Output 2.1).	Potential short-term erosion during site preparation; managed through ESMPs and local restoration plans.

Building upon the initial Environmental and Social (E&S) screening against the Environmental and Social Policy (ESP) principles and national E&S impact assessment criteria, all project activities have been thoroughly analyzed for potential adverse environmental and social impacts using the standard E&S assessment procedure. As a result, certain activities within Components 1, 2, and 5 have been identified as having adverse but reversible environmental and social impacts and are therefore categorized as 'B'. Some activities under Component 5 on climate resilient waste management, however, have been classified as 'A' due to significant potential impacts. The remaining activities in the proposal have been categorized as 'C', indicating no adverse environmental or social impacts. These activities do not require further management planning in accordance with ESP and national and sub-national environmental regulations.

Annex 3 provides a snapshot of the Environmental and Social Impact Assessment (ESIA) conducted for the project's proposed activities, detailing their potential risks and impact assessment against the 15 principles and national and sub-national environmental regulations. Based on this analysis, an Environmental and Social Management Plan (ESMP) has been developed for the activities in Components 1, 2, and 5 (Category B and A), which is included in Annex 3 as well. The ESMP will guide the implementation of risk mitigation measures throughout the project lifecycle.

PART III: IMPLEMENTATION ARRANGEMENTS

A.1 Project implementation arrangements.

The following mechanisms for project execution, coordination, oversight and transfer of funds have been agreed between the National Designated Authority, the NIE (NEMA), the executing entities (UNICEF and WFP) as well as other key stakeholders at the national and county level.

A.1.1. National Implementing Entity (NIE, NEMA)

Project oversight lies with the national implementing entity, namely Kenya's National Environment Management Authority (NEMA). The NIE will ensure timely delivery, financial compliance, adherence to the gender action plan and the environmental and social safeguard management plan.

NEMA will enter into an Agreement of Cooperation (AoC) with each executing entity (UNICEF and WFP), to execute the activities that will lead to the described outputs. An AoC is a formal legal mechanism that creates accountability, manages fund-flow, and ensures that Executing Entities deliver their activities in accordance with the project budget, workplan, and in compliance with the project's Environmental and Social Management and the Gender Action Plan.

Having unique expertise and a clear legal mandate for waste management in Kenya, the National Environment Management Authority (NEMA) will also serve as an Executing Entity for Component 5. NEMA's extensive experience in regulating, coordinating, and enforcing waste management practices across the country positions it well to lead the implementation of activities under this component. In addition, NEMA has established offices in all four target counties, which will enable efficient coordination, local oversight, and closer engagement with county governments and community stakeholders. Its role will include ensuring compliance with national policies, promoting sustainable waste management solutions, and supporting the development of scalable, locally adapted interventions.

A1.2. Project Management Team (PMT)

The PMT will be comprised of a Project Manager, Finance Officer, M&E Officer, GESI Officer and Communications Officer, all of whom will be appointed in compliance with NEMA's HR rules and regulations. The PMT will also include the Chief of WASH of UNICEF Kenya and the WFP Head of Climate, Resilience and Food Systems The PMT will be led by the Project Manager who will report to the NIE. The PMT will be responsible for managing project activities and ensuring compliance with all commitments contained in the project document, particularly the project's Environmental and Social Management and the Gender Action Plans (which ensures compliance with the 15 principles of the Adaptation Fund Environmental and Social Policy and the Gender Policy of the Adaptation Fund). The PMT will also take the lead in monitoring activities implemented through regular visits to the field sites in the counties of Marsabit, Wajir, Garissa and Mandera.

The PMT's major functions include:

- Strategic planning and budgeting, management, and coordination
- Ensuring smooth implementation of activities and commitments in the Results Framework by Executing Entities
- Monitoring and reviewing delivery against milestones and financial progress
- Consolidating physical/technical and financial progress reports for submission to NIE and the Adaptation Fund Board
- Reviewing and keeping track of portfolio-level risks
- Providing technical support on project results monitoring and safeguards compliance to Executing Entities

- Managing knowledge of the overall project

As representative of the NIE (NEMA) of the Adaptation Fund, the PMT will be involved in periodic monitoring (on-site and off-site) of the project. The periodicity and structure of monitoring are as follows:

- On-site detailed monitoring of field activities will be conducted on a quarterly basis
- Quarterly report submission formats will be designed for submission by Executing Entities for desk appraisal of progress
- Progress reporting will be done to the Adaptation Fund Board (AFB) biannually or as advised by the AF.

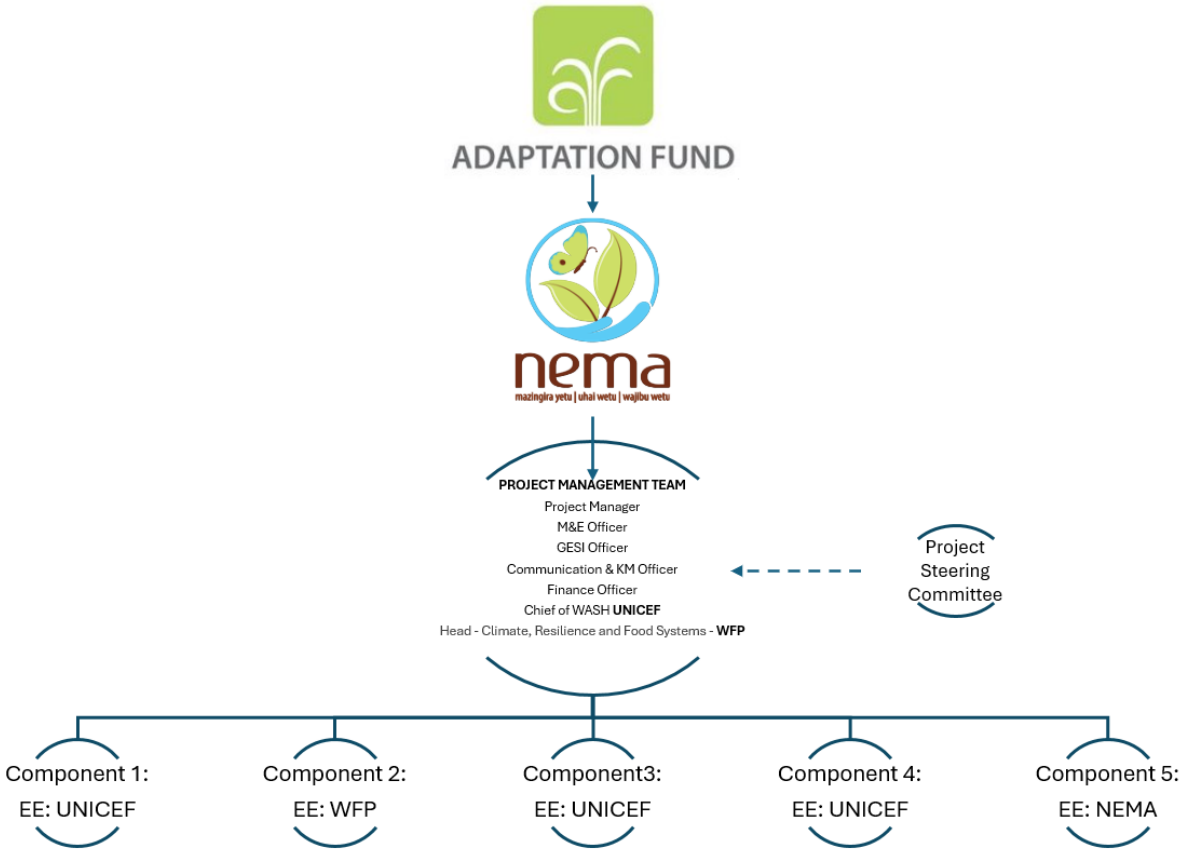


Figure 18: Project implementation organogram

A Project Steering Committee will be constituted to provide strategic guidance on the overall implementation and achievement of the project outcomes. The Project Manager will act as Secretary to the PSC. The composition of the PSC will be as follows:

1. Principal Secretary of State Department for Environment and Climate Change, MECCF & AF NDA (Chair) or a nominee
2. Principal Secretary of State Department of Water and Sanitation, MOWSI, or a nominee
3. Director General NEMA, or a nominee
4. CEC Water for Garissa County
5. CEC Water for Mandera County
6. CEC Water for Wajir County
7. CEC Water for Marsabit County
8. UNICEF Deputy Representative
9. WFP Deputy Representative

10. Project Manager (PM) – AWARE (Member/Secretary)

The membership structure ensures representation from the four target counties through their Chief executive officers for Water (CECs) and senior level representation of two relevant ministries of Environment, Climate Change and Forestry and Ministry of Water, Sanitation and Irrigation, and the programme heads of the two executing agencies. The PSC's primary responsibilities will be to provide strategic guidance on the implementation and progress against the workplan and oversee compliance with the project's Environmental and Social Management and the Gender Action Plans. The governance structure of the project is presented in Figure 18.

In this regard, the PSC will:

- Review and endorse the project inception report
- Review project activity status reports to ensure activities are implemented as planned and expected outcomes are achieved
- Support the PMT to maintain complementarity between the proposed project and key planned and ongoing initiatives in the Ewasor Nyiro Basin such as:
    - Financing Locally led Climate Adaptation (FLOCA, World Bank)
    - The Horn of Africa- Groundwater for Resilience Project (HoAGW4R)
- Ensure the minimum quorum of the Steering Committee, which will be the Chair or Co-Chair and two members

The PSC will meet at project inception, and at yearly intervals throughout the project implementation, and if needed on an exceptional basis. In such cases, the Chair, in consultation with the PMT, will convene special meetings to address urgent matters.

A.2. Roles and Responsibilities of the Executing Entities

UNICEF will be the executing entity for components 1, 3, and 4 in coordination with relevant national and county government departments. UNICEF will be using existing technical and operation teams in Nairobi and Garissa offices. UNICEF has over 200 multisectoral staff across Kenya. The main team members leading the execution of the components will be the UNICEF WASH and Climate team, together with the Nutrition team, the Social and Behavior Change (SBC) team, the gender specialist, as well as the Planning, Monitoring and Evaluation team.

UNICEF as a lead for the Joint programme for Water of the United Nation Agencies in Kenya it will leverage on the expertise of the other 11 agencies who are members of the joint programme for the execution of the three components including UNESCO for the ground water studies and nature based solution intervention, UN Women for gender actions and other entities as required. For construction works UNICEF will hire the services of engineering firm and the construction companies and vendors for the direct execution of the works and services through the UNICEF supply section. Procurement Services are activities undertaken by UNICEF on behalf of eligible partners for the purchase of supplies, equipment, and services. UNICEF is permitted under UNICEF Financial Regulation 5.2 and Financial Rules 105.5 to 105.8, to make arrangements with eligible partners to undertake Procurement Services where such materials and services are required for purposes related to UNICEF activities and consistent with the aims and policies of UNICEF.

WFP will implement Component 2 on ecosystem restoration and climate resilient livelihoods and will leverage existing strategic and technical expertise and support from its current structures of operation. The Country office will provide coordination and overall technical oversight for the development and execution of the project interventions. WFP's field level presence is enabled and supported by field offices whose key responsibility is to coordinate the implementation of activities, jointly implement projects with the County Governments and conduct community engagement. The project will adopt the Climate Resilient Food Systems Hub model as the implementation mechanism at the county level.WFP

will continue to collaborate with national and county governments to achieve national and county-level goals related to food security and climate resilience, thus, engagement with relevant government agencies and departments will be done throughout project implementation.

Acknowledging the importance of collaboration across multiple sectors, the project will prioritize strategic partnerships, especially with the private sector to strengthen resilience in addition to provision of opportunities for livelihood improvement. Special focus will be placed on reaching vulnerable groups, youth and women.

NEMA will be the executing entity for Component 5 on waste management. NEMA will leverage its institutional presence in the four target counties of Garissa, Tana River, Mandera, and Wajir where it maintains fully operational county offices. These offices will provide local oversight, coordination, and technical support throughout the implementation of waste management interventions. NEMA will lead the design and implementation of climate-resilient waste management infrastructure in close coordination with county governments. The execution will be led by NEMA's national team, including specialists from its Waste Management Directorate, Environmental Planning and Research Department, and Environmental Education and Awareness Unit, who will work closely with the county-level teams.

While NEMA will not directly manage waste collection or disposal services under this component, it will contract engineering firms and construction companies for the development of solid waste infrastructure. All procurement will follow Kenya's Public Procurement and Asset Disposal Act and NEMA's internal procurement procedures to ensure transparency, value for money, and adherence to environmental and safety standards.

Executing Entities will:

- Ensure the work is executed and results delivered in accordance with the project document
- Maintain competent technical staff for project implementation.
- Be required to collect, maintain, and furnish specific information for the purpose of monitoring the impact of various project measures to determine the delivery of specified results.
- Coordinate the implementation of project activities within their respective project sites.
- Ensure effective and timely implementation of the project activities.
- Ensure effective, efficient, and economic utilisation of resources.
- Prepare and submit physical/technical and financial progress reports to PMT.
- Liaise with the NIE/PMT on projects implementation.
- Manage and mitigate project level risks

A.3. Monitoring and Evaluation (M&E) Plan

The project's Monitoring and Evaluation (M&E) Plan is designed to ensure evidence-based implementation, transparency, and continuous learning. It aligns with the Adaptation Fund Results Framework and UNICEF's results-based management approach, integrating both quantitative and qualitative methods with a strong emphasis on gender responsiveness and adaptive management. This is described in more detail in Section III.D.

A.3.1. Baseline Assessment

A comprehensive baseline assessment will be conducted during the first two months of the project. It will establish initial values for all indicators in the results framework, combining quantitative data with qualitative insights from communities and key stakeholders. Special attention will be given to gender dynamics. Key elements will include examining the distribution of benefits between genders, assessing the inclusivity of interventions, and identifying gender-specific constraints or advantages. These

findings, guided by the project's Gender Action Plan, will provide a foundation for targeting activities and tracking equitable progress throughout implementation.

A.3.2. Project Monitoring Reports (PMRs)

Project Monitoring Reports will be produced quarterly by the Project Management Team (PMT), with contributions from implementing partners. These reports will cover output and outcome indicators, financial progress, implementation risks, grievance redress updates, and safeguards monitoring. An online M&E dashboard will support real-time tracking and facilitate quick decision-making. The reports will also flag challenges and recommend corrective actions where needed. To ensure accountability, an Action Tracker will be maintained and updated prior to each Project Steering Committee (PSC) meeting to document follow-up on recommendations and promote adaptive management.

In addition, annual Project Performance Reports (PPRs) will be submitted to the Adaptation Fund Secretariat. These reports will summarize progress on all core indicators, financial expenditures, challenges faced, and lessons learned. They ensure compliance with the Fund's reporting requirements and help guide strategic adjustments during implementation.

A.3.3. Midterm Meeting

A dedicated midterm reflection meeting will be held with the PSC and key partners to deliberate on progress agree on strategic course corrections. The Gender Action Plan will also be reviewed and updated based on emerging evidence and community feedback.

A.3.4. Terminal Evaluation

A final independent terminal evaluation will be undertaken in the final year of the project. It will assess the project's overall impact, sustainability, effectiveness, and gender-responsiveness. The evaluation will revisit baseline indicators to assess change, conduct stakeholder consultations, and document key lessons learned. Findings will help determine the project's contribution to long-term community resilience and climate adaptation. A Final Dissemination Workshop will be held to share results, celebrate achievements, and explore opportunities for scale-up or replication, ensuring learning is widely shared across institutions and regions.

Together, these tools—baseline assessment, project monitoring reports, midterm meeting, and terminal evaluation—form the backbone of a robust M&E system. By embedding continuous learning and gender responsiveness into each stage, the project will remain adaptive, inclusive, and accountable to its stakeholders.

B. financial and project risk management.

In the face of escalating climate variability and its profound impact on the arid and semi-arid regions of Kenya, the counties of Mandera, Marsabit, Wajir, and Garissa stand at the frontline of vulnerability. These counties grapple with recurrent droughts, erratic rainfall patterns, and resource scarcity that threaten livelihoods, food security, and community resilience. Addressing these challenges demands a multi-stakeholder, adaptive, and risk-conscious approach to financial and project management.

This interagency adaptation fund proposal collaboratively spearheaded by NEMA, UNICEF, WFP and Government of Kenya (GoK), aims to establish a robust framework for mitigating financial and operational risks while maximizing the impact of climate resilience projects. By leveraging the unique strengths of each partner, we seek to ensure resource optimization, transparency, and sustainability in delivering targeted interventions to the most vulnerable communities.

Our proposed framework prioritizes proactive risk identification and mitigation strategies, fostering accountability in fund utilization and resilience-building initiatives. Through adaptive financial planning, continuous monitoring, and effective stakeholder engagement, this project intends to address not only current vulnerabilities but also the systemic risks that undermine long-term community stability. The collaboration seeks to align with the goals of Kenya's National Adaptation Plan, ensuring that Mandera, Marsabit, Wajir, and Garissa progress toward climate resilience in an equitable, inclusive, and risk-informed manner.

The detailed risks and mitigation matrix is in Annex 15.

C. Measures for environmental and social management

Project AWARE (Adaptation for Water Access and Resilience in Ewaso Nyiro River Basin) embraces a robust Environmental and Social Risk Management (ESRM) framework guided by the Adaptation Fund's Environmental and Social Policy (ESP). The project aims to enhance climate resilience in four ASAL counties of Wajir, Mandera, Marsabit, and Garissa, while ensuring that environmental integrity and social inclusion are safeguarded throughout implementation.

The project commits to complying with both the Adaptation Fund's Environmental and Social Policy (ESP) and Kenyan national and sub-national environmental regulations. Accordingly, an Environmental and Social Compliance Plan has been prepared following a systematic compliance assessment approach. An Environmental and Social Management Plan (ESMP) has also been developed for project activities. A snapshot of this can be found in Annex 3.

All proposed activities have undergone environmental and social screening, categorization, and risk assessment to identify potential adverse impacts and define appropriate mitigation measures. This risk management framework ensures alignment with Kenya's environmental regulations and international standards, enabling sustainable implementation and adaptive environmental governance.

The project was also screened against the 15 principles of the Adaptation Fund ESP and Kenyan national environmental legislation, key of which is the Environmental Management and Coordination Act (EMCA) 1999, as amended in 2015, and its subsidiary legislation. Each activity was assessed for potential environmental and social risks and categorized in accordance with Legal Notice No 31 of April 2019 on the EMCA, as follows:

- **Category A:** High-risk, potentially irreversible impacts (none identified).
- **Category B:** Medium risk, site-specific and reversible with mitigation.
- **Category C:** Low risk, minimal or no adverse environmental/social impacts.

Most project activities are classified as Category C, requiring minimal environmental and social assessment. However, certain activities fall under Categories A and B, necessitating more detailed Environmental and Social Impact Assessments (ESIAs), site-specific Environmental and Social Management Plans (ESMPs), and stakeholder engagement to ensure impact mitigation and compliance with Environmental and Social Policy (ESP) principles.

C.1. E&S Impact Assessment and Risk Management for Project Activities

An Environmental and Social Impact Assessment (ESIA) has been conducted to identify potential impacts, assess their significance, and propose appropriate mitigation measures that can be implemented on the subprojects proposed under Project AWARE. The measures will be further refined once detailed designs have been developed for the components.

Executing Entities (EEs) under Project AWARE will be responsible for the development of the subprojects, implementation of mitigation measures and the Environmental and Social Management Plan (ESMP), with overall guidance and oversight from NEMA.

In alignment with the Adaptation Fund's Environmental and Social Policy (ESP) and UNICEF's Environmental and Social Safeguards Procedures, the following Environmental and Social Impact Assessment (ESIA) process will be applied on subprojects under Project AWARE, beyond this initial impact assessment:

1. **Screening:** Preliminary assessments will be conducted to determine the need for a full ESIA, identify potential environmental and social risks, and assess whether further studies are required.
2. **Scoping:** For activities requiring a full ESIA, the scope of assessment will be defined, identifying data needs and relevant methods, with emphasis on potential impacts to vulnerable and marginalized populations.
3. **Impact Prediction and Evaluation:** A detailed analysis will be carried out to predict and evaluate the magnitude and significance of anticipated impacts, supported by expert input and participatory stakeholder engagement, especially with Indigenous Peoples and other at-risk groups.
4. **Mitigation:** Practical, context-sensitive mitigation measures will be developed following the mitigation hierarchy to avoid, minimize, or offset identified negative impacts.
5. **ESMP Implementation and Monitoring**: A comprehensive ESMP will be developed and implemented, detailing roles and responsibilities, allocated resources, timelines, and reporting protocols. Monitoring indicators will be clearly defined to assess the effectiveness of mitigation measures throughout the project cycle.

In compliance with the Adaptation Fund's requirements for subprojects, a Grievance Redress Mechanism (GRM) has been established (Annex 4), which will ensure that all project-affected persons have accessible, transparent, and responsive channels to raise concerns.

C.2. Environmental and Social Compliance Plan

Project AWARE aligns with the Adaptation Fund's Environmental and Social Policy (ESP). To support this alignment, the Environmental and Social Compliance Plan (ESCP), detailed in Table 7, sets out specific actions to ensure all project activities adhere to the ESP requirements.

Table 7: Risk categorization and ES compliance plan

Project/Programme Component	Proposed Risk Category	Mitigation Measures
Overall Project	A, B and C	• Actively involve beneficiary communities in planning, implementation, and monitoring of activities to enhance local ownership and sustainability. • Ensure consistent adherence to ESP principles, particularly for triggered risks, and regularly monitor and report compliance to allow for timely corrective actions. • Ensure compliance with national and local environmental and social regulations, including securing all necessary NEMA approvals

		• Conduct activity-specific ESIAs and develop mitigation measures for the Unidentified Sub-Projects once designs have been prepared
Climate-resilient Water Access for Human and Livestock Consumption	B	• Conduct site-specific Environmental and Social Impact Assessments (ESIAs) for submission to NEMA • Ensure sustainable groundwater extraction, and • Integrate Nature-based Solutions (NbS) to minimize disruption.
Ecosystem restoration and climate resilient livelihoods for food and nutrition security	B	• Use participatory land-use planning, • Apply climate-smart agricultural techniques • Monitor water usage, and • Promote community-led environmental management.
Enhanced Early Warning Systems and Anticipatory Action	C	• Ensure data privacy and inclusivity in community engagement, and • Provide training on risk communication and decision-making.
Systems Strengthening for Adaptation Coordination and Knowledge Management (KM)	C	• Promote inclusive stakeholder engagement, • Ensure gender balance, and • Enhance access to knowledge for vulnerable groups.
Enhanced Water Quality through Climate Resilient Waste Management	A	• Undertake ESIAs for waste management infrastructure, • Promote circular economy approaches to waste management, • Establish waste segregation systems, and • Provide education and enforcement capacity at county level.

C.3. Environmental and Social Management Arrangements

The implementation of the Environmental and Social Management Plan (ESMP) will be integrated into the overall Project AWARE management structure to ensure effective environmental and social risk mitigation throughout the project lifecycle.

The PMT will be responsible for overall coordination and oversight of ESMP implementation, although the Executing Entities will be responsible for on-ground implementation, monitoring, and reporting on the ESMP. This includes integrating ESMP measures into project planning, budgeting, procurement, and execution. Environmental and Social Safeguards focal points will be appointed at national, county and sub-project levels to lead day-to-day implementation of the ESMP. They will monitor compliance, ensure timely reporting, and provide guidance on mitigation measures. Contractors and Service Providers will be required to adhere to the ESMP provisions during project implementation. Compliance will be included in contractual agreements, with performance monitored regularly.

NEMA will provide regulatory oversight, including review and approval of Environmental and Social

Impact Assessments (ESIAs) and associated site-specific ESMPs, where applicable. The County Governments of Wajir, Mandera, Marsabit, and Garissa will support community engagement, local monitoring, and alignment with county-level environmental regulations and development priorities.

Regular monitoring will be conducted to track the implementation of mitigation measures, with results reported in quarterly and annual project reports. Independent audits and evaluations may be undertaken to assess performance and ensure compliance.

The proposed mitigation measures are mostly preventive in nature (i.e., focused on avoidance and minimisation), and may not require a separate budget to implement. However, a few may have cost implications, and these will have been factored in the prices in the detailed budget.

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A capacity building plan on E&S and gender compliance will be developed and implemented for all project implementation teams. Initial capacity building will be conducted during the inception phase, before construction begins. Additional, targeted activities will be carried out throughout the project. Technical experts will be enlisted as necessary to conduct the capacity building sessions.

C.4. Environmental and Social Monitoring and Evaluation Arrangements

- Monitoring arrangements will track the effectiveness of mitigation actions and collect results for reporting to the Adaptation Fund via annual, mid-term, and terminal reports.
- Monitoring will ensure timely implementation of E&S actions and assess whether interventions are adequately mitigating risks/impacts or if adjustments are needed.
- Annual reports will detail the status of compliance and management plan implementation and outline any corrective actions if necessary.
- The Project Manager will hold direct monitoring, oversight, and compliance responsibilities. Any adjustments to project activities will be accompanied by corresponding updates to monitoring indicators.
- Gender-specific and disaggregated indicators and targets will be developed

The project employs a multi-tiered risk management system, comprising:

- Developed ESMP for all Category A and B activities (e.g., sand dams, boreholes, waste management infrastructure).
- Include detailed mitigation measures, timelines, responsible parties, and cost estimates.
- Integrated into contractor bid documents and supervision protocols.
- Continuous and inclusive consultation with communities, especially with women, minorities and pastoralist groups.
- Sub catchment level Water Resource User Associations (WRUAs), CBOs, and women/youth groups participate in planning and implementation.
- NEMA (as the implementing entity) is responsible for overall ESS compliance and coordination.
- County Governments and local stakeholders lead field implementation and regulatory alignment.
- Consultants and Supervising Engineers will oversee ESMP implementation and compliance monitoring.
- Community-based structures (e.g., WRUAs, Water User Association) are key to local monitoring, reporting, and grievance management.

D. Monitoring and Evaluation arrangements and budgeted M&E plan

The Monitoring and Evaluation (M&E) Plan for this project is designed to track progress, ensure accountability, and support adaptive management throughout its lifecycle. It aims to provide timely and accurate data that enables decision-makers to respond to emerging challenges and optimize project activities. By aligning with the Adaptation Fund Results Framework and UNICEF's results-based management principles, the plan incorporates both quantitative and qualitative methods, ensuring that gender considerations are integrated into all monitoring activities. The M&E system will be robust and participatory, drawing on input from stakeholders, particularly women and marginalized groups, to ensure that the project remains responsive to community needs and priorities.

Key to the M&E approach are four critical tools: the **baseline assessment**, **project monitoring reports**, and **terminal evaluation**. Each tool will provide essential insights into the project's performance and its contribution to climate adaptation outcomes, while also enabling the incorporation of lessons learned into future programming. The integration of gender-sensitive indicators and the commitment to adaptive management will ensure that the project not only meets its targets but also delivers equitable benefits across all communities. Together, these tools will guide the project towards its objectives while fostering transparency, accountability, and continuous learning.

M&E Requirement	Description	Responsibility	Budget (USD)	Timeframe
Inception Workshop	Convene an inception workshop to align stakeholders, validate the work plan, confirm implementation arrangements, review M&E strategy, and discuss risk mitigation and stakeholder engagement approaches. It will also initiate coordination mechanisms and ensure common understanding among implementing partners and government agencies.	EEs to be coordinated by PMU	40,000	Month 1

Baseline Assessment	The baseline report will document the findings of the initial assessment, providing a comprehensive overview of the project's starting conditions. It will include quantitative baseline data aligned with the results framework, as well as qualitative insights on community perceptions of climate change, adaptive capacity, and gender-specific impacts. Key elements of the gender assessment will include examining the distribution of project benefits among different genders, assessing the inclusivity of project interventions, and identifying gender-specific challenges or advantages as set by the gender action plan of the project. This will ensure that the project continues to be sensitive to gender dynamics, promotes equitable outcomes, and contributes to positive social change. The findings from the gender assessment will inform project adjustments, improving effectiveness, and fostering a more inclusive and gender-responsive approach for the rest of the project lifecycle.	EEs to be coordinated by PMU	70,000	Month 1–4
Project Performance Monitoring	Track inputs, outputs, and outcomes in real-time through an adaptive management framework. Use an online M&E dashboard and periodic field monitoring visits to assess performance indicators and flag issues for timely resolution.	M&E Specialist; PMU; through relevant EEs	30,000	Quarterly & Annually
Gender Action Plan Implementation Monitoring	Monitor the implementation of the Gender Action Plan (already developed during proposal phase). Ensure that gender-responsive activities are executed, tracked, and reported through disaggregated indicators. Regularly collect sex-disaggregated data and ensure women's participation in all project activities. Continuous attention will be paid to seeking feedback from women participants to further refine and improve the Gender Action Plan as necessary.	Project M&E Specialist; Gender Specialist	40,000	Midterm and at the end of the project
Environmental & Social (E&S) Safeguards Monitoring	Monitor environmental and social risks outlined in the project’s risk screening. Track mitigation actions, conduct field inspections, and ensure grievance redress mechanisms are functional. Include periodic compliance reviews to ensure adherence to the ESMP and safeguard policy.	M&E Specialist; PMU; through relevant EEs	20,000	Quarterly

Grievance Redress Monitoring	Monitor grievances received through established channels and the resolution status. Analyze trends and recommend programmatic or operational changes.	M&E Specialist; PMU; through relevant EEs	10,000	Quarterly; Ongoing
Project Steering Committee (PSC) Meetings	Hold regular PSC meetings to review project progress, financial and technical reports, and make strategic decisions. Document decisions and follow up using an action tracker. Ensure participation from national, county, and community representatives.	Executing Entity; PSC Secretariat	75,000	Anually
Action Tracker	Maintain an updated action tracker tool to document PSC and monitoring recommendations, assigned responsibilities, and deadlines. This will support accountability and timely follow-up during implementation. The action tracker will be updated prior to each PSC meeting.	M&E Specialist; PMU; through relevant EEs	10,000	Updated before each PSC meeting
AF Project Performance Report (PPR)	Submit annual reports to the Adaptation Fund Secretariat covering progress against indicators, implementation challenges, and financial expenditure. Use this to maintain compliance with AF reporting obligations and inform adaptive management decisions.	NIE supported by EEs	-	Annually
Midterm Meeting	Hold a midterm meeting with stakeholders, including the Project Steering Committee (PSC), to review the progress, discuss challenges, and adjust project strategies or interventions as necessary. This meeting will be a critical checkpoint for adaptive management and will ensure that gender considerations, project progress, and lessons learned are appropriately addressed.	NIE, EEs, PSC; Implementing Partners	30,000	Midpoint (Year 2)
Impact Monitoring	Periodically assess long-term adaptation results, including reduced vulnerability and increased adaptive capacity of communities. Use mixed-method approaches (surveys, FGDs, participatory evaluations) and assess outcome-level indicators in line with the AF Results Framework.	M&E Specialist; PMU; supported by relevant EEs	40,000	Annual & End of Project

Terminal Evaluation	Conduct an independent, comprehensive terminal evaluation to assess the project's overall effectiveness, impact, and sustainability. This evaluation will review all project activities, including gender equality outcomes, environmental impacts, and social benefits. It will analyze the extent to which the project achieved its stated objectives, as well as the long-term sustainability of the outcomes. Stakeholder consultations, including from local communities, implementing partners, and government bodies, will be integral to this process. The evaluation will document lessons learned, best practices, and provide actionable recommendations for scaling, replication, or future interventions. It will also include an assessment of the financial efficiency and alignment with the Adaptation Fund Results Framework.	Independent Evaluator; M&E Officer	80,000	Final 6 months of project
Final Report	Compile a comprehensive final report covering the entire project lifecycle. This report will include all findings from the evaluations, lessons learned, challenges, successes, and recommendations for future projects. It will also summarize financial and administrative aspects and ensure alignment with project goals and the AF Results Framework.	Executing Entity; M&E Specialist	-	Final 6 months of project
Final Dissemination Workshop	Organize a final dissemination workshop to present key findings, lessons learned, and recommendations to stakeholders, including government bodies, implementing partners, and local communities. This workshop will facilitate knowledge sharing and discuss strategies for scaling up or replicating successful activities.	Executing Entity; Implementing Partners; M&E Officer	30,000	Final 6 months of project
Knowledge Management & Learning	Document lessons learned, success stories, and case studies. Facilitate learning exchanges between counties and thematic working groups. Capture learning in annual reports and CCD knowledge platforms.	KM Officer; M&E Unit	Included	Annually; End of Project
		Total	475,000	USD

E. Results framework

Intended Results	Indicators / Measures	Means of Verification	Baseline Values	Final Targets

Impact: Vulnerable communities in EWASO NYIRO RIVER BASIN experience improved well-being, water access, food security, and reduced vulnerability to climate change and climate-induced shocks, contributing to sustainable development and climate resilience.	% households with at least basic water access (nationally)	JMP, Baseline assessment and terminal evaluation	62.90%	63.5%
	% of target households engaged in new diversified livelihoods reporting sustained income generation from these activities	Baseline assessment and terminal evaluation	TBD	TBD
	% of targeted households reporting understanding of and trust in the early warning system	Baseline assessment and terminal evaluation	TBD	20% increase
	Number of National Adaptation Plans developed	Physical document	no	yes
	Number of people benefiting from climate resilient waste management	Baseline assessment and terminal evaluation	TBD	22,407
OUTCOME 1: By 2029, increased numbers of people are benefiting from climate-resilient water systems in targeted communities within the Ewaso Nyiro North River Basin (ENRB)	No. of people using climate-resilient water sources	Baseline assessment and terminal evaluation	TBD	266,000
	# of climate resilient groundwater access systems constructed or rehabilitated	Visits, construction completion reports	0	90
	# of professionals from Water Institutions trained in climate change, sustainable groundwater development and management	pre and post training surveys	0	330
	# of Managed Acquifer Recharge sites constructed	Visits, construction completion reports	0	48
Output 1.1: Enhanced capacity of Water Resource Management Institutions and professionals for sustainable groundwater development and management in ENRB	# of professionals from Water Resource Management Institutions trained in sustainable groundwater development and management	Training reports, attendance sheets	0	200
	% of trained professionals demonstrating change in knowledge and skills in sustainable groundwater development and management	pre and post training surveys	-	80%

Output 1.2 Improved rain/floodwater harnessing for Managed Aquifer Recharge (MAR) and Nature-based Solution (NbS)	• # of potential MAR sites identified and prioritized using MCDA, considering climate change scenarios	Visits, reports	0	48
Output 1.3: Climate-resilient groundwater infrastructure developed and in operation in target communities within ENRB counties	• # of new climate-resilient groundwater access systems constructed in target communities	Visits, construction completion reports	0	60
	• # of existing groundwater access systems in target communities rehabilitated or upgraded with climate-resilient features	Visits, construction completion reports	0	40
Output 1.4: Strengthened financial management capacity of Water Services for sustainable water service delivery in the context of climate change	• # of staff from County Government & Water Service Providers trained in climate-sensitive financial planning, budgeting, and resource mobilization	Training reports, attendance sheets	0	130
	• % change in Non-Revenue Water (NRW) for targeted utilities	WASREB impact report	0%	5% reduction
	% increase of county population living in areas under regulated water service delivery	WASREB impact report	0%	20% increase
	# young people in rural areas trained on sustainable climate resilient water supply operation and maintenance	Training reports, attendance sheets	0	100
OUTCOME 2: By 2029, communities in targeted ENRB locations have established and sustained climate-resilient and diversified livelihoods supported by functional water infrastructure and resilient and productive ecosystems	Climate adaptation benefit Score	Baseline and Annual Outcome; Monitoring report	TBD	≥ baseline value for medium and high categories
	Climate Resilience Score	Baseline and Annual Outcome; Monitoring report	TBD	
	% of households in targeted areas with improved Household Dietary Diversity Scores (HDDS)	Baseline assessment and terminal evaluation	TBD	TBD

	Number of water infrastructure developed, rehabilitated and maintained by target communities	Project completion reports; Satellite imagery	0	11
	Number of people benefiting from adoption of complementary livelihood options or climate smart and regenerative agriculture		TBD	36,850
	Area of degraded land brought under restoration	Programme reports; Satellite imagery	550 ha	4,800 ha
Output 2.1: Prioritized rangeland resources including land are brought under restoration, safeguarded and sustainably managed for improved climate change resilience	Hectares of land rehabilitated and restored	Programme reports; Satellite imagery	550 ha	4,800 ha
	Number of assets built, restored or maintained by target households and communities, by type and unit of measure	Field monitoring & mapping Satellite imagery	0	1100
	Number of rangeland management plans developed or updated by communities and /or local institutions, incorporating sustainable land management practices	Programme reports	0	11
Output 2.2: Community-validated climate resilient water infastructure developed and or rehabilitated for food security	Number of water infrastructure developed, rehabilitated and maintained by target communities	Project completion reports; Satellite imagery	0	11
	Number of people benefitting from improved water sources	Programme reports and documents	TBD	126000
	Number of water management committees established and/or strengthened	Programme documents	0	11
Output 2.3: Climate-smart agriculture and nature-based enterprises promoted through inclusive value chains for climate resilient livelihoods	Number of people benefitting from sustainable agricultural practices such as climate smart and regenerative agriculture	Farmer surveys	0	8800
	Number of people benefiting from adoption of complementary livelihood options (fodder production, beekeeping, gums and resins etc)	Programme documents	0	28050

Output 2.4: Improved household access to nutritious and diversified diets, contributing to enhanced livelihood resilience	• % of households reporting increased consumption of locally produced nutritious foods	County Nutrition Policies& Strategies; Baseline assessment and terminal evaluation	TBD	TBD
OUTCOME 3: By 2029, communities in targeted ENRB locations benefit from having an enhanced early warning system	• % of targeted households reporting understanding of and trust in the early warning system	Baseline assessment and terminal evaluation	TBD	TBD
	# of staffs in local institutions trained and enhanced capacity to issue timely flood and drought early warnings	KMD early warnings, NDMA early warning bulletins	0	20
	% of county revenue allocated to DRM activites	Annual Budget Brief	Garissa (0%) Mandera(0%) Marsabit (1.3%) Wajir (1.3%)	2%
	• # of community-radio startions identified, trained and utilized for last-mile EWS dissemination	radio recordings, project reports	0	9
Output 3.1: Flood EWS accuracy improved by incorporating more data using existing open source flood models	• Existence of clearly defined and disseminated operational guidelines and Standard Operating Procedures (SOPs) for the flood EWS, outlining roles, responsibilities, data flow, and alert dissemination mechanisms	Physical document	TBD	4
	• # of county officials trained on the updated flood EWS	Training reports, attendance sheets	0	20

Output 3.2: Improved Anticipatory Action triggers defined in updated plans, integrating (child) vulnerability in target counties and nationally	• # of anticipatory action plans (AAPs) developed for flood risks in targeted counties, outlining triggers that integrate vulnerability measurements	physical document	0	4
	• integrated CCDRM and seasonal forecast being published twice a year	KMD seasonal forecasts		2
Output 3.3: County budgeting process for Anticipatory Action strengthened	• # of evidence-based advocacy pieces generated to influence DRM resource allocation in programme-based budget	Physical document	0	5 (Budget brief for Water Sector; 4 county DRM-specific presentations)
Output 3.4: Early Warning Communication systems improved to effectively reach last-mile communities	• # of tailored climate service products and EWS messages developed and disseminated in accessible formats and languages for different vulnerable groups	Messaging matrix document report, radio feedback reports, copies of radio spots	0	4
	• # of community-based communication channels identified and utilized for last-mile dissemination	HCD Immersion Session report	0	4
OUTCOME 4: By 2029, the Ministries of Environment and Water and County Climate Units in targeted ENRB counties adopt an enhanced coordination and governance framework.	# of sectoral stakeholders engaged in NAP including vulnerable groups, women and children.	Minutes of meetings, attendance sheets	0	360
	# of staff from the Ministry of Water, WRA, county Water department, and targeted County Climate Units trained in inclusive and participatory climate adaptation planning and coordination processes relevant to the water sector	Training reports, attendance sheets	0	80

Output 4.1: Enhanced capacity of the Ministry of Water and County Climate Unites in targeted ENRB Counties for inclusive and participatory climate adaptation planning and coordination in the water sector.	# of staff from the Ministry of Water, WRA, county Water department, and targeted County Climate Units trained in inclusive and participatory climate adaptation planning and coordination processes relevant to the water sector	Training reports, attendance sheets	0	80
Output 4.2: National Adaptation Plan (NAP) updated through an inclusive and participatory process incorporating feedback from key stakeholders, including youth and ENRB County Representatives	• Number of national adaptation plans updated	physical document	0	1
	• Existence of a Monitoring and Evaluation (M&E) framework for the updated NAP with clearly defined indicators and reporting mechanisms.	physical document	0	1
Output 4.3: Increased capacity of youth in targeted ENRB counties to meaningfully participate in climate adaptation governance and action	• # of youth trained in climate change adaptation and the development of bankable projects	Training reports, attendance sheets	0	60
	• # of youth representatives actively participating in climate adaptation policy processes	Training reports, attendance sheets	0	240
	• % of youth reporting increased knowledge and confidence in their ability to participate in climate adaptation governance and action	pre and post training surveys	0	80%
Output 4.4: A functional and regularly updated climate change and adaptation knowledge platform established and used by the Ministries, County Climate Units, Youth, and other stakeholders in targeted ENRB counties	• Number of users actively accessing and using KM platforms (HackMD, Power BI, IHP-WINS)	• System admin logs • Platform usage statistics • User access reports		12 trained and active users across county and national levels
	• Number of local climate adaptation stories shared in multimedia formats via appropriate dissemination channels	• Story repository (e.g., IHP-WINS, WhatsApp archives) • Radio airing records		≥12 county-level stories collected and disseminated via IHP-WINS, radio, youtube, WhatsApp, or posters

		• Community feedback		
OUTCOME 5: By 2029, an increased number of people in targeted ENRB communities benefit from safe climate-resilient waste management and water quality practices in communities	# of climate-resilient waste sites developed, including Material Recovery Facilities.	Baseline assessment and terminal evaluation	0	6
	# of staff in targted institutions trained on safe and climate-resilient waste management protocols and/or water quality monitoring	Baseline assessment and terminal evaluation	0	135
Output 5.1: Enhanced technical capacity of relevant institutions in targeted ENRB Counties for water quality monitoring and enforcement related to waste management.	• # of NEMA officials trained in basic water quality monitoring techniques	Training reports, attendance sheets	0	15
	• # of counties with established mechanisms for regular water quality monitoring		0	4
Output 5.2: Increased access to climate-resilient waste management infrastructure	• # of climate-resilient waste sites developed, including Material Recovery Facilities.	Visits, construction completion reports	0	6
	• % of targeted people with access to systems for the safe collection, storage, and disposal/treatment of different waste streams (solid waste, wastewater)	Baseline assessment and terminal evaluation	0	90%
Output 5.3: Improved knowledge and adoption of safe and climate-resilient waste management practices and the importance of water quality monitoring within communities and institutions	• # of community members reached through education and awareness campaigns on safe and climate-resilient waste management practices and the link to water quality	Programme reports	0	90,000
	• % of targeted community members and institutional staff demonstrating understanding of the importance of waste management and water quality	Baseline assessment and terminal evaluation	TBD	80%

Output 5.4: Strengthened organizational capacity of county environmental committees in ENRB Counties to develop, implement, and monitor policies and actions addressing waste-related water pollution.	• # of targeted counties with established and functional environmental committees	Programme reports, Baseline assessment and terminal evaluation	0	2
	• # of members of County Environmental Committees (CECs) trained in policy development, implementation, and monitoring related to waste management and water pollution	Training reports, attendance sheets	0	60

F. Project alignment with Results Framework of the Adaptation Fund

Project Objective(s)	Project Objective Indicator(s)	Fund Outcome Indicator(s)	Fund Outcome (s)	Grant Amount (USD)
Impact: Vulnerable communities in EWASO NYIRO RIVER BASIN experience improved well-being, water access, food security, and reduced vulnerability to climate change and climate-induced shocks, contributing to sustainable development and climate resilience.	% households with at least basic water access (nationally)	2.2. Number of people with reduced risk to extreme weather events 4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	Outcome 2.1: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors	20M
	% of target households engaged in new diversified livelihoods reporting sustained income generation from these activities	6.1 Percentage of households and communities having more secure (increased) access to livelihood assets 6.2. Percentage of targeted population with sustained climate-resilient livelihoods	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	
	% of targeted households reporting understanding of and trust in the early warning system	1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis	Outcome 1: Reduced exposure at national level to climate-related hazards and threats	
	Number of National Adaptation Plans developed	7. Climate change priorities are integrated into national development strategy	Outcome 7: Improved policies and regulations that promote and enforce resilience measures	
	Number of people benefiting from climate resilient waste management	2.2. Number of people with reduced risk to extreme weather events 4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	Outcome 2.1: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses Outcome 4: Increased adaptive capacity within relevant	

			development and natural resource sectors	
Project Outcome(s)	**Project Outcome Indicator(s)**	**Fund Output Indicator(s)**	**Fund Output (s)**	**Grant Amount (USD)**
OUTCOME 1: By 2029, increased numbers of people are benefiting from climate-resilient water systems in targeted communities within the Ewaso Nyiro North River Basin (ENRB)	No. of people using climate-resilient water sources			8.95M
	# of climate resilient groundwater access systems constructed or rehabilitated	3.1.1 Number and type of risk reduction actions or strategies introduced at local level 4.1.1. No. and type of health or social infrastructure developed or modified to respond to new conditions resulting from climate variability and change (by type) 4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by asset types) 6.1.1.No. and type of adaptation assets (physical as well as knowledge) created in support of individual or community-livelihood strategies	Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities Output 4: Vulnerable physical, natural, and social assets strengthened in response to climate change impacts, including variability Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	
	# of professionals from Water Institutions trained in climate change, sustainable groundwater development and management	2.1.2. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	Output 2.2: Targeted population groups covered by adequate risk reduction systems	
	# of Managed Aquifer Recharge sites constructed	5.1. No. and type of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type of assets)	Output 5: Vulnerable physical, natural, and social assets strengthened in response to climate change impacts, including variability	
OUTCOME 2: By 2029, communities in targeted ENRB locations have established and sustained climate-	Climate adaptation benefit Score			5.5M
	Climate Resilience Score			
	% of households in targeted areas with improved Household Dietary Diversity Scores (HDDS)			

resilient and diversified livelihoods supported by functional water infrastructure and resilient and productive ecosystems	Number of water infrastructure developed, rehabilitated and maintained by target communities	6.1.1.No. and type of adaptation assets (physical as well as knowledge) created in support of individual or community-livelihood strategies	Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	
	Number of people benefiting from adoption of complementary livelihood options or climate smart and regenerative agriculture	6.1.2. Type of income sources for households generated under climate change scenario		
	Area of degraded land brought under restoration	5.1. No. and type of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type of assets)	Output 5: Vulnerable physical, natural, and social assets strengthened in response to climate change impacts, including variability	
OUTCOME 3: By 2029, communities in targeted ENRB locations benefit from having an enhanced early warning system	• % of targeted households reporting understanding of and trust in the early warning system	Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities - 3.1.1 No. and type of risk reduction actions or strategies introduced at local level	Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities	800K
	# of staffs in local institutions trained and enhanced capacity to issue timely flood and drought early warnings	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events 2.1.2. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	Output 2.1: Strengthened capacity of national and regional centres and networks to respond rapidly to extreme weather events	
	% of county revenue allocated to DRM activities	1.2 Development of early warning systems	Output 1: Risk and vulnerability assessments conducted and updated at a national level	
	# of community-radio stations identified, trained and utilized for last-mile EWS dissemination	3.1.1 No. and type of risk reduction actions or strategies introduced at local level	Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities	
OUTCOME 4: By 2029, the Ministries of Environment and Water and County Climate Units in targeted ENRB counties adopt an enhanced coordination	# of sectoral stakeholders engaged in NAP including vulnerable groups, women and children.	7.1. No., type, and sector of policies introduced or adjusted to address climate change risks 7.2. No. of targeted development strategies with incorporated climate change priorities enforced	Output 7: Improved integration of climate-resilience strategies into country development plans	600K

and governance framework.	# of staff from the Ministry of Water, WRA, county Water department, and targeted County Climate Units trained in inclusive and participatory climate adaptation planning and coordination processes relevant to the water sector	2.1.2. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	Output 2.1: Strengthened capacity of national and regional centers and networks to respond rapidly to extreme weather events	
OUTCOME 5: By 2029, an increased number of people in targeted ENRB communities benefit from safe climate-resilient waste management and water quality practices in communities	# of climate-resilient waste sites developed, including Material Recovery Facilities.	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by asset types)	Output 4: Vulnerable physical, natural, and social assets strengthened in response to climate change impacts, including variability	500K
	# of staff in targeted institutions trained on safe and climate-resilient waste management protocols and/or water quality monitoring	2.1.2. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased	Output 2.1: Strengthened capacity of national and regional centers and networks to respond rapidly to extreme weather events	

G. Detailed budget

Act.	Description	Unit	Unit Cost	Quantity	Estimated Budget (USD)	EE on the proposal
Component 1: Climate resilient water access for human and livestock use					**8,950,000**	**UNICEF**
Output 1.1: Enhanced capacity of Water Resource Management Institutions and professionals for sustainable groundwater development and management in ENRB					**270,000**	**UNICEF**
1.1.1	Develop and implement training program on climate change & hydrological analysis in partnership with Hydrological Society of Kenya (HSK) and the Hydrologists Registration Board and establish structure for Continuous Professional Development (CPD) in HSK.	Hydrologists & Water Engineers	450	200	90,000	UNICEF
1.1.2	Develop and implement training program on hydrogeological analysis & best practices with GSK and establish structure for CPD in Geological Society of Kenya (GSK)	Hydrogeologist	450	200	90,000	UNICEF
1.1.3	Establish structure for CPD and training program of drillers including on design, construction & operation of climate resilient borehole water supply systems for graduate engineers	Water Engineers & Drillers	450	200	90,000	UNICEF
Output 1.2 Improved rain/floodwater harnessing for Managed Aquifer Recharge (MAR) and Nature-based Solution (NbS)					2,160,000	**UNICEF**
1.2.1	Feasibility study to identify locations for construction of water conservation (sand dams) and Managed aquifer structures (Reverse wells) in priority sub drainage basins, site and design.	Sub Drainage Basin	30,000	8	240,000	UNICEF
1.2.2	Construct sand dams and /or sub surface dams and provide solarized water abstraction equipment and community water points.	Sand dam	40,000	40	1,600,000	UNICEF
1.2.3	Construct water filtration and reverse wells for managed aquifer recharge to increase yields and /or reduce salinity of existing boreholes.	Reverse wells	40,000	8	320,000	UNICEF

Output 1.3: Climate-resilient groundwater infrastructure developed and in operation in target communities within ENRB counties					5,830,000	**UNICEF**
1.3.1	Drill and equip new boreholes for climate resilient community water supplies including solarization - standard wells <300m including hydrogeological and geophysical survey	water yard (new)	75,000	50	3,750,000	UNICEF
1.3.2	Upgrading of existing borehole systems to be climate resilient for communities in water scarce locations focusing on LNOB groups including solarization	water yard (Upgrading)	20,000	40	800,000	UNICEF
1.3.3	Provision of climate resilient water supply connection to schools	school	5,000	40	200,000	UNICEF
1.3.4	Provision of climate resilient water supply connection to Healthcare facilities	HCF	5,000	40	200,000	UNICEF
1.3.5	Upgrading of Shallow Wells to green energy Pumped Systems	well	8,000	10	80,000	UNICEF
1.3.6	Construction of multi-village water supply scheme including hydrogeological & geophysical survey	Multi-village scheme	200,000	4	800,000	UNICEF
Output 1.4: Strengthened financial management capacity of Water Services for sustainable water service delivery in the context of climate change					690,000	**UNICEF**
1.4.1	Train young people in rural areas on sustainable climate resilient water supply operation and maintenance - 6 months (training, coaching / mentoring and follow up - at Kenya Water Institute and provide basic tools	Trainee artsan	1000	100	100,000	UNICEF
1.4.2	Build capacity of County water departments and Water Service Providers on climate resilient planning, design, O&M, water safety planning, WQ monitoring & last-mile connectivity to LNOB groups	County Govt	7,750	4	31,000	UNICEF
1.4.3	Establish & operationalize professional O&M model in all rural areas	County Govt	10,000	4	40,000	UNICEF
1.4.4	Technical support to WSPs to develop sustainable tariff for full O&M cost recovery by ensuring affordability for LNOB groups	Utility	20,000	7	140,000	UNICEF
1.4.5	WSPs supported to increase metering ratio to reduce Non Revenue Water and Internet of Things technology adopted to support data management, leakage detection and service monitoring	Utility	10,000	7	70,000	UNICEF

1.4.6	Build capacity of WSPs to enforce water resources management rules	Utility	5,000	7	35,000	UNICEF
1.4.7	Train Board of directors, water committees /municipal boards on water governance	Utility	5,000	7	35,000	UNICEF
1.4.8	Support WSPs develop & implement pro-poor policies	Utility	5,000	7	35,000	UNICEF
1.4.9	Sensitization of community on County Water Governance, their water rights, WUA accountability, importance of payment for water, and feedback loops to regulator/oversight.	Water Supply Systems	2,000	102	204,000	UNICEF
Component 2: Ecosystem restoration and climate resilient livelihoods for food and nutrition security					**5,500,000**	**WFP**
Output 2.1: Prioritized rangeland resources including land are brought under restoration, safeguarded and sustainably managed for improved climate change resilience					1,925,000	**WFP**
2.1.1	Conduct participatory detailed assessments of land and water ecosystems to determine degradation levels, determine restoration opportunities and design restoration plans	Assessment	20,000	11	220,000	WFP
2.1.2	Implementation of ecosystem restoration through structural interventions including earthworks for soil and water conservation, erosion control structures, access control structures	Assorted earthworks including check dams, terraces, contour bunds, negarims, gabions, riprap, grazing corridors	82,500	11	907,500	WFP
2.1.3	Implementation of ecosystem restoration through biological (revegetation, reseeding, reforestation, agroforestry) restoration interventions	Vegetative stabilization infrastructure including bio-swales, riparian bufers, vetiver hedge grows, shelterbelts, enclosures, reseeding units/grass seedbanks	19,500	11	214,500	WFP

2.1.4	Formation and strengthening of relevant natural resource management groups such as Rangeland Management Committees (RMCs) and Water Resource Users' Associations (WRUAs) for improved rangeland and watershed management and governance for sustainability	RMC & WRUA training per hub	18,500	11	203,500	WFP
2.1.5	Pollution control and sustainable land use - promoting sustainable agricultural practices, promoting integrated pest management, developing and enforcing guidelines to prevent encroachment and unsustainable activities	Training/demonstration	29,500	8	236,000	WFP
2.1.6	Implement land and water ecosystem protection strategies, including small-scale flood control measures and implement nature-based approaches such as safeguarding riverbanks	Retaining walls, riprap, riparina buffers strips, vegetated terraces	28,700	5	143,500	WFP
Output 2.2: Community-validated climate resilient water infastructure developed and or rehabilitated for food security					2,200,000	**WFP**
2.2.1	Conduct multi-stakeholder (national, county and community level) mapping and consultation for the development and/or rehabilitation of water infrastructure for productive use.	Consultations	13,000	11	143,000	WFP
2.2.2	Development and/or rehabilitation of community-validated climate resilient and sustainable water infrastructure including stormwater harvesting and storage and groundwater for small-scale irrigation. Efficient irrigation technologies that optimize water use to deliver more yields per unit of water used and that employ renewable energy for pumping will be adopted.	Water pan rehabilitation	93,500	20	1,870,000	WFP
2.2.3	Formation and strengthening of relevant water management community groups for improved water management, including training of Irrigation Water Users' Associations on irrigation system management, on-farm water management and environmental issues in irrigation development and operation.	Training	17,000	11	187,000	WFP
Output 2.3: Climate-smart agriculture and nature-based enterprises promoted through inclusive value chains for climate resilient livelihoods					825,000	**WFP**
2.3.1	Capacity strengthening to promote cultivation of nutrition-sensitive and drought-tolerant/climate adapted crops and livestock targeting smallholder farmers.	Training/demonstration	18,000	11	198,000	WFP

2.3.2	Capacity strengthening of smallholder farmers to transition to climate-smart practices such as crop rotation, conservation tillage, cover cropping, agroforestry to enhance productivity of croplands	Training/Demonstration	18,500	11	203,500	WFP
2.3.3	Support development of nature-based enterprises run by women and youth such as beekeeping, fodder production, grass seed production and gums and resins and provide targeted support such as private sector and market linkages.	Enterprises	23,500	11	258,500	WFP
2.3.4	Support community to access financial inclusion to enhance their social and economic adaptive capacities	Training	15,000	11	165,000	WFP
Output 2.4: Improved household access to nutritious and diversified diets, contributing to enhanced livelihood resilience					550,000	**UNICEF**
2.4.1	Integrate climate resilient water access as key pillar of improving nutrition outcome in existing guidelines feeding of young children, food for school age children and maternal nutrition.	County	10000	4	40,000	UNICEF
2.4.2	Engage with research institutions and local private sector partners to develop and test environmentally friendly low-cost value addition processing of agricultural and livestock outputs into nutrient dense food products.	Consultancy	70000	1	70,000	UNICEF
2.4.3	Capacity strengthening of health facility and community health workers to promote the climate resilient, nutritious livelihood production and to support targeted communities to modify their behaviors, adopting practices that increase their ability to adapt to climate impacts	County	40000	4	160,000	UNICEF
2.4.4	Utilize existing community-based platforms to build awareness and modify behaviours to prioritize household consumption of a portion of the nutrition-and climate-sensitive livelihoods production.	County	40000	4	160,000	UNICEF
2.4.5	Capacity building on food storage, processing and meal preparation of introduced nutritious agri-livelihoods in order to build household food and nutrition security for improved climate resilience.	County	30000	4	120,000	UNICEF
Component 3: Enhanced early warning systems and anticipatory action					800,000	UNICEF

Output 3.1: Flood EWS accuracy improved by incorporating more data using existing open source flood models					100,000	UNICEF
3.1.1	Validate Google Flood hub inundation history maps for target counties with community and county stakeholders	Validation workshop	15,000	4	60,000	UNICEF
3.1.2	Train county WRA and County KMD on usage of Google Flood Hub EWS and integration in existing communication structures	Training	10,000	4	40,000	UNICEF
Output 3.2: Improved Anticipatory Action triggers defined in updated plans, integrating (child) vulnerability in target counties and nationally					320,000	UNICEF
3.2.1	Integrate the Children Climate Disaster Risk Model (CCDRM) into the national seasonal forecasts issued by Kenya Meteorological Department	Consultancy	120,000	1	120,000	UNICEF
3.2.2	Review and improve triggers and thresholds for AA in county Anticipatory Action Plans and integrate (child) vulnerability data	Counties	50,000	4	200,000	WFP
Output 3.3: County budgeting process for Anticipatory Action strengthened					80,000	UNICEF
3.3.1	Assist counties in allocating and reporting a minimum of 2% of the development budget to DRM/AA	Counties	20,000	4	80,000	UNICEF
Output 3.4: Early Warning Communication systems improved to effectively reach last-mile communities					300,000	
3.4.1	Conduct community HCD immersion session on EWS to understand local EW uptake and understanding	County	20,000	4	80,000	UNICEF
3.4.2	Develop contextualized SBC Early Warning communication materials for radio, Community Health Promotors (CHPs) and other platforms in local languages	Communication package and SOPs	15,000	4	60,000	UNICEF
3.4.3	Train radio stations and CHPs on translation and communciation of timely early warnings of flooding to community	Radio stations	10,000	9	90,000	UNICEF
3.4.4.	Train community health promotors and workforce and community social mobilizers on early warning communication and utilisation/AA	Trainings	17,500	4	70,000	UNICEF
Component 4: System strengthening for enhanced climate adaptation coordination					**650,000**	**UNICEF**
Output 4.1: Enhanced capacity of the Ministry of Water and County Climate Unites in targeted ENRB Counties for inclusive and participatory climate adaptation planning and coordination in the water sector.					100,000	UNICEF

4.1.1	Provide technical capacity building for water sector professionals and stakeholders to enhance climate adaptation coordination.	Trainings	10,000	4	40,000	UNICEF
4.1.2	Strengthen the capacity of County Climate Change Units (CCUs) in targeted counties for effective coordination of water sector activities.	Yearly county coordination meetings	5000	12	60,000	UNICEF
Output 4.2: National Adaptation Plan (NAP) updated through an inclusive and participatory process incorporating feedback from key stakeholders, including youth and ENRB County Representatives					200,000	UNICEF
4.2.1	Update Kenya's National Adaptation Plan	Consultancy	80,000	1	80,000	UNICEF
4.2.2	Conduct sectoral workshops to inform NAP including youth and women	Workshops	20,000	6	120,000	UNICEF
Output 4.3: Increased capacity of youth in targeted ENRB counties to meaningfully participate in climate adaptation governance and action					100,000	UNICEF
4.3.1	Train youth on developing bankable climate change project proposals to engage them in climate action initiatives.	Regional workshops	20,000	1	20,000	UNICEF
4.3.2	Engage 2,000 young people in UNICEFs GreenRising through land restoration of 200 ha	ha restored (incl training and certification of young people)	400	200	80,000	UNICEF
Output 4.4: A functional and regularly updated climate change and adaptation knowledge platform established and used by the Ministries, County Climate Units, Youth, and other stakeholders in targeted ENRB counties					250,000	UNICEF
4.4.1	Information Collection & Structuring Training (1 physical, 2 virtual sessions)	Annual package	89,400.00	1.00	89,400	UNICEF
4.4.2	Template and Taxonomy Development	Consultant	7,000.00	1	7,000	UNICEF
4.4.3	Use of Online Software (HackMD, Power BI, system support)	Lumpsum (Annual)	6,200	3	18,600	UNICEF
4.4.4	Story Dissemination & Communication Training	Annual training package	15,000.00	3	45,000	UNICEF
4.4.5	Centralized KM Management (QA, dashboard integration, oversight)	Annual coordination	30,000.00	3	90,000	UNICEF
Component 5: Climate resilient Waste management for water quality					**500,000**	**NEMA**
Output 5.1: Enhanced technical capacity of relevant institutions in targeted ENRB Counties for water quality monitoring and enforcement related to waste management.					66,000	NEMA

5.1.1	Strengthen institutional capacity to monitor pollution levels in domestic water sources, especially during flood events when surface runoff can introduce contaminants into water systems.	5 day Training (for 15 NEMA staff)	15,000	1	15,000	NEMA
5.1.2	Procure portable water quality monitoring kits	Portable monitoring kit	2,500	10	25,000	
5.1.3	Develop training module on sustainable waste management and compliance with the sustainable waste management act	Training module	20,000	1	20,000	NEMA
5.1.4	Train government staff and waste handlers (County govt, CBO, contractors) sustainable waste management and compliance with the sustainable waste management act	2 day training (30 people)	3,000	2	6,000	NEMA
Output 5.2: Increased access to climate-resilient waste management infrastructure					319,000	NEMA
5.2.1	Establish Material Recovery Facilities (MRFs) to foster circularity in waste management, reducing waste that could clog drainage systems during floods and worsen flood impacts.	MRF	12,000	5	60,000	NEMA
5.2.2	Develop climate resilient waste management site adhering to all 10 criteria of the sustainable waste management act.	Waste management site	259,000	1	259,000	NEMA
Output 5.3: Improved knowledge and adoption of safe and climate-resilient waste management practices and the importance of water quality monitoring within communities and institutions					75,000	NEMA
5.3.1	Conduct community education campaigns on the importance of waste segregation at source, recycling, and reuse, emphasizing how improper waste disposal worsens flooding and reduces water availability during droughts.	Villages	500	150	75,000	NEMA
Output 5.4: Strengthened organizational capacity of county environmental committees in ENRB Counties to develop, implement, and monitor policies and actions addressing waste-related water pollution.					40,000	NEMA
5.4.1	Strengthen the capacity of County Environment Committees to identify and address waste-related water pollution, focusing on mitigating flood-induced contamination and safeguarding water resources during droughts.	Training (30 people)	20,000	2	40,000	NEMA
Activities total cost					16,400,000	
Project execution cost (9.5%)					1,900,000	pro ratio to partners

Total Project costs	18,300,000	
Project Cycle Management Fee	1,700,000	NEMA
Total amount of financing requested	20,000,000	

H. Disbursement schedule

Will be submitted in next round

[1] The AF utilized OECD/DAC terminology for its results framework. Project proponents may use different terminology but the overall principle should still apply

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government[2]

Endorsement letter is in Annex 16

Dr. Eng. Festus K. Ng'eno, MIEK, CBS *Principal Secretary,* *State Department For Environment & Climate Change* *Ministry of Environment, Climate Change & Forestry*	Date*: 21 March 2025*

Annex 16: Endorsement letter of NDA

REPUBLIC OF KENYA

MINISTRY OF ENVIRONMENT, CLIMATE CHANGE & FORESTRY
State Department for Environment & Climate Change
Office of the Principal Secretary

Telegrams: "NATURE", Nairobi
Telephone: 254-20- 2730808/9
Fax: 254-20- 2734722
Email : psoffice@environment.go.ke

SHA BUILDING
RAGATI ROAD
P. O. BOX 30126-00100
NAIROBI

When replying, please quote:

MEF/EMC/I/I

21st March, 2025

The Adaptation Fund Board
C/O Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

RE: ENDORSEMENT FOR PROJECT AWARE: ADAPTATION FOR WATER ACCESS AND RESILIENCE IN EWASO NYIRO RIVER BASIN, KENYA

In my capacity as Designated Authority for the Adaptation Fund in Kenya, I confirm that the above National Project Proposal is in accordance with the Government's National Priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in the country.

Accordingly, I am pleased to endorse the above Project Proposal with support from the Adaptation Fund. If approved, the Project/programme will be implemented by the National Environment Management Authority (NEMA) and executed by the United Nations Children's Fund (UNICEF) and the World Food Programme (WFP).

PRINCIPAL SECRETARY
STATE DEPARTMENT FOR ENVIRONMENT
& CLIMATE CHANGE
P. O. Box 30126 - 00100.
NAIROBI

Dr. Eng. Festus K. Ng'eno, MIEK, CBS
PRINCIPAL SECRETARY

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REPUBLIC OF KENYA

MINISTRY OF ENVIRONMENT, CLIMATE CHANGE & FORESTRY
State Department for Environment & Climate Change
Office of the Principal Secretary

Telegrams: "NATURE", Nairobi
Telephone: 254-20- 2730808/9
Fax: 254-20- 2734722
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NAIROBI

When replying, please quote:

MEF/EMC/I/I

21st March, 2025

The Adaptation Fund Board
C/O Adaptation Fund Board Secretariat
Email: Secretariat@Adaptation-Fund.org
Fax: 202 522 3240/5

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PRINCIPAL SECRETARY
STATE DEPARTMENT FOR ENVIRONMENT
& CLIMATE CHANGE
P. O. Box 30126 - 00100.
NAIROBI

Dr. Eng. Festus K. Ng'eno, MIEK, CBS
PRINCIPAL SECRETARY

PART IV: ENDORSEMENT BY GOVERNMENT AND CERTIFICATION BY THE IMPLEMENTING ENTITY

B. Implementing Entity certification

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (Kenya Vision 2030, Kenya NDC 2020, Kenya National Climate Change Action Plan 2023-2027 and the National Adaptation Plan 2015-2030) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.

MAMO BORU MAMO

Name & Signature

Mamo Boru Mamo, EBS
Director General NEMA
Implementing Entity Coordinator

Date: 05/05/2025	Tel. and email: dgnema@nema.go.ke Tel: +254 725746493

Project Contact Person:
Jusper M. Omwenga, PhD
Principal Environmental Planning and Climate Change Scientist
National Environment Management Authority

Tel. And Email:
Email: jomwenga75@gmail.com;jomwenga@nema.go.ke
Tel: +254 721473901; +254 735396670

[6] Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities

B. Implementing Entity certification

Provide the name and signature of the Implementing Entity Coordinator and the date of signature. Provide also the project/programme contact person's name, telephone number and email address

I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (Kenya Vision 2030, Kenya NDC 2020, Kenya National Climate Change Action Plan 2023-2027 and the National Adaptation Plan 2015-2030) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social Policy and the Gender Policy of the Adaptation Fund and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.
Name & Signature Mamo Boru Mamo, EBS Director General NEMA Implementing Entity Coordinator

Date:	Tel. and email: dgnema@nema.go.ke Tel: +254 725746493

Project Contact Person:
Jusper M. Omwenga, PhD
Principal Environmental Planning and Climate Change Scientist
National Environment Management Authority

Tel. And Email:
Email: jomwenga75@gmail.com;jomwenga@nema.go.ke
Tel: +254 721473901; +254 735396670

[6.] Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities

ANNEXES

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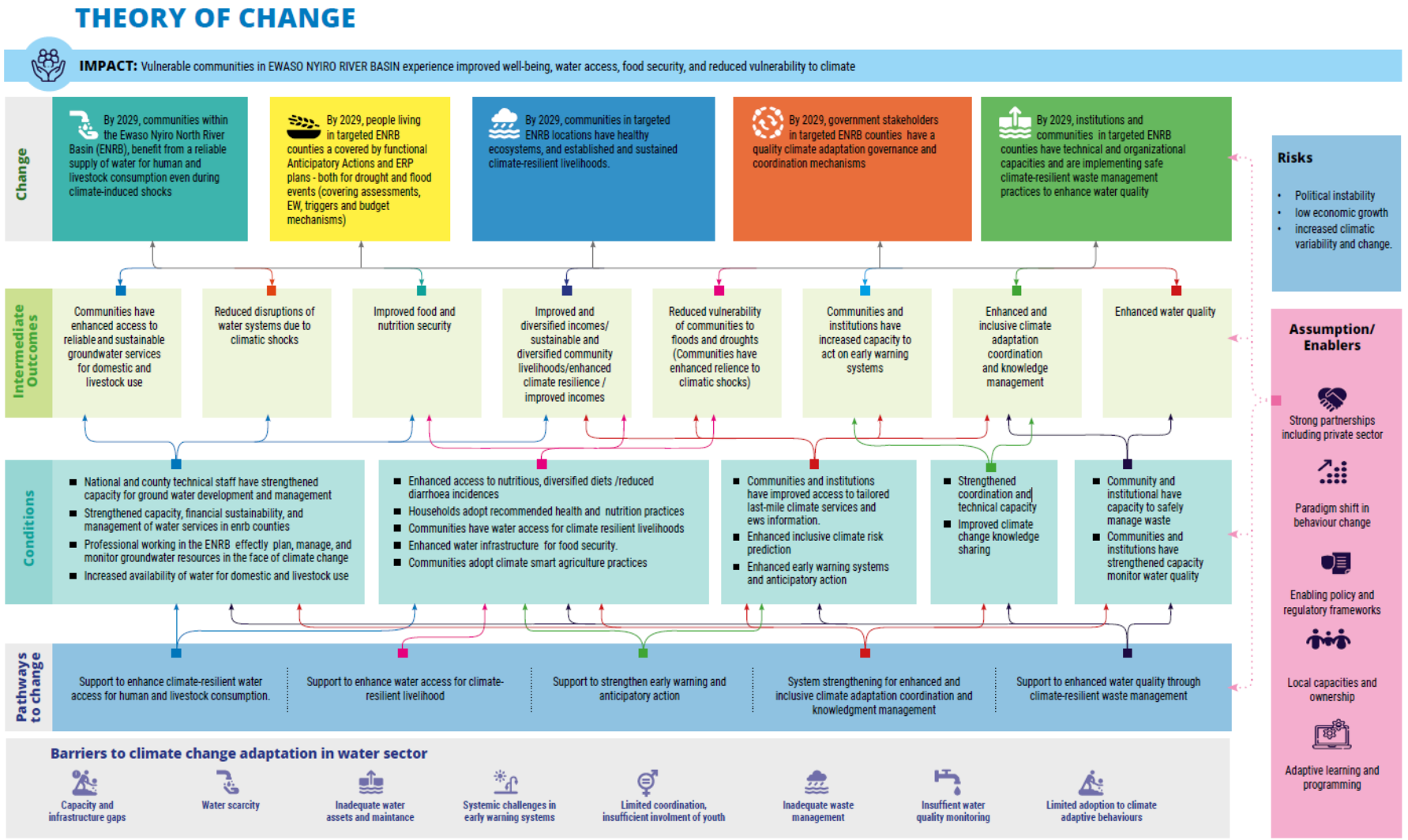
Annex 1 Theory of Change



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Annex 2: Workplan

		2026				2027				2028			
Act.	**Description**	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Component 1: Climate resilient water access for human and livestock use													
Output 1.1: Enhanced capacity of Water Resource Management Institutions and professionals for sustainable groundwater development and management in ENRB													
1.1.1	Develop and implement training program on climate change & hydrological analysis in partnership with Hydrological Society of Kenya (HSK) and the Hydrologists Registration Board and establish structure for Continuous Professional Development (CPD) in HSK.												
1.1.2	Develop and implement training program on hydrogeological analysis & best practices with GSK and establish structure for CPD in Geological Society of Kenya (GSK)												
1.1.3	Establish structure for CPD and training program of drillers including on design, construction & operation of climate resilient borehole water supply systems for graduate engineers												
Output 1.2 Improved rain/floodwater harnessing for Managed Aquifer Recharge (MAR) and Nature-based Solution (NbS)													
1.2.1	Feasibility study to identify locations for construction of water conservation (sand dams) and Managed aquifer structures (Reverse wells) in priority sub drainage basins, site and design.												
1.2.2	Construct sand dams and /or sub surface dams and provide solarized water abstraction equipment and community water points.												
1.2.3	Construct water filtration and reverse wells for managed aquifer recharge to increase yields and /or reduce salinity of existing boreholes.												
Output 1.3: Climate-resilient groundwater infrastructure developed and in operation in target communities within ENRB counties													

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1.3.1	Drill and equip new boreholes for climate resilient community water supplies including solarization - standard wells <300m including hydrogeological and geophysical survey													
1.3.2	Upgrading of existing borehole systems to be climate resilient for communities in water scarce locations focusing on LNOB groups including solarization													
1.3.3	Provision of climate resilient water supply connection to schools													
1.3.4	Provision of climate resilient water supply connection to Healthcare facilities													
1.3.5	Upgrading of Shallow Wells to green energy Pumped Systems													
1.3.6	Construction of multi-village water supply scheme including hydrogeological & geophysical survey													
Output 1.4: Strengthened financial management capacity of Water Services for sustainable water service delivery in the context of climate change														
1.4.1	Train young people in rural areas on sustainable climate resilient water supply operation and maintenance - 6 months (training, coaching / mentoring and follow up - at Kenya Water Institute and provide basic tools													
1.4.2	Build capacity of County water departments and Water Service Providers on climate resilient planning, design, O&M, water safety planning, WQ monitoring & last-mile connectivity to LNOB groups													
1.4.3	Establish & operationalize professional O&M model in all rural areas													
1.4.4	Technical support to WSPs to develop sustainable tariff for full O&M cost recovery by ensuring affordability for LNOB groups													

1.4.5	WSPs supported to increase metering ratio to reduce Non Revenue Water and Internet of Things technology adopted to support data management, leakage detection and service monitoring												
1.4.6	Build capacity of WSPs to enforce water resources management rules												
1.4.7	Train Board of directors, water committees /municipal boards on water governance												
1.4.8	Support WSPs develop & implement pro-poor policies												
1.4.9	Sensitization of community on County Water Governance, their water rights, WUA accountability, importance of payment for water, and feedback loops to regulator/oversight.												
Component 2: Ecosystem restoration and climate resilient livelihoods for food and nutrition security													
Output 2.1: Prioritized rangeland resources including land are brought under restoration, safeguarded and sustainably managed for improved climate change resilience													
2.1.1	Conduct participatory detailed assessments of land and water ecosystems to determine degradation levels, determine restoration opportunities and design restoration plans												
2.1.2	Implementation of ecosystem restoration through structural interventions including earthworks for soil and water conservation, erosion control structures, access control structures												
2.1.3	Implementation of ecosystem restoration through biological (revegetation, reseeding, reforestation, agroforestry) restoration interventions												

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2.1.4	Formation and strengthening of relevant natural resource management groups such as Rangeland Management Committees (RMCs) and Water Resource Users' Associations (WRUAs) for improved rangeland and watershed management and governance for sustainability												
2.1.5	Pollution control and sustainable land use - promoting sustainable agricultural practices, promoting integrated pest management, developing and enforcing guidelines to prevent encroachment and unsustainable activities												
2.1.6	Implement land and water ecosystem protection strategies, including small-scale flood control measures and implement nature-based approaches such as safeguarding riverbanks												
Output 2.2: Community-validated climate resilient water infastructure developed and or rehabilitated for food security													
2.2.1	Conduct multi-stakeholder (national, county and community level) mapping and consultation for the development and/or rehabilitation of water infrastructure for productive use.												
2.2.2	Development and/or rehabilitation of community-validated climate resilient and sustainable water infrastructure including stormwater harvesting and storage and groundwater for small-scale irrigation. Efficient irrigation technologies that optimize water use to deliver more yields per unit of water used and that employ renewable energy for pumping will be adopted.												

2.2.3	Formation and strengthening of relevant water management community groups for improved water management, including training of Irrigation Water Users' Associations on irrigation system management, on-farm water management and environmental issues in irrigation development and operation.													
Output 2.3: Climate-smart agriculture and nature-based enterprises promoted through inclusive value chains for climate resilient livelihoods														
2.3.1	Capacity strengthening to promote cultivation of nutrition-sensitive and drought-tolerant/climate adapted crops and livestock targeting smallholder farmers.													
2.3.2	Capacity strengthening of smallholder farmers to transition to climate-smart practices such as crop rotation, conservation tillage, cover cropping, agroforestry to enhance productivity of croplands													
2.3.3	Support development of nature-based enterprises run by women and youth such as beekeeping, fodder production, grass seed production and gums and resins and provide targeted support such as private sector and market linkages.													
2.3.4	Support community to access financial inclusion to enhance their social and economic adaptive capacities													
Output 2.4: Improved household access to nutritious and diversified diets, contributing to enhanced livelihood resilience														
2.4.1	Integrate climate resilient water access as key pillar of improving nutrition outcome in existing guidelines feeding of young children, food for school age children and maternal nutrition.													

2.4.2	Engage with research institutions and local private sector partners to develop and test environmentally friendly low-cost value addition processing of agricultural and livestock outputs into nutrient dense food products.													
2.4.3	Capacity strengthening of health facility and community health workers to promote the climate resilient, nutritious livelihood production and to support targeted communities to modify their behaviors, adopting practices that increase their ability to adapt to climate impacts													
2.4.4	Utilize existing community-based platforms to build awareness and modify behaviours to prioritize household consumption of a portion of the nutrition- and climate-sensitive livelihoods production.													
2.4.5	Capacity building on food storage, processing and meal preparation of introduced nutritious agri-livelihoods in order to build household food and nutrition security for improved climate resilience.													
Component 3: Enhanced early warning systems and anticipatory action														
Output 3.1: Flood EWS accuracy improved by incorporating more data using existing open source flood models														
3.1.1	Validate Google Flood hub inundation history maps for target counties with community and county stakeholders													
3.1.2	Train county WRA and County KMD on usage of Google Flood Hub EWS and integration in existing communication structures													
Output 3.2: Improved Anticipatory Action triggers defined in updated plans, integrating (child) vulnerability in target counties and nationally														
3.2.1	Integrate the Children Climate Disaster Risk Model (CCDRM) into the national seasonal forecasts issued by Kenya Meteorological Department													

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3.2.2	Review and improve triggers and thresholds for AA in county Anticipatory Action Plans and integrate (child) vulnerability data													
Output 3.3: County budgeting process for Anticipatory Action strengthened														
3.3.1	Assist counties in allocating and reporting a minimum of 2% of the development budget to DRM/AA													
Output 3.4: Early Warning Communication systems improved to effectively reach last-mile communities														
3.4.1	Conduct community HCD immersion session on EWS to understand local EW uptake and understanding													
3.4.2	Develop contextualized SBC Early Warning communication materials for radio, Community Health Promotors (CHPs) and other platforms in local languages													
3.4.3	Train radio stations and CHPs on translation and communciation of timely early warnings of flooding to community													
3.4.4.	Train community health promotors and workforce and community social mobilizers on early warning communication and utilisation/AA													
Component 4: System strengthening for enhanced climate adaptation coordination														
Output 4.1: Enhanced capacity of the Ministry of Water and County Climate Unites in targeted ENRB Counties for inclusive and participatory climate adaptation planning and coordination in the water sector.														
4.1.1	Provide technical capacity building for water sector professionals and stakeholders to enhance climate adaptation coordination.													
4.1.2	Strengthen the capacity of County Climate Change Units (CCUs) in targeted counties for effective coordination of water sector activities.													
Output 4.2: National Adaptation Plan (NAP) updated through an inclusive and participatory process incorporating feedback from key stakeholders, including youth and ENRB County Representatives														
4.2.1	Update Kenya's National Adaptation Plan													
4.2.2	Conduct sectoral workshops to inform NAP including youth and women													

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Output 4.3: Increased capacity of youth in targeted ENRB counties to meaningfully participate in climate adaptation governance and action													
4.3.1	Train youth on developing bankable climate change project proposals to engage them in climate action initiatives.												
4.3.2	Engage 2,000 young people in UNICEFs GreenRising through land restoration of 200 ha												
Output 4.4: A functional and regularly updated climate change and adaptation knowledge platform established and used by the Ministries, County Climate Units, Youth, and other stakeholders in targeted ENRB counties													
4.4.1	Information Collection & Structuring Training (1 physical, 2 virtual sessions)												
4.4.2	Template and Taxonomy Development												
4.4.3	Use of Online Software (HackMD, Power BI, system support)												
4.4.4	Story Dissemination & Communication Training												
4.4.5	Centralized KM Management (QA, dashboard integration, oversight)												
Component 5: Climate resilient Waste management for water quality													
Output 5.1: Enhanced technical capacity of relevant institutions in targeted ENRB Counties for water quality monitoring and enforcement related to waste management.													
5.1.1	Strengthen institutional capacity to monitor pollution levels in domestic water sources, especially during flood events when surface runoff can introduce contaminants into water systems.												
5.1.2	Procure portable water quality monitoring kits												
5.1.3	Develop training module on sustainable waste management and compliance with the sustainable waste management act												
5.1.4	Train government staff and waste handlers (County govt, CBO, contractors) sustainable waste management and compliance with the sustainable waste management act												
Output 5.2: Increased access to climate-resilient waste management infrastructure													

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5.2.1	Establish Material Recovery Facilities (MRFs) to foster circularity in waste management, reducing waste that could clog drainage systems during floods and worsen flood impacts.														
5.2.2	Develop climate resilient waste management site adhering to all 10 criteria of the sustainable waste management act.														
Output 5.3: Improved knowledge and adoption of safe and climate-resilient waste management practices and the importance of water quality monitoring within communities and institutions															
5.3.1	Conduct community education campaigns on the importance of waste segregation at source, recycling, and reuse, emphasizing how improper waste disposal worsens flooding and reduces water availability during droughts.														
Output 5.4: Strengthened organizational capacity of county environmental committees in ENRB Counties to develop, implement, and monitor policies and actions addressing waste-related water pollution.															
5.4.1	Strengthen the capacity of County Environment Committees to identify and address waste-related water pollution, focusing on mitigating flood-induced contamination and safeguarding water resources during droughts.														

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Annex 3 E&S Impact analysis and Management Planning

Summary Description of the Project

Project AWARE (Adaptation for Water Access and Resilience in Ewaso Nyiro River Basin) is an initiative led by UNICEF Kenya in collaboration with various stakeholders to enhance climate resilience in the arid and semi-arid lands (ASALs) of Kenya. The project targets four counties—Wajir, Mandera, Marsabit, and Garissa—where communities face significant water scarcity, environmental degradation, and climate-induced vulnerabilities.

The key objectives of Project AWARE include:

1. Climate-resilient Water Access for Human and Livestock Consumption – Strengthening infrastructure to ensure sustainable water supply.
2. Water Access for Climate-resilient Livelihoods – Supporting agricultural and pastoralist communities with reliable water sources.
3. Enhanced Early Warning Systems and Anticipatory Action – Establishing mechanisms for disaster preparedness and response.
4. Systems Strengthening for Enhanced and Inclusive Climate Adaptation Coordination and Knowledge Management – Improving institutional frameworks for climate governance.
5. Enhanced Water Quality through Climate-resilient Waste Management – Implementing measures to improve water quality and reduce pollution.

Project AWARE aims to build resilience among vulnerable populations, promote sustainable resource management, and ensure long-term adaptation to climate change impacts by addressing these critical areas

Purpose and scope of the compliance report

The objectives of this assignment are to ensure compliance with the adaptation fund ESP for project AWARE proposal by:

a) Providing screening and categorization of activities against national and AF ESP criteria
b) Conducting Environmental and Social Impact Assessment against national and AF ESP criteria
c) Conducting Environmental and Social Impact analysis for activities categorized as A or B in the assessment.
d) Developing an Environmental and Social Management Plan for project AWARE.

Summary of key findings and compliance status

Project AWARE demonstrates strong alignment with the Adaptation Fund Environmental and Social Policy (ESP) principles. All planned activities—including climate-resilient water access, nature-based flood control, and waste management infrastructure—embed environmental sustainability, social inclusion, and human rights safeguards.

Key ESP principles such as access and equity, gender equality, natural habitat protection, pollution prevention, and public health are clearly integrated. Potential risks related to involuntary resettlement and cultural heritage are acknowledged and preventable through participatory planning and screening tools.

Overall, the project upholds the ESP framework by promoting inclusive, climate-resilient development while ensuring compliance with national laws and international safeguards.

Screening and Categorisation

The Project AWARE activities have been screened against Kenyan national environmental legal framework and the Adaptation Fund ESP criteria to ensure alignment with legal and policy frameworks. The screening

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process assesses risks related to water infrastructure, land use, waste management, and social impacts on vulnerable communities.

The Adaptation Fund ESP requires no significant or unjustified adverse environmental or social impacts and compliance with 15 principles including biodiversity conservation, climate change, human rights, gender equity, vulnerable groups, involuntary resettlement, pollution prevention, etc.

Risk Classification of Project AWARE

Project AWARE is classified under one of the following categories in accordance with ESP requirements:

- **Category A**: High-risk projects with potential irreversible adverse impacts.
- **Category B**: Medium-risk projects requiring mitigation measures.
- **Category C**: Low-risk projects with minimal environmental or social impacts.

According to Kenya's national requirements, projects are ranked as high, medium, or low risk guided by Legal Notice No. 31 and 32 of April 2019 on the Environmental Management and Coordination Act (EMCA), Cap 387. These notices outline the Environmental (Impact Assessment and Audit) Regulations, 2003 (amended in 2019), which provide the criteria for screening and classifying projects based on their potential environmental and social impacts.

To screen and categorize these activities under Kenya's national requirements and the Adaptation Fund's Environmental and Social Policy (ESP), the consultant has assessed both the type and scale of environmental and social risks, including impacts on biodiversity, communities, vulnerable groups, and ecosystems. The categorization has been summarized in Tables 5-1 and 5-2 below.

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Table 0-1: Categorization of project risks

	Activity	Likely Impacts/Risks	Category (AF)	Rationale
I.	Construction of sand dams and subsurface dams	Alteration of hydrology, potential community disputes over water access, land use change	B	Site-specific, reversible. Manageable with ESMP. Might need screening for ecosystem/biodiversity impacts.
II.	Construction of water filtration & reverse wells (Managed Aquifer Recharge - MAR)	Risk of groundwater contamination, drilling-related impacts, energy use	B	Risks are technical and manageable with proper design. Nature-based MAR lowers risk.
III.	Drill new boreholes for community supply	Over-abstraction of aquifers, drilling waste, conflict over siting	B	Medium-scale risk, manageable through hydrogeological studies and community engagement.
IV.	Upgrade shallow wells to green energy pumping	Minimal – mainly positive climate and efficiency impact	C	No significant negative impacts; aligns with ESP principles.
V.	Ecosystem restoration (soil, water, fodder, rangelands)	Temporary land use changes, minor biodiversity disturbance	B	Generally positive, though land tenure and stakeholder agreements must be managed.
VI.	Small-scale flood control and riverbank safeguarding (NbS)	Temporary disruption during works, possible changes in water flow	B	Mostly positive and reversible; minor site-specific risks.
VII.	Stormwater harvesting/storage for small-scale irrigation	Siltation, design failures, land ownership conflicts	B	Localized risks; requires technical safeguards and community agreements.
VIII.	Rehabilitation/development of water infrastructure	Potential land acquisition, short-term construction impact	B	Rehabilitations usually lower-risk; new infrastructure needs E&S screening.
IX.	Establishment of Material Recovery Facilities (MRFs)	Odor, waste handling, risk of pollution if mismanaged	A	Could pose significant pollution/public health risks if poorly designed or located.
X.	Waste segregation, recycling & disposal infrastructure	Leachate, odor, public exposure, hazardous materials	A	Potentially irreversible and cumulative pollution risks, especially in flood-prone areas.

Environmental and Social Impact Assessment

The Environmental and Social Impact Assessment (ESIA) for this project adopts an integrated methodology that aligns with both Kenya's national regulatory framework, particularly the Environmental Management and Coordination Act (EMCA) and its subsidiary legislation (Legal Notices 31 and 32 of April 2019), and the Adaptation Fund's Environmental and Social Policy (ESP). The assessment process began with a dual screening exercise to determine the project's risk categorization under both systems, ensuring that the higher risk rating informed the depth of subsequent analysis. A unified Terms of Reference (ToR) guided data collection and stakeholder engagement, incorporating national requirements for baseline biophysical and socio-economic assessments alongside the Adaptation Fund's 15 safeguard principles. The assessment included detailed analyses on impacts to biodiversity, land use, water resources, and air quality, while also addressing human rights, gender equity, indigenous peoples, labor conditions, and cultural heritage. Stakeholder consultations were structured to meet both national public participation standards and the Adaptation Fund's Free, Prior and Informed Consent (FPIC) obligations. The resulting Environmental and Social Management Plan (ESMP) integrates mitigation, monitoring, and reporting measures that satisfy both regulatory regimes, thereby enabling a streamlined approval process and ensuring robust environmental and social safeguards throughout the project lifecycle.

Following are findings of the ESIA conducted for the project against 15 ESP principles:

1. **Compliance with the Law:** All project activities will comply with Kenya's legal framework including:

    - The Environmental Management and Coordination Act (EMCA), 1999 (rev. 2015), which mandates Environmental and Social Impact Assessments (ESIAs) and Environmental Management Plans (EMPs) for development projects.
    - The Water Act, 2016, guiding water use, protection of water resources, and service provision.

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- The Public Health Act and Occupational Safety and Health Act (OSHA), 2007 to ensure health and safety compliance during implementation.
- For Output 1.3 (groundwater infrastructure), ESIAs will be prepared in line with NEMA guidelines, and approvals obtained before construction begins, ensuring safety and environmental sustainability.

2. **Access and Equity:** The Constitution of Kenya (2010) guarantees equal access to public services and development opportunities under Article 43. The project ensures fair and inclusive access to water, food security, and climate-resilient infrastructure. It promotes community-led planning and validation processes to ensure that marginalized and underserved populations benefit equitably. Outputs like 2.4 explicitly target vulnerable households to ensure improved nutrition and access to diversified livelihoods.

3. **Marginalized and Vulnerable Groups:** Guided by Article 56 of the Constitution, which affirms affirmative action for marginalized groups, the project prioritizes the inclusion of vulnerable groups such as women, children, persons with disabilities, and communities in arid and semi-arid regions. Project AWARE activities are designed to address the unique vulnerabilities of these groups by enhancing their adaptive capacities and involving them in all stages of the project lifecycle. Participatory planning and inclusive consultations will ensure their needs and voices are central.
Output 2.4, which improves access to diversified diets for vulnerable households, directly supports equity and reduces food insecurity among at-risk groups.

4. **Human Rights:** The project upholds international human rights standards by embedding principles of dignity, participation, transparency, and accountability. It avoids any activities that could lead to discrimination or rights violations. Free, Prior and Informed Consent (FPIC) will be sought wherever applicable, particularly for Indigenous and local communities.
For instance, Output 1.1 strengthens local human resource capacity, empowering community members to actively participate in water management, reinforcing their right to development.

5. **Gender Equity and Women's Empowerment:** Gender-responsive design and implementation are integral to the project. Specific outputs aim to strengthen women's participation in decision-making, build technical capacity, and increase their access to productive resources (e.g., Output 2.4 and 4.3). Gender-disaggregated data will inform activities, and the project will monitor gender equity indicators to track progress.

6. **Core Labour Rights:** The project is committed to fair labor practices, including the right to collective bargaining, freedom from child labor, equal pay for equal work, and safe working conditions. Contractors and implementing partners will be required to comply with national labor laws and international conventions, especially those of the ILO.

During infrastructure work under Output 5.2 (waste management facilities), fair wages, safe working conditions, and non-discrimination policies will be enforced through contractual obligations.

7. **Indigenous Peoples:** In areas with Indigenous populations, such as pastoralist communities in Marsabit or Wajir, FPIC will be followed. Traditional water management practices will be respected and potentially integrated into Output 1.2, which uses nature-based recharge methods.

8. **Involuntary Resettlement:** For project AWARE, no involuntary resettlement is anticipated. Infrastructure siting under Output 1.3 and 2.2 will be based on community validation to avoid displacement.

The project is designed to avoid involuntary resettlement, and infrastructure siting and rangeland restoration will be community-validated to avoid any risk of physical or economic displacement.

9. **Protection of Natural Habitats:** The project supports ecological integrity. Output 2.1, which focuses on rangeland restoration, uses community-led plans to rehabilitate degraded ecosystems while avoiding further encroachment on sensitive habitats.

It supports the protection and rehabilitation of natural ecosystems, especially through Nature-based Solutions (NbS) and rangeland restoration. Activities will be carefully screened to avoid any significant adverse impacts on sensitive ecosystems, and project design emphasizes biodiversity-friendly practices.

10. **Conservation of Biological Diversity:** Biodiversity is enhanced through use of climate-smart agricultural practices (Output 2.3) that promote crop diversification and soil regeneration, reducing pressure on native ecosystems and improving resilience.

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Restoration of degraded rangelands and promotion of sustainable agricultural practices will contribute to the conservation of biological diversity. No activity is expected to take place within or near protected areas, and biodiversity impact assessments will be conducted if relevant. Agroecological approaches will be used to minimize harm to native species.

11. **Climate Change:** All project AWARE components are designed for climate resilience. For instance, Output 3.1, which includes anticipatory action plans, directly helps reduce the negative impacts of floods and droughts by enabling early responses that protect lives and assets.

The project contributes positively to pollution control through waste segregation, enforcement of water pollution regulations, and circular economy principles. Energy-efficient technologies, water-saving practices, and safe waste disposal will be promoted to enhance resource efficiency and reduce environmental footprints.

12. **Pollution Prevention and Resource Efficiency:** The project contributes positively to pollution control through waste segregation, enforcement of water pollution regulations, and circular economy principles. Waste management activities under Output 5.2 and 5.3 promote safe disposal, recycling, and community awareness. Energy-efficient technologies, water-saving practices, and safe waste disposal will be promoted to enhance resource efficiency and reduce environmental footprints.

13. **Public Health:** Safe water access (Output 1.3 and 2.2) and improved waste management (Output 5.2) will reduce disease transmission, particularly waterborne and sanitation-related illnesses affecting children and vulnerable groups

14. **Physical and Cultural Heritage:** No activity is expected to affect cultural or archaeological sites. Prior to infrastructure development, screening will be conducted to ensure that sites of cultural significance are identified and protected. Chance find procedures will be established in case of unexpected discoveries.

Further, stakeholder engagement and community consultations during planning (e.g., for Outputs 1.3 and 2.2) will screen for cultural heritage sites.

15. **Lands and Soil Conservation:** Project AWARE activities promote sustainable land use and soil conservation, particularly through rangeland restoration and regenerative agriculture. Infrastructure works will include erosion control measures and ensure that construction does not degrade land quality. Community training in sustainable practices will support ongoing stewardship of soil resources.

For example, Land use planning and restoration under Output 2.1 will enhance soil stability and reduce erosion.

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Environmental and Social Impact Analysis for Category A and B Activities

Project AWARE is designed to enhance climate resilience and sustainable development across Garissa, Mandera, Wajir, and Marsabit counties through a range of targeted interventions. The project is expected to generate significant positive impacts—such as improved livelihoods, healthier ecosystems, and enhanced access to water and sanitation services. At the same time, the project acknowledges the possibility of adverse impacts, particularly if interventions are not carefully planned or implemented in close collaboration with local communities. These may include risks related to land use changes, or potential impacts on natural and cultural heritage. As such, Project AWARE is committed to applying robust environmental and social safeguards, guided by the Adaptation Fund's Environmental and Social Policy (ESP), to maximize benefits and minimize harm.

Positive Impacts

Through integrated interventions focused on climate-resilient water infrastructure, sustainable waste management, ecosystem restoration, and green energy solutions, the project will contribute significantly to community well-being, environmental conservation, and equitable access to essential services. Below is an outline of the anticipated positive impacts associated with the project:

- Communities will benefit from improved access to water throughout the year through sand dams, boreholes, shallow wells, and recharge systems like Managed Aquifer Recharge (MAR).
- Nature-based flood control and ecosystem restoration efforts will help protect villages and farms from the impacts of floods and droughts.
- Activities such as reseeding, protecting watersheds, and rehabilitating grazing lands will bring back native plants, support soil health, and strengthen local ecosystems.
- By introducing better waste segregation, Material Recovery Facilities (MRFs), and filtration wells, communities will experience cleaner environments and safer drinking water.
- Improved land use and better management of stormwater will reduce erosion, protecting homes and farmland from degradation.
- With cleaner water and reduced pollution, families will face fewer waterborne diseases and health hazards related to waste.
- Women and girls will spend less time fetching water and will have more opportunities to lead in recycling, agriculture, and local water committees.
- Special attention will be given to ensure that pastoralists, the urban poor, women, youth, and the elderly receive fair and prioritized access to project services.
- Indigenous communities will be actively involved, with their knowledge, traditions, and sacred places fully respected during project planning and implementation.
- The project will create green job opportunities in areas such as water infrastructure, waste recycling, land restoration, and environmental conservation.
- Reliable water for irrigation and restored rangelands will support food production and improve incomes for small-scale farmers.
- Waste will be seen as a valuable resource, as recycling and segregation activities reduce the need for landfills and generate local benefits.
- Community members will receive training in climate adaptation, sustainable farming, water governance, and environmental stewardship.
- Project activities will be carried out through strong partnerships between counties, community-based organizations, water user groups, and national institutions.
- All interventions will follow Kenyan environmental, land, labour, and water laws, and uphold the Adaptation Fund's Environmental and Social Policy (ESP), ensuring communities are protected and empowered.

Category A activity Risks

This section provides a detailed analysis for activities categorized as A or B. Out of the nine types of activities, two have been classified under category A, in line with the 2nd Schedule of the EMCA 1999 (as amended in 2015). The two include: Establishment of Material Recovery Facilities (MRFs); and Waste segregation, recycling & disposal infrastructure.

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1. Establishment of Material Recovery Facilities (MRFs)

Occupational Health and Safety Hazards: Workers may be exposed to hazardous materials (e.g., broken glass, sharps, biohazardous waste), leading to injury or illness. This impact is of high significance due to its direct effects on human health and workplace safety. The magnitude of this risk ranges from medium to high depending on the scale of operations and the nature of waste processed. Sensitivity is also high, particularly in areas with limited healthcare infrastructure or where workers may not be adequately trained or equipped to handle hazardous waste.

Mitigation Measures

- Provide Personal Protective Equipment (PPE) and safety training.
- Ensure proper segregation of hazardous waste before recovery processes.
- Implement Standard Operating Procedures (SOPs) for handling materials.

Air and Odor Pollution: Decomposing organic materials and dust from sorting activities can lead to poor air quality and foul odors, impacting both workers and surrounding communities. This risk is considered to have medium significance as it primarily affects environmental comfort and respiratory health. The magnitude is moderate but can escalate in larger facilities or those near residential zones. Sensitivity varies, but it tends to be high in densely populated or vulnerable neighborhoods where air quality is already compromised.

Mitigation measures

- Regular waste collection and sorting to avoid buildup.
- Install proper ventilation and air filtration systems.
- Schedule odour-emitting tasks during off-peak hours and away from residential zones.

Contamination of Soil and Water Resources: Leachate from waste materials may seep into the soil or nearby water bodies. The significance of this impact is high due to the potential for long-term environmental damage and water resource degradation. The magnitude is also high, especially in locations with shallow water tables or where proper containment infrastructure is lacking. Sensitivity is high in communities that rely on local water sources for drinking or agriculture.

Mitigation measures

- Design MRFs with impermeable flooring and proper drainage systems.
- Collect and treat leachate before discharge.
- Conduct regular environmental monitoring.

Social Displacement and Land Use Conflict: Establishing MRFs may lead to disputes over land use, especially if the site was previously used informally or by vulnerable groups (e.g., informal waste pickers). This social risk carries medium to high significance, as it can disrupt livelihoods and lead to community opposition. The magnitude of the impact is variable, depending on the scale of displacement and the site's prior use. Sensitivity is high in contexts where marginalized or vulnerable groups are at risk of being excluded or relocated without adequate consultation or compensation.

Mitigation measures:

- Engage stakeholders through Free, Prior, and Informed Consent (FPIC) processes.
- Provide alternative livelihoods or integration programs for affected waste pickers.
- Conduct a Social Impact Assessment (SIA) before site selection.

Gender and Social Inclusion Risks: MRF operations may unintentionally exclude women, youth, or persons with disabilities from employment or decision-making. This impact is of medium significance as it can perpetuate social inequality and reduce the potential for inclusive development. The magnitude of exclusion is moderate but can be significant if not addressed proactively. Sensitivity is high, particularly in settings where gender disparities and social exclusion are already entrenched.

Mitigation measures

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- Ensure inclusive hiring practices and equal opportunity policies.
- Provide gender-sensitive sanitation facilities and workspaces.
- Conduct gender and social inclusion training for staff.

Child Labor or Exploitation Risk: There is a risk of engaging underage workers, especially in areas with informal recycling sectors. This risk is of high significance due to its ethical, legal, and reputational implications. While the magnitude may be moderate depending on local context, the sensitivity is extremely high, as children are a protected and vulnerable population whose involvement in hazardous work is strictly prohibited by international standards.

Mitigation measures

- Enforce strict hiring policies aligned with child protection standards.
- Partner with community organizations to raise awareness on child rights and labour laws.

2. Waste Segregation, Recycling, and Disposal Infrastructure

Occupational Health and Safety Hazards: There is a significant risk to the health and safety of workers involved in waste segregation and recycling, especially when handling unsorted or improperly segregated waste. Exposure to sharp objects, toxic substances, and biological contaminants can lead to injuries or illnesses. The magnitude of this risk is high due to the daily interaction with potentially hazardous materials. Sensitivity is also high, particularly in communities with limited access to healthcare.

Mitigation measures

- Provision of adequate PPE,
- Regular health and safety training,
- Installation of handwashing stations and first-aid kits on site.
- Implementation of SOPs for waste handling and emergency response protocols

Environmental Contamination (Soil, Water, and Air): Improperly managed segregation and disposal facilities can lead to leachate seepage, air pollution from open burning, and waterway contamination. This risk is high in significance due to its long-term impact on ecosystems and public health. The magnitude is moderate to high, depending on waste volume and facility location, and sensitivity is high in areas close to agricultural land, wetlands, or residential zones.

Mitigation Measures

- Construct facilities with lined containment areas and drainage systems,
- Regular monitoring of effluents, and prohibition of open burning.
- Adoption of engineered landfill or composting methods

Social Conflicts and Livelihood Disruption: There is a moderate to high risk of social tension if the infrastructure leads to the displacement of informal waste pickers or excludes vulnerable groups. The significance is moderate, but the sensitivity is high, particularly in urban areas where informal recycling is a key livelihood source. The magnitude of the risk increases with the scale of infrastructure implementation.

Mitigation measures

- Stakeholder consultations,
- Integration of informal workers into formal systems through training and cooperative models, and
- Ensuring equitable access to employment opportunities created by the infrastructure.

Poor Community Participation and Awareness: The success of segregation and recycling heavily relies on community participation. A moderate risk exists where awareness is low, leading to contamination of segregated waste streams and low recycling rates. The significance is moderate, magnitude low to moderate, and sensitivity moderate, particularly in rural or peri-urban areas.

Mitigation measures

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- Public awareness campaigns,
- School education programs,
- Community-based waste management incentives, and provision of clearly labeled bins to support effective segregation at the source.

Child Labour and Gender Disparities: In unregulated recycling environments, there is a moderate risk of child labour and exclusion of women from safer or better-paid positions. The significance is high from a human rights perspective, with moderate magnitude depending on local labour practices and high sensitivity in low-income or vulnerable communities.

Mitigation measures

- Implementing strict hiring protocols aligned with national and international labour standards,
- offering gender-sensitive work environments, and
- establishing grievance redress mechanisms.

Odour and Noise Pollution: Poorly managed disposal sites and recycling facilities may generate unpleasant odours and excessive noise, disturbing local communities. This risk is low to moderate in significance, depending on proximity to residential areas. The magnitude is moderate, while sensitivity is high in densely populated or environmentally sensitive areas.

Mitigation measures

- Proper facility siting,
- Enclosing noisy equipment,
- Regular waste processing to prevent build-up,
- Planting buffer vegetation to reduce noise and odour dispersion.

Fire Hazards and Chemical Spills: The presence of flammable materials or improper storage of hazardous waste increases the risk of fires and chemical spills. This has a high significance, with moderate to high magnitude depending on the type of waste handled. Sensitivity is high in urban or semi-urban locations.

Mitigation measures

- Fire safety planning,
- Installation of extinguishers and alarms,
- Employee training, and

- Establishment of secure storage for chemicals and combustibles.

Category B Activities

This section discusses the risks based on the activities classified under category B. The activities below have been classified under category B:

- Construction of sand dams and subsurface dams
- Construction of water filtration & reverse wells (Managed Aquifer Recharge - MAR)
- Drill new boreholes for community supply
- Ecosystem restoration (soil, water, fodder, rangelands)
- Small-scale flood control and riverbank safeguarding (NbS)
- Stormwater harvesting/storage for small-scale irrigation
- Rehabilitation/development of water infrastructure

1. Construction of Sand Dams and Subsurface Dams

The construction of sand and subsurface dams may pose moderate environmental risks, primarily linked to disturbance of riverine ecosystems, sedimentation, and disruption of natural water flow, which may impact downstream water users. The magnitude of the impact is moderate due to the physical alteration of streambeds,

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while the sensitivity is high in areas reliant on natural water flows. The significance is moderate to high if downstream users are not adequately considered.

Mitigation measures

- Conducting hydrological assessments before dam construction,
- Ensuring that dam design allows for ecological water flow, and
- Implementing community consultations with upstream and downstream users.
- Restoration of vegetation and stabilization of riverbanks post-construction will further reduce environmental disruption.

2. Construction of Water Filtration and Reverse Wells (Managed Aquifer Recharge - MAR)

The risks associated with MAR systems are moderate in significance due to potential contamination of aquifers if poorly managed. The magnitude is low to moderate depending on the scale, but sensitivity is high in areas where communities rely solely on groundwater. Improper siting or use of unfiltered recharge water could introduce pollutants into the aquifer.

Mitigation measures

- Prior water quality testing,
- Use of pre-filtration systems, and
- Careful siting of recharge structures away from potential contamination sources.
- Continuous monitoring of water quality and community capacity building for maintenance are also key to minimizing risks.

3. Drilling New Boreholes for Community Supply

Drilling boreholes poses a moderate risk to groundwater resources if over-abstraction or salinization occurs. The magnitude is medium due to the potential for cumulative impacts, especially in arid regions. The sensitivity is high in areas with limited groundwater reserves.

Mitigation Measures

- Conducting hydrogeological surveys to assess aquifer capacity,
- Establishing abstraction limits, and
- Registering boreholes for monitoring.
- Involving local water user associations to manage and monitor use ensures sustainability and equitable access.

4. Ecosystem Restoration (Soil, Water, Fodder, Rangelands)

While ecosystem restoration is generally positive, poorly implemented interventions could lead to moderate environmental and social risks. For instance, introducing non-native species or excluding traditional grazing practices can disrupt local ecosystems or livelihoods. The magnitude is low to moderate, sensitivity varies depending on the local ecosystem, and the significance is moderate if communities are not involved.

Mitigation measures

- Participatory planning with local communities and experts,
- Using native species, and
- Aligning restoration with traditional land-use practices.
- Regular monitoring and adaptive management will ensure long-term success.

5. Small-scale Flood Control and Riverbank Safeguarding (Nature-based Solutions - NbS)

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Flood control structures, even when nature-based, can carry moderate risks if they alter hydrology, displace flora/fauna, or affect community land. The magnitude is moderate, particularly during the construction phase, while sensitivity is high in riparian and agriculturally productive areas. The significance of these risks can be high without proper planning.

Mitigation measures

- Integrating natural materials and processes,
- Designing interventions that mimic natural floodplains, and
- Conducting environmental impact assessments.
- Community involvement and local knowledge should guide design and implementation.

6. Upgrading of Shallow Wells to green energy Pumped Systems

Groundwater Over-Abstraction Risk: The transition to green energy pumping systems, such as solar-powered pumps, may lead to increased extraction rates, potentially resulting in over-abstraction of groundwater. This poses a risk of aquifer depletion, especially in areas with low recharge rates. The significance of this risk is high, as it affects long-term water availability. The magnitude is moderate to high, depending on the number of upgraded wells and pumping efficiency. The sensitivity is high in arid and semi-arid regions with limited groundwater resources.

Mitigation measures

- Conduct hydrogeological assessments before upgrading each well to determine safe yield levels.
- Install flow meters and regulate pumping hours to prevent overuse.
- Encourage community-based monitoring of groundwater levels and introduce water conservation awareness programs.

Energy System Failure or Incompatibility Risk: Green energy systems (e.g., solar PV pumps) may malfunction due to poor installation, inadequate maintenance, or incompatibility with local environmental conditions (e.g., low sunlight, high dust). The significance of this risk is moderate, as failure would interrupt water access. The magnitude is low to moderate, depending on equipment quality and maintenance routines. The sensitivity is moderate, especially in remote or underserved communities relying solely on the system.

Mitigation measures

- Procure high-quality, weather-resistant components.
- Train local technicians on system operation and maintenance.
- Ensure design accounts for local solar irradiance patterns and includes battery backup where feasible.

Contamination of Water Supply: Upgrading wells may disturb existing well structures or expose them to surface contaminants, especially during construction or retrofitting. Without proper sealing or drainage, there is a risk of faecal or chemical contamination. The significance of this risk is high, due to potential health impacts. The magnitude is moderate, and sensitivity is high in communities with no alternative water sources or high child morbidity rates.

Mitigation measures

- Apply sanitary sealing and construct aprons with proper slope to direct runoff away.
- Integrate water quality testing before and after the upgrade.
- Provide hygiene education alongside system commissioning.

Land Use and Conflict Risk: Installation of solar panels and system infrastructure may require land acquisition or reallocation, leading to potential land disputes, especially in communal or informally owned areas. The significance is moderate, the magnitude is moderate, and sensitivity is high in densely populated or land-scarce regions.

Mitigation measures

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- Conduct inclusive stakeholder consultations prior to siting, following Free, Prior, and Informed Consent (FPIC) principles.
- Use existing well footprints and minimize additional land requirements.
- Document land use agreements transparently.

Social Exclusion and Gender Access Barriers: Without inclusive planning, women, youth, or vulnerable groups may have limited influence over system management or access to water resources. The **significance** is **moderate**, the magnitude is moderate, and sensitivity is **high** in areas with existing gender or social disparities.

Mitigation measures

- Integrate gender-sensitive planning and ensure representation of women and youth in water user committees.
- Provide separate access points if necessary to accommodate different user needs, and ensure time-saving benefits are equitably distributed.

E-Waste and Equipment Disposal Risk: The use of solar energy systems introduces a long-term risk related to the disposal of solar panels, batteries, and inverters, which can contribute to environmental degradation if not managed properly. The significance is low to moderate, the magnitude is low, but sensitivity increases over time.

Mitigation measures

- Develop an end-of-life equipment management plan in partnership with suppliers.
- Promote extended producer responsibility (EPR) and link communities with certified recyclers.
- Educate users on safe disposal practices.

7. Rehabilitation/Development of Water Infrastructure

Rehabilitation activities, though less invasive than new construction, carry moderate risks such as temporary disruption of water supply, occupational hazards, or inappropriate technology choices. The magnitude is moderate, sensitivity depends on dependency on the water source, and the significance is moderate to high where water access is critical.

Mitigation measures

- Conducting rehabilitation during low-demand periods,
- Ensuring safety protocols for workers,
- Selecting technologies that are climate-resilient and community-appropriate.
- Inclusion of gender-sensitive and inclusive infrastructure features is also essential.

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Environmental and Social Management Plan (ESMP)

Institutional responsibilities for implementation

UNICEF will establish a dedicated project management structure for the AWARE project to ensure its smooth and efficient implementation. This will include setting up a Project Coordination/Management Unit, which will incorporate, among others, an Environmental and Social Safeguards Specialist responsible for overseeing the implementation of sub-project ESMPs.

At the sub-project or county level, a Project Implementation Unit may also be established, with a designated Environmental and Social (E&S) focal point to manage ESMP implementation locally.

Contractors engaged in sub-projects will include E&S personnel within their construction teams to carry out ESMP activities and regularly report progress to the project management teams.

Reporting and compliance tracking mechanisms

Each ESMP identifies monitoring objectives and specifies the type of monitoring, with linkages to the impacts and risks assessed in the ESA and the mitigation measures described in the ESMP.

Specifically, the monitoring section of the ESMP provides: (a) specific description and technical details of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; and (b) monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.

To support timely and effective implementation of E&S project components and mitigation measures, the ESMP will draw on the County E&S focal points at the project AWARE staff to monitor the impacts at national level while coordinating with the County PIUs' E&S focal points.

Contractors will be required to routinely submit ESHS performance reports that will assist in the monitoring of their activities and cross-checking them against the ESMPs. Capacity building will be undertaken to increase the capacity at County level to have in place social accountability committees (SACs), community project and GM committees to undertake day-to-day monitoring and reporting to the relevant focal points at the PIUs on the progress and implementation.

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Construction of sand dams and subsurface dams

Risk	Impacts Identified	Mitigation Measures	Monitoring Measures	Monitoring Indicators	Frequency of Monitoring	Responsibility /Technical resources required
Disturbance of Riverine Ecosystems and Natural Water Flow	Alteration of streambed structure, disruption of aquatic life, impact on downstream water access	•Conduct hydrological assessments prior to construction •Design dams to allow for ecological water flow •Engage communities upstream and downstream •Restore vegetation and stabilize riverbanks after construction	•Site inspections, •hydrological monitoring, •community feedback sessions	•Presence of ecological flow provisions •Number of community consultations held •Percentage of riverbank vegetation restored	•Hydrological- Before and after construction Community consultations- Quarterly •Vegetation checks- Bi-annually	•Hydrologist Environmental Specialist •Community Liaison Officer

Construction of water filtration and reverse wells for managed aquifer recharge (MAR)

Risk	Impacts Identified	Mitigation Measures	Monitoring Measures	Monitoring Indicators	Frequency of Monitoring	Responsibility / Technical resources required
Aquifer Contamination from Poorly Managed Recharge	•Pollution of groundwater sources used for domestic and agricultural use, potential public health risks	• Conduct prior water quality testing •Install pre-filtration systems •Site recharge structures away from latrines, dumpsites, or other contamination sources •Train communities in operation and maintenance •Establish water quality monitoring protocols	•Periodic water sampling and lab analysis •Regular inspections of recharge and filtration systems •Community feedback and training assessments	•Water quality parameters (e.g., turbidity, E. coli, nitrates) within safe limits •Number of maintenance checks completed •Number of community members trained	•Water quality testing: Quarterly •System inspections: Monthly •Community training: Bi-annually	•Hydrogeologist •Water Quality Officer •Community Mobilizer

Drilling of new boreholes for community water supply

Risk	Impacts	Mitigation Measures	Monitoring	Monitoring	Frequency of	Responsibility/

	Identified		Measures	Indicators	Monitoring	Technical resources required
Over-abstraction and Groundwater Depletion	•Depletion of groundwater resources, •Drying of nearby wells, •Reduced water availability during dry seasons	•Conduct hydrogeological surveys prior to drilling •Establish abstraction limits based on aquifer yield – •Register and license all boreholes - Form or engage local water user associations to manage water use	•Monitor abstraction rates and water table levels •Track borehole registration and permit compliance • Collect usage records through water user associations	•Number of boreholes with abstraction limits • Water levels remain within sustainable range • Compliance with water use permits - Functionality of user associations	•- Water level monitoring: Monthly - Abstraction records: Quarterly - Compliance audit: Annually	•- Hydrogeologist - Water Resources Authority (WRA) - Community Water User Associations
Salinization and Water Quality Deterioration	•Poor water quality leading to health risks or unfit water for agriculture and livestock	•Water quality testing during and after drilling - Avoid drilling in saline-prone zones - Install filtration or treatment systems if needed	•- Water sampling and lab analysis - Community reporting on water taste/smell - Maintenance logs for treatment systems	•- Water salinity and pH within safe limits - Number of complaints logged and resolved - Maintenance schedule adhered to	•- Water testing: Bi-annually - Community check-ins: Quarterly	•- Public Health Officer - Local Water Committees

Upgrading of shallow wells to green energy pumped systems

Risk	Impacts Identified	Mitigation Measures	Monitoring Measures	Monitoring Indicators	Frequency of Monitoring	Responsibility/ Technical resources required
Over-abstraction of Shallow Aquifers	Decline in water table, drying of nearby wells, reduced ecosystem support	- Conduct water yield assessment before upgrade - Establish abstraction limits for each system - Train communities on sustainable use	- Monitor water abstraction rates and aquifer levels - Keep community records of usage - Audit compliance with abstraction limits	- Stable water levels - Number of systems adhering to abstraction limits - Community reporting on water sufficiency	- Water level checks: Monthly - Usage records: Quarterly	- Water Resources Authority (WRA) - Community Water User Associations
Energy System Malfunction or Inefficiency	Interruption of water supply, community frustration, financial losses	- Use certified green energy equipment (e.g. solar pumps) - Train local technicians for operation and maintenance - Schedule routine maintenance checks	- Regular inspection of pumps and panels - Log operational hours and maintenance activities	- Number of systems functioning without breakdown - Maintenance logs up to date - Trained local technicians available	- System inspection: Monthly - Maintenance: Quarterly	- Contractor/Installer - Local Water Management Committees
Improper Siting of Solar Infrastructure	Land disputes, shading or vandalism of equipment	- Conduct community consultations for siting - Install panels in secure, publicly accepted areas - Use fencing and signage	- Site approval documentation - Reports of vandalism or conflict - Periodic community feedback sessions	- No. of reported disputes or vandalism cases - Proper fencing and community agreement visible	- Site monitoring: Quarterly - Feedback sessions: Bi-annually	- Community Leaders - Local Government - Contractor

Ecosystem restoration: soil and water conservation, stormwater harvesting, fodder/rangeland reseeding

Risk / Impact Identified	Mitigation Measures	Monitoring Measures	Monitoring Indicators	Monitoring Frequency	Responsibility/ Technical resources required
Disruption of local ecosystems due to introduction of non-native species	- Use only native or locally adapted species	- Field verification of species planted- Cross-check with local biodiversity records	- percentage of species used that are native	Quarterly	PIU, MoE, Community Committees
Loss of traditional grazing access and local livelihoods	- Align restoration plans with traditional land use practices- Engage local pastoralists in planning	- Field observation of restored grazing areas- Feedback from herders and land users	- number of community consultations held- Area accessible to grazing	Bi-annually	PIU, Local Authorities, Community Elders
Reduced community ownership and sustainability of interventions if not involved in planning	- Conduct participatory planning with community and technical experts	- Review of meeting minutes and attendance- Post-activity community satisfaction surveys	- Stakeholder meeting reports- Level of community satisfaction	Quarterly	PIU, Local NGOs, County Governments
Degradation due to poor management or lack of follow-up	- Implement adaptive management through regular monitoring and feedback loops	- Inspection reports- Satellite imagery or photographic documentation- Soil/fodder quality sampling	- Restoration success rates- Observed degradation signs	Semi-annually	MoE, PIU, Community Monitoring Teams

Small-scale flood control and riverbank protection using nature-based approaches

Risk / Impact Identified	Mitigation Measures	Monitoring Measures	Monitoring Indicators	Monitoring Frequency	Responsibility/Technical resources required
Disruption of hydrology or natural floodplain processes	- Design structures to mimic natural floodplains- Avoid hard engineering where unnecessary- Conduct EIAs before implementation	- Review of floodplain modelling reports- Field inspection during and after rainfall events	- Functionality of NbS structures- Evidence of altered water flow patterns	Quarterly during implementation; Bi-annually post-construction	PIU, Water Resources Authority (WRA), MoE
Loss or displacement of riparian flora/fauna	- Use native vegetation- Avoid construction during breeding/nesting seasons- Buffer zones around sensitive habitats	- Biodiversity assessments pre- and post-intervention- Visual inspections	- Species richness/diversity- Habitat condition	Bi-annually	PIU, KWS, Local Environmental NGOs
Loss of access to agricultural or communal land	- Community consultations prior to site selection- Clearly define intervention boundaries and access routes	- Meeting records- Mapping of access points and buffer zones	- Number of grievances filed- Land use maintained	Quarterly	PIU, County Lands Office, Community Leaders
Poor community uptake and maintenance of NbS structures post-construction	- Community-based planning and training- Use local materials and labor to build ownership	- Training attendance sheets- Community follow-up reports	- Number of locals involved- Maintenance frequency	Quarterly	PIU, Local CBOs/NGOs, Community Water Committees

Development/rehabilitation of stormwater harvesting & groundwater irrigation infrastructure

Risk / Impact Identified	Mitigation Measures	Monitoring Measures	Monitoring Indicators	Monitoring	Responsibility/Technical

				Frequency	resources required
Temporary disruption of water supply during rehabilitation	- Schedule works during low-demand periods- Provide alternative temporary water sources where feasible	- Review of rehabilitation work plan- Community feedback surveys	- Number of complaints filed- Availability of alternative supply	Weekly during construction	PIU, Water Service Providers, County Government
Occupational health and safety risks to workers	- Implement safety protocols (e.g., PPE, site supervision)- Conduct worker safety training	- Safety audit reports- Record of safety briefings and PPE distribution	- Number of incidents reported- % of workers using PPE	Weekly	Contractor, PIU, Ministry of Labour
Use of inappropriate or unsustainable technology	- Choose climate-resilient and community-preferred technologies- Ensure spare parts availability and technical support	- Technical design review- Consultations with local water user associations	- Functionality rate of infrastructure- Technology adaptability	At key design stages + post-installation	PIU, Ministry of Water, Local Technical Experts
Exclusion of women, persons with disabilities (PWDs), or other vulnerable groups from design/use	- Conduct gender-sensitive consultations- Incorporate inclusive design features (e.g., ramps, child-friendly access, multiple tap heights)	- Design review reports- Field verification of inclusive features	- % of infrastructure with inclusive features- Satisfaction levels by gender and group	Quarterly	PIU, County Gender Office, Local NGOs

Establish Material Recovery Facilities (MRFs)

Risk	Mitigation Measures	Monitoring Measures	Monitoring Indicators	Frequency of Monitoring	Responsibility/Technical resources required
Occupational Health and Safety Hazards	•Provide PPE and training Segregate hazardous waste •Implement SOPs	•Safety audits •Training records review	•Percentage of staff with PPE •Percentage of reported incidents •Number of staff trained	Monthly	MRF Manager, Health & Safety Officer
Air and Odor Pollution	•Timely waste sorting •Install ventilation & filters •Schedule odor tasks off-peak	•Air quality tests •Odor complaint logs	•PM and VOC levels •Number of odor complaints	Quarterly	MRF Operations Manager, Environmental Officer
Contamination of Soil and Water Resources	•Use impermeable floors & drainage •Collect/treat leachate • Monitor environment	•Water and soil sampling Leachate management logs	•Presence of contaminants Leachate treatment efficiency	Biannually	Environmental Officer, Site Engineer
Social Displacement and Land Use Conflict	•Conduct FPIC •Offer livelihood alternatives •Carry out SIA	•Stakeholder engagement reports SIA documentation	•Number of grievances logged/resolved • Participation rate in consultations	Prior to construction & biannual updates	Social Safeguards Officer, Local Authorities
Gender and Social Inclusion Risks	•Inclusive hiring • Gender-sensitive facilities •Staff sensitization training	•HR audits •Facility inspection Training attendance logs	•Percentage of women/PWDs employed •number of trainings held	Quarterly	HR Manager, Gender Specialist

Child Labour or Exploitation Risk	•Enforce strict age verification • Collaborate with child protection groups	•Employment records review •Community outreach reports	•Number of underage labor violations •number of community sessions held	Monthly	HR Officer, Child Rights NGO

Infrastructure for waste segregation, recycling, and sustainable disposal

Risk	**Impacts Identified**	**Mitigation Measures**	**Monitoring Measures**	**Monitoring Indicators**	**Frequency of Monitoring**	**Responsibility/Technical resources required**
Occupational Health and Safety Hazards	Injuries, infections, and exposure to toxic waste	Provide PPE train workers install handwashing and first-aid stations, implement SOPs	Routine safety audits, medical screenings	Number of incidents, PPE usage rate, training records	Monthly	Facility Manager, H&S Officer
Environmental Contamination	Soil and water pollution, air pollution from open burning	Lined containment areas, drainage, effluent monitoring, no open burning, engineered landfill use	Effluent sampling, air quality checks, visual inspections	Leachate quality, odour presence, visible pollution	Quarterly	Environmental Officer, Local Authority
Social Conflicts and Livelihood Disruption	Displacement of informal workers, loss of income	Stakeholder consultations, training, integration programs	Consultation logs, employment tracking	Number of integrated informal workers, complaints received	Quarterly	Social Specialist, NGO Partner
Poor Community Participation and Awareness	Low segregation rates, mixed waste disposal	Awareness campaigns, education programs, labelled bins	Survey participation, community feedback, campaign reports	percentage increase in segregation rates, campaign reach	Bi-annually	Community Liaison Officer, Ward Administrator
Child Labour and Gender Disparities	Child labour, exclusion of women	Enforce hiring protocols, gender-inclusive workspaces, grievance mechanisms	Worker demographics, grievance records, HR audits	Gender ratio, child labour cases, complaint resolution rate	Monthly	HR Manager, Labour Officer
Odour and Noise Pollution	Nuisance to communities	Site facilities appropriately, enclose equipment, vegetative buffers	Noise and odour level checks, community feedback	Decibel levels, odour complaints, vegetation health	Quarterly	Environmental Officer, Facility Supervisor
Fire Hazards and Chemical Spills	Fires, chemical exposure risks	Fire safety plans, extinguishers, staff training, secure chemical storage	Fire drill records, inspection logs, spill response reports	Number of fire drills, equipment maintenance logs	Monthly	Facility Safety Officer, Fire Department

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Annex 4 Grievance Redressal mechanism

Requirements of the ESP Adaptation Fund on Grievance Mechanism

Under the Environmental and Social Policy (ESP) of the Adaptation Fund, all projects and programmes are required to establish an effective Grievance Mechanism to ensure accountability, inclusivity, and the fair treatment of all stakeholders. This mechanism must be easily accessible to all community members, including vulnerable and marginalized groups such as women, youth, persons with disabilities, and Indigenous Peoples. It should be designed in a culturally appropriate manner, respectful of local norms, and sensitive to the needs of the affected populations.

Project AWARE's Grievance Mechanism

The Project's Grievance Mechanism (GM) provides channels and structures for project stakeholders to provide feedback and/or express grievances related to project supported activities. By providing this platform, it increases transparency and accountability by acting as important feedback and learning mechanism that helps reduce the risk of the project inadvertently affecting citizens/ beneficiaries.
The GM aims to address project-related concerns in a timely and transparent manner and effectively. During the preparation of the Subprojects ESIA or ESMP, the GM seeks to fulfil the following objectives:

- Encourage registration, acknowledgment, and recording of all concerns or issues raised by aggrieved;
- Identify the frequencies of issues raised: for instance, unpaid compensation, inadequate compensation, disregard for local ritual ceremonies, land acquisition, workplace concerns and many more;
- Ensure that complaints are properly registered, tracked and documented, with due regard for confidentiality;
- Address the composition of a committee that would handle all grievances; Inform people of the public information centre establishment and access;
- Establish procedures for the GM to enhance easy access, transparency and accountability, and tackle escalation of grievances beyond expectations;
- Manage the concerns raised by aggrieved parties to achieve a win-win situation within a reasonable time frame that would comply with national and international best practices; and
- Record all resolutions agreed upon by all parties involved and ensure that aggrieved persons are satisfied with every outcome of remedial resolution to foster harmony in subprojects.

A Grievance Manual will be developed that describes the process by which people affected by the Project can bring their grievances and concerns to the project management's attention, and how they will be considered and addressed. The Manual will consider existing informal processes of grievance redress, and will ensure that adopted processes of handling community concerns are culturally appropriate.

Grievance focal points will be appointed at the various levels (National, county and sub-project levels) and will be capable of receiving both verbal and written grievances. The focal points will record the grievances in a systematic manner and categorize them by type, and severity, in line with the Grievance Manual.

Grievance redress committees (GRC) will also be established at national, county and sub-project levels. The members of these committees at the county and sub-project levels will be locally appointed to enhance ownership of the redress process. These committees may include existing local committees such as Ward Water Committees (WWCs) or Water Resource Users Associations (WRUAs) and will have strong representation of disadvantaged groups. The grievance focal persons will be appointed to receive and process

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grievances will be part of the GRCs, and will interface between the grievant and the GRC. The committees will be coordinated by the Project Manager, and additional staff with particular expertise will be included as necessary depending on the complaint (procurement, finance, monitoring and evaluation (M&E), GBV advisor and communication).

The GRCs will meet monthly to review minor complaints, progress on complaints resolution, review the development and effectiveness of the grievance mechanism, and ensure that all staff and communities are aware of the system and the project. Adhoc meetings may also be held upon receipt of significant complaints depending on their nature, or as defined in the Grievance Manual.

The existence of the grievance mechanism will be communicated to all stakeholder groups during meetings and briefings at Project and sub-projects launch. The communication will be maintained throughout Project implementation through periodic stakeholder meetings at Project and sub-project levels, and through the Executing Entities media communication channels.

An appeals process will also be established and communicated for complainants who are not satisfied with the proposed resolution of the complaint. In all cases, complainants will be reassured that they still have all their legal rights under their national judicial process.

All contractors and suppliers will be expected to sensitize their workers on the Project GRM and have a focal person to receive complaints regarding the construction and their workers and put in place complaints redress structures specific for the workers.

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Annex 5 Gender Assessment and Action Plan

Will be completed in next round of submission

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Annex 6: Geospatial Details of Physical Interventions

Component	Sub-County	Ward	Proposed Intervention	Number of Sites	Latitude	Longitude
Marsabit						
1	North Horr	Dukana	New Borehole Drilling	1	4.127441919	36.997622
1	North Horr	Dukana	Borehole Rehabilitation	1	4.127441919	36.997622
1	Laisamis	Gatab	New Borehole Drilling	1	2.643908	36.9299219.
1	Laisamis	Gatab	Borehole Rehabilitation	1	2.643908	36.9299219.
1	North Horr	Golbo	New Borehole Drilling	2	3.12537752	39.121335
2	North Horr	Golbo	Water Storage Tank Instalation	2	3.12537752	39.121335
2	North Horr	Golbo	Rangeland Rehabilitation	2	3.12537752	39.121335
2	North Horr	Golbo	Bee Keeping	1	3.12537752	39.121335
2	North Horr	Golbo	Soil & Water Conservation Structures Construction	1	3.12537752	39.121335
2	North Horr	Golbo	Water Pan Construction	1	3.12537752	39.121335
1	North Horr	Ileret	New Borehole Drilling	1	4.31084761	36.227685
1	North Horr	Ileret	Borehole Rehabilitation	1	4.31084761	36.227685
1	Laisamis	Kargi	New Borehole Drilling	1	2.50361337	37.569766
1	Laisamis	Kargi	Sand Dam Construction	1	2.50361337	37.569766
1	Laisamis	Loglogo	Sand Dam Construction	1	3.59887	36.52364
1	Laisamis	Loglogo	Borehole Rehabilitation	1	3.59887	36.52364
1	Laisamis	Loiyangalani	Sand Dam Construction	1	2.762778339	36.720335
1	Laisamis	Loiyangalani	Borehole Rehabilitation	1	2.762778339	36.720335
1	North Horr	Maikona	Sand Dam Construction	2	2.938039895	37.628937
2	North Horr	Maikona	Spate Irrigation	1	2.938039895	37.628937
2	North Horr	Maikona	Rangeland Rehabilitation	1	2.938039895	37.628937
1	Saku	Marsabit Central	Sand Dam Construction	2	2.331628158	37.99853
1	Saku	Marsabit Central	Borehole Rehabilitation	1	2.331628158	37.99853
1	Laisamis	Moite	New Borehole Drilling	1	3.332970821	36.318617
1	Laisamis	Moite	Borehole Rehabilitation	1	3.332970821	36.318617
1	North Horr	North Horr	Sand Dam Construction	2	3.326432132	37.069353
1	North Horr	North Horr	New Borehole Drilling	1	3.326432132	37.069353
1	Moyale	Obbu	New Borehole Drilling	1	3.27084874	38.72675
1	Moyale	Obbu	Borehole Rehabilitation	1	3.27084874	38.72675
1	Saku	Sagante	Sand Dam Construction	2	2.338558805	38.087237
1	Saku	Sagante	Borehole Rehabilitation	1	2.338558805	38.087237
1	Moyale	Sololo	Sand Dam Construction	1	3.560939732	38.649164
1	Moyale	Sololo	Borehole Rehabilitation	1	3.560939732	38.649164
2	Moyale	Sololo	Water Pan Construction	2	3.560939732	38.649164
2	Moyale	Sololo	Rangeland Rehabilitation	2	3.560939732	38.649164
1	Moyale	Uran	Sand Dam Construction	1	3.394693589	38.562932
Garissa						
1	Balambala	Balambala	New Borehole Drilling	4	0.164918112	39.250653

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1	Balambala	Balambala	Sand Dam Construction	1	0.164918112	39.250653
1	Shanta Aabak	Baraki	New Borehole Drilling	1	0.550432137	39.446129
1	Shanta Aabak	Baraki	Sand Dam Construction	1	0.550432137	39.446129
1	Shanta Aabak	Baraki	Borehole Rehabilitation	1	0.550432137	39.446129
1	Bura East	Bura	Sand Dam Construction	1	-1.09516101	39.941273
1	Bura East	Bura	Borehole Rehabilitation	3	-1.09516101	39.941273
1	Dadaab	Dertu	New Borehole Drilling	1	0.079551615	39.691421
1	Dadaab	Dertu	Borehole Rehabilitation	3	0.079551615	39.691421
1	Lagdera	Maalimin	Sand Dam Construction	2	0.430340469	39.130934
1	Lagdera	Maalimin	New Borehole Drilling	4	0.430340469	39.130934
2	Lagdera	Maalimin	Water Pan Construction	1	0.430340469	39.130934
2	Lagdera	Maalimin	Soil & Water Conservation Structures Construction	10	0.430340469	39.130934
2	Lagdera	Maalimin	Water Pan Rehabilitation	3	0.430340469	39.130934
2	Lagdera	Maalimin	Run-off Harvesting Structures Construction	100acres	0.430340469	39.130934
2	Lagdera	Maalimin	Irrigation Micro-Basin Construction	10acres	0.430340469	39.130934
2	Lagdera	Maalimin	Water Source Protection	10	0.430340469	39.130934
2	Lagdera	Maalimin	Rangeland Rehabilitation	10	0.430340469	39.130934
1	Lagdera	Madogashe	Sand Dam Construction	3	0.590396295	39.167775
1	Lagdera	Madogashe	New Borehole Drilling	6	0.590396295	39.167775
1	Balambala	Sankuri	New Borehole Drilling	1	-0.11583777	39.498407
1	Balambala	Sankuri	Borehole Rehabilitation	3	-0.11583777	39.498407
2	Lagdera	Afweyne	Water Pan Construction	2	-0.44100239	39.652949
2	Lagdera	Afweyne	Soil & Water Conservation Structures Construction	5	-0.44100239	39.652949
2	Lagdera	Afweyne	Water Pan Rehabilitation	1	-0.44100239	39.652949
2	Lagdera	Afweyne	Run-off Harvesting Structures Construction	100acres	-0.44100239	39.652949
2	Lagdera	Afweyne	Irrigation Micro-Basin Construction	10acres	-0.44100239	39.652949
2	Lagdera	Afweyne	Water Source Protection	2	-0.44100239	39.652949
2	Lagdera	Afweyne	Rangeland Rehabilitation	5	-0.44100239	39.652949
2	Lagdera	Loyangulata	Water Pan Construction	2	-0.44100239	39.652949
2	Lagdera	Loyangulata	Soil & Water Conservation Structures Construction	5	-0.44100239	39.652949
2	Lagdera	Loyangulata	Water Pan Rehabilitation	1	-0.44100239	39.652949
2	Lagdera	Loyangulata	Run-off Harvesting Structures Construction	100 acres	-0.44100239	39.652949
2	Lagdera	Loyangulata	Irrigation Micro-Basin Construction	10 acres	-0.44100239	39.652949
2	Lagdera	Loyangulata	Water Source Protection	2	-0.44100239	39.652949
2	Lagdera	Loyangulata	Rangeland Rehabilitation	5	-0.44100239	39.652949
Wajir						
1	Wajir West	Ademasajida	New Borehole Drilling	1	1.734153544	40.061735
1	Wajir West	Ademasajida	Borehole Rehabilitation	2	1.734153544	40.061735
1	Wajir West	Arbajahan	Sand Dam Construction	2	2.190561107	39.188033
1	Wajir West	Arbajahan	New Borehole Drilling	1	2.190561107	39.188033
2	Wajir West	Arbajahan	Water Pan Construction	1	2.190561107	39.188033
2	Wajir West	Arbajahan	Hay Store Construction	1	2.190561107	39.188033

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2	Wajir West	Arbajahan	Rangeland Restoration	1	2.190561107	39.188033
2	Wajir West	Arbajahan	Wetland Restoration	2	2.190561107	39.188033
1	Eldas	Basir/Lakoley	New Borehole Drilling	1	2.362685629	38.988452
1	Eldas	Basir/Lakoley	Sand Dam Construction	1	2.362685629	38.988452
1	Wajir North	Buna/Batalu	New Borehole Drilling	2	2.882478629	39.875847
1	Wajir North	Buna/Batalu	Borehole Rehabilitation	2	2.882478629	39.875847
1	Wajir North	Bute	Sand Dam Construction	3	3.371524846	39.425063
2	Wajir North	Bute	Water Pan Construction	1	3.371524846	39.425063
2	Wajir North	Bute	Water Pan Rehabilitation	1	3.371524846	39.425063
2	Wajir North	Bute	Gum Resin Production	1	3.371524846	39.425063
2	Wajir North	Bute	Bee Keeping	1	3.371524846	39.425063
2	Wajir North	Bute	Maize & Sorghum Value Chain Support	1	3.371524846	39.425063
1	Eldas	Eldas	New Borehole Drilling	3	2.473473097	39.631326
1	Wajir north	Godoma	New Borehole Drilling	1	-4.40005348	39.283312
1	Wajir north	Godoma	Borehole Rehabilitation	2	-4.40005348	39.283312
1	Wajir North	Gurar	Sand Dam Construction	1	3.364243147	39.570813
1	Wajir North	Gurar	Borehole Rehabilitation	2	3.364243147	39.570813
1	Wajir south	Habaswein	Sand Dam Construction	1	1.021674271	39.492845
1	Wajir south	Habaswein	Borehole Rehabilitation	2	1.021674271	39.492845
2	Wajir south	Habaswein	Water Pan Cpnstruction	2	1.021674271	39.492845
2	Wajir south	Habaswein	Rangeland Rehabilitation	2	1.021674271	39.492845
2	Wajir south	Habaswein	Wetland Restoration	10	1.021674271	39.492845
1	Wajir West	Hadado/Athibohol	New Borehole Drilling	2	1.360407968	39.596684
1	Wajir North	Korondille	New Borehole Drilling	3	2.954857328	39.346259
Mandera						
1	Mandera north	Ashabito	Sand Dam Construction	1	3.589058582	40.668447
1	Mandera north	Ashabito	Borehole Rehabilitation	2	3.589058582	40.668447
1	Dandu	Dandu	New Borehole Drilling	3	3.625357512	39.883367
1	Dandu	Dandu	Sand Dam Construction	1	3.625357512	39.883367
1	Banisa	Derkale	New Borehole Drilling	2	3.865238843	40.208531
2	Banisa	Derkale	Water Pan Construction	1	3.865238843	40.208531
2	Banisa	Derkale	Rangeland Rehabilitation	1	3.865238843	40.208531
1	Mandera west	Gither	Sand Dam Construction	1	3.675656945	39.919378
1	Mandera west	Gither	Borehole Rehabilitation	2	3.675656945	39.919378
1	Ashabito	Guticha	Sand Dam Construction	2	3.660972083	40.619301
1	Kiliwaheri	Kiliwaheri	New Borehole Drilling	1	3.90521558	40.077942
1	Kiliwaheri	Kiliwaheri	Borehole Rehabilitation	2	3.90521558	40.077942
2	Kiliwaheri	Kiliwaheri	Rangeland Rehabilitation	2	3.90521558	40.077942
1	Mandera north	Rhamu	New Borehole Drilling	2	3.931090153	41.214512
2	Mandera north	Rhamu	Water Pan Construction	1	3.931090153	41.214512
2	Mandera north	Rhamu	Rangeland Rehabilitation	1	3.931090153	41.214512

1	Mandera north	Rhamu Dimtu	Sand Dam Construction	4	3.982171765	41.00093
2	Mandera north	Rhamu Dimtu	Rangeland Rehabilitation	3	3.982171765	41.00093
1	Lafey	Sala	Sand Dam Construction	1	3.700250548	41.18183
1	Lafey	Sala	Borehole Rehabilitation	2	3.700250548	41.18183
1	Mandera west	Takaba	Sand Dam Construction	1	3.394990293	40.220931
1	Mandera west	Takaba	Borehole Rehabilitation	2	3.394990293	40.220931
1	Mandera west	Takaba south	New Borehole Drilling	2	3.396532532	40.224107
2	Mandera west	Takaba south	Rangeland Rehabilitation	2	3.396532532	40.224107
2	Mandera west	Takaba south	Water Pan Construction	2	3.396532532	40.224107

Annex 7: Economic, Social and Environmental Benefits by Component

Type of Benefit	Specific Benefit	Baseline	Projected Endline status
Economic	Water collection time for women and children saved.	Women and children in Ewaso Nyiro River Basin (ENRB) spend long hours and go for long distances to fetch water- Water access is generally low, and a large part of the population rely on surface water, which dries up seasonally and even more during worsening droughts.	Strengthened infrastructure for sustainable, flood resilient, groundwater access- 266,000 people reached with basic, safe water access, reducing water collection time burden.
Economic	Strengthened institutional capacity for groundwater access	Lack of institutional capacity in the water sector to sustainably arrange for groundwater access in the face of climate shocks (droughts/ floods).	Strengthened capacity of the water sector to ensure groundwater access in the face of climate shocks, especially during worsening droughts
Social	Reduced waterborne illnesses	Waterborne diseases like cholera impact the well-being of communities during floods. This results from destroyed water and contamination from destructive floods	Climate resilient water infrastructure is not broken down by floods, leading to no contamination and decreased outbreaks of waterborne diseases.
Social	Increased crop yield and improved Food and Nutrition Security	Food and Nutrition Insecurity- Communities get low crop yields due to declining productivity resulting from unsustainable land use.	Improved Food and Nutrition Security through livelihood improvement and building resilient ecosystems.
Social	Improved dietary diversity for children	Over 75% of children aged 6–23 months are not receiving a minimum acceptable diet	Increased access to diverse diets through climate smart agriculture and nutrition behavior change interventions.
Social	Increased capacity of women and youth Nature Based Enterprises.	Low investment in sustainable Land use management practices worsening the health and productivity of the rangeland and cropland in ENRB	Capacity built Nature Based Enterprises working with women and Youth contributing to ecosystem restoration.
Economic	Increased access to Early Warning Systems	Communities lack access to / information on climate Services leading to high losses and	Communities have access to Early Warning Systems reducing economic losses through early

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		damages induced by extreme weather conditions (drought and floods)	action.
Social	Increased community resilience to climate shocks.	A vicious cycle of extreme weather events followed by heavy losses of lives and livelihoods and damages to property potential harvest and income- Communities lack capacity to understand, anticipate and respond to extreme weather conditions.	Communities have the tools to plan, anticipate and respond to extreme weather conditions.
Economic	Improved coordination of climate change units.	Weak coordination of Kenya's Climate Adaptation- Capacity gaps and overlapping efforts within counties reduce effectiveness	Strengthened County climate change Units (CCUs) leading to improved localized adaptation efforts, enhanced coordination and technical capacity
Economic	Updated National Adaptation Plan, relevant to emerging climate risks	The National Adaptation Plan (NAP) is not aligned to National Determined Commitments (NDCs) hence requires updating.	Updated NAP with the latest climate data, aligned to NDCs and addressing emerging risks
Economic	Evidence based decision making.	Underdeveloped knowledge management systems for climate adaptation.	A functional knowledge platform facilitating knowledge sharing and evidence-based decision making
Social	Reduced water contamination	High disease burden, elevated cost of treatment and increased mortality of the vulnerable members of the community due to water contamination triggered by poor waste management.	Low disease burden stemming from water contamination
Social	Improved water quality and management systems	Communities have poor water quality due to high rates of contamination and inadequate monitoring of water quality.	Established Water Quality management and monitoring systems.
Social	Improved Education outcomes in schools	Children miss school to spend long hours and distance to fetch water.	Improved school attendance as time for fetching water is saved
Environmental	Groundwater and watershed sustainability	Over-abstraction, pollution, and unmanaged aquifer use threaten long-term sustainability	Nature-based aquifer recharge, restoration of sub-catchments, and community-led water governance improve sustainability.

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Environmental	Climate resilience and ecosystem biodiversity	Climate shocks degrade ecosystems, reduce biodiversity, and cause crop/livestock losses.	Improved biodiversity through restoration, ecosystem management, and climate-resilient agriculture supports long-term environmental and livelihood resilience
Environmental	Improved waste management assets and institutions.	Inadequate Waste management and related infrastructure- Microbial and chemical contamination in major urban centers within Ewaso Nyiro Water Basin	Functional waste management assets and institutions.
Environmental	Ecosystem restoration and increased productivity	Decline in health and productivity of rangeland and crop land of the fragile Arid and Semi-Arid Lands in the ENRB- Unsustainable land use practices including overgrazing, encroachment on riparian land and water use conflicts between crop farmers and pastoralists are key challenges faced in the basin.	Restoration of aquifers to address water availability, rangeland and cropland restoration to enhance agricultural productivity in the basin.
Environmental	Improved waste management and Reduced pollution	Open dumping and burning prevalent in towns like Moyale in and Marsabit- high risk of contamination of aquifers serving the urban population	Climate-resilient waste management infrastructure, education campaigns, and strengthened monitoring reduce water and soil pollution risks.

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Annex 8: Summary of Climate Hazards and Underlying Vulnerabilities in Project Areas

Climate Hazard	Impact on Community	Underlying Vulnerability	Target Community Affected	Proposed project Interventions
Rising frequency and intensity of drought	**Water scarcity** - Drying up of surface water sources - Inadequate safe water supply **Livelihoods** - Livestock deaths - Crop failure - Food insecurity - Malnutrition - Reduced livestock productivity **Ecosystems** - Loss of pasture - Declining soil fertility **Society** - Increased community conflicts	- Poor water infrastructure - Lack of resilience in the water sector - Arid and semi-arid climate - Climate pressure - Scarce resources - Degraded rangelands - Unsustainable land use - Weak rangeland governance - Weak governance on water and natural resources	Pastoralists and agro-pastoralists in Wajir, Garissa, Mandera and Marsabit	- Establish infrastructure to access groundwater. *(Output 1.3)* - Recharge aquifers. *(Output 1.2)* - Build sand dams for water storage. *(Output 1.2)* - Enhance fodder production. *(Output 2.1)* - Strengthen Climate-smart agriculture, Nutrition education and SBC. *(Output 2.3 &2.4)* - Establish fodder banks - Restore rangelands-reseeding. *(Output 2.1)* - Establish grazing plans. *(Output 2.1)* - Strengthening Water Resources Users Associations (WRUAs) and water governance structures. *(Output 2.2)* - Strengthen Natural Resource Management (NRM) committees/ groups. *(Output 1.1)* - Develop inclusive resource-sharing agreements (Output 1.4)

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Increasingly unpredictable and intense rainfall leading to (flash) floods	**Infrastructure** - Destruction of fragile water infrastructure - Destruction of homes and infrastructure **Public Health** - Water pollution / contamination - Disease outbreaks **Society** - Displacement	- Poor drainage - Lack of resilient infrastructure - Unplanned settlements - Water infrastructure prone to contamination - Dumping and poor waste management - Lack of structured waste sites - Weak environmental management (lack of zoning in flood-prone areas)	Urban informal settlements in Marsabit, Wajir, Garissa	- Conduct flood risk assessments. *(Output 3.1)* - Implement flood-sensitive planning. *(Output 3.3)* - Develop drainage systems. *(Output 5.2)* - Establish early warning systems. *(Output 3.1& 3.4)* - Monitor water quality. *(Output 5.1)* - Provide WASH education. *(Output 1.1 & 5.3)* - Protect boreholes. *(Output 1.3)* - Build resilient waste management infrastructure *(Output 5.2)* - Implement waste segregation and safe disposal systems. *(Output 5.2)* - Strengthen environmental committees. *(Output 5.4)*
	Agriculture and livelihoods - Unpredictable food production - Poor harvests Livelihood instability	- Rainfed agriculture - Lack of irrigation - Limited climate information	Agro-pastoralists across all 4 counties	- Develop climate-resilient irrigation. *(Output 2.3)* - Disseminate tailored climate advisories. *(Output 3.1)* - Implement water harvesting systems. *(Output 2.2)*
Heatwaves/ High Temperatures	- Increased evaporation - Reduced water availability - Increased livestock stress - Reduced human productivity	- Lack of vegetation cover - Reliance on open water sources - No heat mitigation infrastructure	Whole basin especially Marsabit and Wajir	- Restore vegetation cover. *(Output 2.1)* - Introduce water harvesting systems. *(Output 2.2)* - Implement solar-powered water pumps. *(Output 2.3)* - Use climate-adapted livestock/crops. *(Output 2.3)*

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Annex 9 Component specific benefits of the project

Output	Target Area	No. of Beneficiaries	Cost per Beneficiary (US$)	Economic Benefit	Logic
Output 1.1: Enhanced capacity of Water Resource Management Institutions and professionals for sustainable groundwater development and management in ENRB	Mandera, Marsabit, Garissa and Wajir	600	450	Improved technical capacity in water management leads to more efficient groundwater development, reducing the need for costly crisis management and improving overall water resource sustainability. By building the skills of local professionals in climate-resilient (ground)water management, the project ensures long-term sustainable water services, improving adaptive capacity and reducing future humanitrian and adaptation costs.	By building the skills of local professionals, the project ensures more efficient and sustainable water management, reducing costs related to maladaptation and increasing adaptive capacity for climate shocks.
Output 1.2 Improved rain/floodwater harnessing for Managed Aquifer Recharge (MAR) and Nature-based Solution (NbS)	Mandera, Marsabit, Garissa and Wajir	52000	41.54	Improved groundwater recharge leads to increased yields and reduced salinity in boreholes, enhancing water security and supporting local economies, particularly in drought-prone areas. By implementing MAR and NbS, the project increases groundwater availability, reduces dependency on seasonal rainfall, and enhances water quality, ensuring more reliable and resilient water access for communities and livestock.	Improving groundwater recharge through MAR and NbS increases water availability and quality, providing long-term benefits to agricultural production, household water access, and economic stability in vulnerable communities.

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Output 1.3: Climate-resilient groundwater infrastructure developed and in operation in target communities within ENRB counties	Mandera, Marsabit, Garissa and Wajir	214000	27.24	Increased access to climate-resilient water infrastructure enhances household productivity, reduces water collection time (especially for women), and improves educational outcomes (for girls) by reducing water scarcity. Investing in resilient water infrastructure (e.g., boreholes) ensures communities are less affected by climate change impacts, ensuring consistent access to water for domestic use and livestock, even in drought conditions. During floods, resilient infrastructure will not get washed away, preventing high repair costs	Investing in climate-resilient water infrastructure reduces water scarcity and the time women spend collecting water, leading to increased household productivity, better health outcomes, and improved education, especially for women and girls.
Output 1.4: Strengthened financial management capacity of Water Services for sustainable water service delivery in the context of climate change	Mandera, Marsabit, Garissa and Wajir	266000	2.59	Strengthening technical capacity and financial management of water utilities ensures more efficient water service delivery, increases tariff collection, and supports long-term service sustainability. Improved financial and management capacity of Water Service Providers ensures that services are sustainable, affordable, and equitable, especially for the most vulnerable populations, through better governance and climate-resilient financial models.	Improved management of water services increases the sustainability of water delivery, reduces operating costs, and ensures that water tariffs are more effectively collected, supporting long-term, climate-resilient water systems for vulnerable communities.
Output 2.1: Prioritized rangeland resources including land are brought under restoration, safeguarded and sustainably managed for improved climate change resilience	Mandera, Marsabit, Garissa and Wajir	11655	165.17	Restored rangelands increase livestock productivity and reduce the need for costly drought relief, thus enhancing the economic stability of pastoralist communities.	Ecosystem restoration through participatory approaches ensures long-term land and water sustainability, improving pasture availability, reducing livestock mortality, and enhancing climate resilience.

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Output 2.2: Community-validated climate resilient water infastructure developed and or rehabilitated for food security	Mandera, Marsabit, Garissa and Wajir	127760	17.22	Climate-resilient water infrastructure improves water availability for agriculture and livestock, boosting productivity, food security, and reducing the need for emergency aid.	Investing in water infrastructure for irrigation and groundwater, along with renewable energy systems, enhances food security and strengthens community resilience to climate-induced water scarcity and erratic rainfall.
Output 2.3: Climate-smart agriculture and nature-based enterprises promoted through inclusive value chains for climate resilient livelihoods	Mandera, Marsabit, Garissa and Wajir	61600	8.93	Adoption of climate-smart practices and diversification into nature-based enterprises increases household incomes, reduces vulnerability to climate shocks, and creates new economic opportunities for women and youth.	Empowering smallholder farmers with climate-resilient agricultural practices, including drought-tolerant crops and sustainable production technologies, improves productivity and reduces vulnerability to climate risks, ensuring long-term livelihood security.
Output 2.4: Improved household access to nutritious and diversified diets, contributing to enhanced livelihood resilience	Mandera, Marsabit, Garissa and Wajir	11520	46.8	Improved nutrition outcomes contribute to better health, productivity, and reduced healthcare costs, reducing population vulnerability and supporting long-term climate resilience and economic stability.	Strengthening climate-resilient livelihoods and promoting diverse, nutritious diets enhances food security, reduces malnutrition, and builds resilience, particularly for vulnerable groups, against the impacts of climate change.
Output 3.1: Flood EWS accuracy improved by incorporating more data using existing open source flood models	Mandera, Marsabit, Garissa and Wajir	Countwide	NA	Reduced financial losses through proactive flood risk management, minimizing infrastructure damage and agricultural losses.	Flood risk maps and anticipatory action plans enable early interventions, which prevent costly damages to homes, businesses, and agricultural production.
Output 3.2: Improved Anticipatory Action triggers defined in updated plans, integrating (child) vulnerability in target counties and nationally	Mandera, Marsabit, Garissa and Wajir	nationwide and countywide	Na	Cost savings from integrated climate risk advisories that guide resource allocation and minimize economic disruptions.	Linking climate risk predictions with vulnerability assessments ensures targeted actions, reducing waste and enhancing resource management efficiency.

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Output 3.3: County budgeting process for Anticipatory Action strengthened	Mandera, Marsabit, Garissa and Wajir	county wide	Na	Reduced disaster recovery costs due to strengthened early warning systems and anticipatory action planning.	Flood and drought EWS provide advanced notice, enabling governments and communities to take preventative measures, reducing the need for costly emergency responses.
Output 3.4: Early Warning Communication systems improved to effectively reach last-mile communities	Mandera, Marsabit, Garissa and Wajir	countywide	Na	Improved economic stability through better access to tailored climate services and early warning information for vulnerable communities.	By providing local communities with tailored climate information, this reduces the likelihood of economic disruptions caused by floods or droughts.
Output 4.1: Enhanced capacity of the Ministry of Water and County Climate Unites in targeted ENRB Counties for inclusive and participatory climate adaptation planning and coordination in the water sector.	Mandera, Marsabit, Garissa and Wajir	Countywide	NA	Strengthening technical capacity and coordination in the water sector enhances efficiency in climate adaptation efforts, reducing duplication of efforts and maximizing resource use. Improved coordination leads to better decision-making, reducing costs associated with uncoordinated responses and ensuring long-term sustainability of water resources.	Building capacity and strengthening coordination in the water sector enables more effective climate adaptation, reducing costs associated with poor management and ensuring better outcomes for communities at risk from climate impacts.
Output 4.2: National Adaptation Plan (NAP) updated through an inclusive and participatory process incorporating feedback from key stakeholders, including youth and ENRB County Representatives	Nationwide	Nationwide	NA	Updating the National Adaptation Plan (NAP) ensures that Kenya's climate strategies remain relevant and responsive to current and future climate risks, optimizing investments in adaptation actions. By integrating the latest climate data and knowledge, the updated NAP will improve the effectiveness of adaptation efforts, reducing the long-term costs of climate inaction.	Updating the NAP helps align Kenya's climate strategies with current data, enabling more effective and targeted adaptation efforts, which in turn reduces the financial burden of unaddressed climate risks.

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Output 4.3: Increased capacity of youth in targeted ENRB counties to meaningfully participate in climate adaptation governance and action	Nationwide	2060	49	Building the capacity of youth to develop and implement climate projects fosters innovation and ensures sustainable, community-driven climate action. Empowering youth in climate adaptation contributes to long-term resilience by creating job opportunities and reducing vulnerability in the face of climate change.	Training youth to engage in climate adaptation efforts ensures a generation that is proactive in climate resilience, creating job opportunities, and reducing economic vulnerability to climate impacts.
Output 4.4: A functional and regularly updated climate change and adaptation knowledge platform established and used by the Ministries, County Climate Units, Youth, and other stakeholders in targeted ENRB counties	Nationwide	Nationwide	NA	Enhancing knowledge-sharing platforms facilitates better access to climate data and best practices, improving the effectiveness of climate adaptation efforts across sectors. Increased access to information enables stakeholders to make informed decisions, reducing risks and costs associated with climate-related disasters.	Improving climate knowledge-sharing enhances collaboration, informs decision-making, and reduces the costs of ineffective climate adaptation efforts by ensuring stakeholders are better equipped to respond to climate challenges.
Output 5.1: Enhanced technical capacity of relevant institutions in targeted ENRB Counties for water quality monitoring and enforcement related to waste management.	Mandera, Marsabit, Garissa and Wajir	Countywide	NA	Strengthening institutional capacity for water pollution monitoring and enforcement ensures that pollution risks are detected and mitigated promptly, preventing water contamination during floods and droughts. This reduces the economic costs of waterborne diseases and the need for costly cleanup and restoration efforts.	Improved pollution monitoring and enforcement reduce the costs associated with water contamination, protecting public health and ensuring that water resources are available and safe for communities and agriculture.

Output 5.2: Increased access to climate-resilient waste management infrastructure	Marsabit	22407	14	Building climate-resilient waste management infrastructure reduces flood-related pollution risks and improves water quality during droughts. By fostering circular economy practices, the project minimizes waste accumulation, improving the resilience of water systems and reducing the costs of flood damage and water scarcity.	Establishing resilient waste management infrastructure ensures that waste does not exacerbate climate impacts, such as flooding or drought, protecting water systems and reducing the economic costs of water pollution.
Output 5.3: Improved knowledge and adoption of safe and climate-resilient waste management practices and the importance of water quality monitoring within communities and institutions	Mandera, Marsabit, Garissa and Wajir	90000	0.83	Community education on responsible waste management promotes sustainable behaviors that reduce the impacts of floods and droughts on water systems. This results in fewer waste-related disruptions to water infrastructure and improved water quality, reducing long-term costs associated with flood damage and drought-related water scarcity.	Improved community awareness on waste management reduces the economic impact of waste-related disruptions to water systems, protecting water resources and promoting sustainable practices.
Output 5.4: Strengthened organizational capacity of county environmental committees in ENRB Counties to develop, implement, and monitor policies and actions addressing waste-related water pollution.	Mandera, Marsabit, Garissa and Wajir	Countywide	NA	Strengthening County Environment Committees enhances local capacity to manage waste-related pollution, mitigating the risks of flooding and water contamination during droughts. This reduces the financial burden of disaster recovery and ensures more effective management of water resources at the local level.	Empowering County Environment Committees to manage waste-related pollution ensures more efficient and cost-effective disaster risk management, preventing the financial costs associated with flood-induced contamination and drought-related water scarcity.

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Annex 10: Complementarity to Contemporary Initiatives

S/No	Relevant Project	Description	Goals	Complementary Potential	Action to Avoid Overlap	Time-line
1	Horn of Africa Groundwater for Resilience (HoAGW4R)	Led by the Ministry of Water, Sanitation and Irrigation in Wajir, Garissa, Turkana, Marsabit, and Mandera. Supports sustainable groundwater access and management via 400 boreholes, 50 exploratory wells, MAR systems, and WRUA capacity-building.	Improve groundwater access, recharge, and governance in border counties.	AWARE will expand reach to more beneficiaries and adopt best practices on MAR, WRUA capacity, and catchment restoration.	Coordinate targeting within ASAL counties to avoid duplication in borehole rehabilitation.	6 years
2	Kenya Water, Sanitation and Hygiene Programme (K-WASH)	World Bank-funded support to NAWASIP aiming for universal WASH access in all 47 counties; focuses on sustainable rural water, sanitation, WSP performance, and sector monitoring.	Universal access to water and sanitation, WSP efficiency, sector coordination.	AWARE can leverage national frameworks and monitoring tools while filling implementation gaps in underserved areas.	Focus on ASAL counties and innovations to avoid duplicating broad national efforts.	Ongoing to 2030
3	Financing Locally-Led Climate Action (FLLoCA)	Focuses on community-driven climate adaptation, including borehole rehab, solar water systems, and water harvesting infrastructure in northeastern Kenya.	Empower communities, enhance local resilience, water access and livelihoods.	AWARE can scale up and replicate locally successful FLLoCA approaches in new areas.	Harmonize community engagement and investment planning to align with FLLoCA priorities.	Ongoing
4	UNICEF “More Water More Life” Groundwater Innovation	Targets ASAL counties (Turkana, Samburu, Marsabit, Mandera, Wajir, Garissa) using advanced mapping for sustainable groundwater access and resilience	Improve drought resilience through scientific groundwater	AWARE will adopt technical and scientific approaches to improve drilling success and	Share data, avoid redundant exploration in same zones.	Ongoing

		to climate shocks.	mapping and sustainable services.	sustainability.		
5	KOICA-UNICEF WASH Programme – Turkana	Started in 2019 (ends 2027), includes solar water systems, sand dams, and hygiene for communities and institutions in Turkana.	Enhance resilience via improved water management and WASH services.	AWARE will build on climate-resilient infrastructure and community-based models.	Project AWARE is not targeting Turkana	2019 – 2027
6	Climate Resilient Food Systems (CRFS) – WFP	Implemented in 10 ASAL counties using an area-based hub model targeting 885,000 beneficiaries with integrated climate-smart investments.	Strengthen food and water security, ecosystem resilience, and livelihoods.	AWARE will complement CRFS through water infrastructure and integrated resilience approaches.	Joint planning in shared counties (e.g., Wajir, Garissa, Turkana) to avoid double-counting and overlap.	4 years
7	Water and Sanitation Development Project (WSDP)	World Bank and GoK project in Mombasa, Kwale, Kilifi, Taita Taveta, Wajir, and Garissa to improve WASH services and WSP performance post-COVID.	Improve water access for 2M people, sanitation for 130,000.	AWARE can focus on hard-to-reach ASAL populations within these counties.	Align geographic focus to avoid duplication in Wajir and Garissa.	Ends in 2025
8	UNESCO Initiatives (Flood Risk & Groundwater Tech)	Past activities include flood impact assessment (2024 Nairobi), groundwater desalination pilot (Naivasha), and “Enhancing Flood Resilience in Kenya” project in Tana River.	Improve flood resilience and water quality in high-risk areas.	AWARE can benefit from lessons on capacitive de-ionization and flood early warning systems.	Technical integration rather than duplication.	Completed & ongoing components

Annex 11: Knowledge Management Plan

Strategic Purpose

To create a robust, inclusive, and decentralized knowledge management system that:

- Enables informed decision-making on climate adaptation.

By providing stakeholders with timely, accurate, and relevant climate data and insights, this KM system empowers decision-makers at national and county levels to respond to climate risks effectively.

- Bridges national policies with local actions.

The plan facilitates the translation of high-level strategies like NCCAP III into practical, localized interventions that are shaped by community knowledge and ground realities.

- Enhances the visibility, voice, and agency of youth, women, and marginalized groups.

Through participatory knowledge tools and inclusive storytelling, the KM system ensures underrepresented voices contribute to shaping adaptation priorities and innovations.

- Supports the National Climate Change Action Plan (NCCAP III) and upcoming NAP and NDC revisions.

The KM system captures evidence and learning that can directly feed into national reporting and planning cycles, ensuring that policy remains grounded in real-world outcomes.

Pillars of the KM Plan

1. Knowledge Generation

Objective: Generate detailed, inclusive, and up-to-date information for effective adaptation.

Actions:

- Conduct vulnerability and risk assessments for health, nutrition, and energy in all counties.

These assessments will identify high-risk populations and geographies, enabling more targeted adaptation strategies for underserved sectors.

- Mobilize youth and community-based organizations to co-produce knowledge.

Engaging these groups helps capture localized and indigenous insights while building grassroots ownership of adaptation efforts.

- Commission studies and thematic briefs for CCUs on local climate impacts and priorities.

Evidence-based briefs will support CCUs in mainstreaming adaptation into county development planning and resource mobilization.

Tools: KoBoToolbox, Google Sheets or Excel templates.

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2. Knowledge Structuring and Standardization

Objective: Enable interoperability and usability of data across counties and national platforms.

Actions:

- Develop a national taxonomy and metadata standard.

This standardization ensures consistent classification of climate data across counties and platforms, improving national-level data synthesis and integration.

- Train CCUs to tag and store their local data consistently.

Training will help ensure that county-level data is usable and comparable across contexts, supporting more effective cross-county collaboration.

- Create County Climate Knowledge Briefs.

These briefs will serve as digestible, high-impact summaries of local vulnerabilities, interventions, and outcomes, useful for planning and advocacy.

Why Structuring Matters

A major challenge in Kenya's climate adaptation governance is the **fragmentation of knowledge** — often stored in PDFs, Word docs, and spreadsheets with inconsistent formats. To enable comparison, dashboarding, and policy feedback loops, the AWARE project promotes a **standardized, collaborative, and lightweight approach** to documenting county knowledge.

Tool of Choice: HackMD

HackMD is a free, real-time, cloud-based Markdown editor designed for teams to co-author structured notes. It is:

- **Accessible** from any browser or mobile device
- **Simple to use** — no coding required
- **Collaboration-friendly** — multiple users can edit and comment in real time
- Supports **Markdown**, a plain text format that can easily be converted to structured data like **JSON** for dashboards

How it works:

HackMD will play a central role in the AWARE project by enabling Climate Change Units (CCUs) and local stakeholders to co-author County Climate Knowledge Briefs in a structured and consistent Markdown format. This ensures that every county captures data using the same headings, categories, and terminology—reducing inconsistencies that often arise with Word or PDF documents. By using a shared HackMD template, counties can document key risks, adaptation actions, and lessons learned in a format that is both human-readable and machine-convertible to JSON. This structured approach

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supports cross-county comparison, dashboard integration, and seamless aggregation into national and regional knowledge platforms like the CCD Portal and IHP-WINS**.**

Tools/ Data format: HackMD / Markdown, JSON.

3. Knowledge Platforms and Accessibility

Objective: Ensure data and insights reach all stakeholders.

Actions:

- Strengthen the CCD Knowledge Platform.

Upgrading this platform will provide a centralized, government-endorsed repository for adaptation knowledge accessible to all stakeholders.

- Mirror information on UNESCO's IHP-WINS.

Using IHP-WINS enables international visibility, facilitates South-South learning, and ensures long-term data accessibility through a UNESCO-supported platform.

- Develop an SMS-based delivery channel and a mobile-first community dashboard.

To ensure inclusive access to climate information, the KM system will support both a **mobile-first community dashboard** and an **SMS-based delivery channel**. The dashboard—developed using no-code tools like **Power BI (mobile version)**—will deliver real-time forecasts, borehole status, alerts, and local advisories in a browser-based format optimized for low-bandwidth smartphones. In parallel, an **SMS version of the dashboard**, implemented using platforms like **RapidPro** will allow users in rural or offline areas to receive the same updates through automated daily broadcasts or keyword-based queries (e.g., "WEATHER", "WATER", "TIP"). This dual-delivery approach ensures that both smartphone and basic phone users—especially women, youth, and pastoral communities—can access actionable climate knowledge in real time, regardless of their device, digital literacy, or internet connectivity. In **Annex 2**, there is an illustrated example of the SMS channel.

Tools: CCD Portal, IHP-WINS, Power BI, USSD/SMS channels.

4. Feedback and Learning Loops

Objective: Make KM a two-way process.

Actions:

- Integrate feedback into alerts (e.g., SMS polls).

Feedback mechanisms help determine if communities are receiving, understanding, and acting on climate alerts, enabling continuous improvement.

- Hold quarterly CCU learning forums.

These forums promote peer-to-peer learning, knowledge sharing, and iterative improvements to adaptation efforts.

- Use storytelling to collect and share adaptation stories.

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Narrative-driven data captures lived experiences and promotes horizontal learning across counties and communities. Annex 3 is a generic step-by-step guide for this approach.

Tools: WhatsApp groups, Google Forms, IHP-WINS story pages.

5. Capacity Strengthening

Objective: Build the KM skills of CCUs, youth, and community leaders.

Actions:

- Train CCUs in data interpretation and risk communication.

Building technical capacity ensures CCUs can use data effectively to inform policies and communicate risks to the public.

- Mentor youth on bankable climate proposals.

Youth engagement in proposal writing builds future leadership and attracts climate finance to innovative local ideas.

- Train local media and radios on climate insights.

Media actors can play a key role in translating technical knowledge into accessible formats for the wider public.

Tools: Moodle, YouTube-based training, in-person bootcamps.

6. Policy Alignment and Institutional Integration

Objective: Anchor KM in legal and planning frameworks.

Actions:

- Integrate KM targets in the updated NAP.

This ensures national-level policy explicitly supports ongoing knowledge management practices and infrastructure.

- Create a National KM Working Group under CCD.

This group will guide implementation, encourage collaboration, and align efforts across counties and sectors.

- Advocate for KM funding in CIDPs.

Securing budget lines for KM at county level will ensure sustainability beyond project cycles.

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Implementation Support Tools

Tool	Role
IHP-WINS	Global knowledge sharing platform
CCD Knowledge Platform	National KM hub
Power BI	Interactive dashboards
KoBoToolbox	Field data collection
USSD/SMS	Communication with remote communities
HackMD	Collaborative authoring of structured briefs
RapidPro	Automated SMS flows for alerts and registration

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Annex 12: Stakeholder consultations

i. National Stakeholder consultations with National Government Ministries and Development stakeholders

	Date	National Stakeholders	Consultation Objectives	Outcome (Discussions)-Key Highlights	Consultation Conclusion
1	June 26–27, 2023	Government Ministries (Water, ASALs, Environment), County Governments (14 ASAL and 4 urban counties), UN Agencies (UNICEF, UNDP, UNEP, FAO, WFP, UN-Habitat, UNESCO), NGOs (SHOFCO, WIWA, Red Cross, World Vision), Development Partners (USAID, JICA, Dutch Embassy), Academia (UoN, KEWI), LNOB Groups	Jointly co-create the Theory of Change (TOC) and Integrated Results Framework for the 10-year UN Joint Programme on Sustainable Integrated Water Management. Establish governance structures (Steering & Advisory Committees) and secure stakeholder buy-in across sectors.	Identified key water-related challenges faced by marginalized groups, particularly in ASAL regions and urban informal settlements. Developed thematic TOC matrices across six pillars, including infrastructure, governance, environmental conservation, and livelihoods. Emphasis placed on gender responsiveness, climate resilience, youth inclusion, and public-private partnerships. Structured proposals for JP coordination committees were developed and validated in plenary.	Draft JP document to be finalized by July 2023, with validation workshops and stakeholder engagement planned. The official programme launch targeted for early September 2023.
2	6-Dec-24	UN Agencies (UNICEF, WFP, FAO, IOM, UN-Habitat, UNESCO, UNEP, UNDP), SDG Platform (Kellen Muchira, Rebecca Nyambura), Resident Coordinator's Office (RCO)	Align on coordination of climate finance streams (GEF, GCF, AWF, Adaptation Fund, AfDB) within the JP. Define agency roles for the Adaptation Fund proposal and prepare for a high-level climate finance workshop to mobilize political and donor support.	UNICEF and WFP were agreed upon as co-executing agencies for the Adaptation Fund proposal, with NEMA as the designated implementing entity. Other UN agencies (UNEP, FAO, IOM, UNESCO) will support through UN2UN mechanisms. Identified technical support needs, including gender analysis and ESS (Environmental and Social Safeguards). Planned a two-segment Climate Finance Workshop: a high-level session with political actors followed by technical discussions with donors and development banks.	Concept note for Adaptation Fund to be finalized by mid-January 2025. Discussions with Treasury, AWF, and World Bank to be scheduled. Workshop to be introduced at WATSAN DPG on December 11 and convened shortly thereafter.
3	31-Jan-25	Director General of NEMA, Mr. Mamo, UNICEF	Present the near-final draft of the Adaptation Fund concept to NEMA for endorsement and refinement. Discuss budget structure and alignment with national environmental priorities.	DG Mamo emphasized the needof Nature-Based Solutions (NbS), including the restoration and sustainable management of wetlands, in the proposal. Strong emphasis was placed on long-term Operation and Maintenance (O&M) of water systems to ensure sustainability. Also advised exploring reverse osmosis technology as part of the water access strategy, particularly in saline-prone ASAL regions.	Proposal revisions to emphasize wetland and ecosystem-based approaches, with budget reallocation toward sustainable infrastructure and maintenance. reverse osmosis systems to be integrated into Component 1 activities.

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4	**18-Feb-25**	Principal Secretary for Water, Sanitation and Irrigation (PS MoWSI), Mr. Korir and his senior technical team; UNICEF, RCO	Present the full concept for the Adaptation Fund (AWARE) proposal to MoWSI leadership. Gather technical and strategic feedback on structure, content, and geographic targeting.	PS directed that the programme should narrow its geographic focus to 3–4 counties within the Ewaso Nyiro basin. Component 1 to emphasize infrastructure for water access, including sand dams, MAR systems, and multi-village water schemes, while trimming non-essential software activities. Component 2 should highlight adaptation zones more clearly and integrate a significant intervention: a canal to redirect excess water from the Tana River into the Ewaso Nyiro system for flood mitigation and irrigation. Components 3 to 5 were advised to be streamlined and aligned to critical needs, including scaling back of policy-heavy activities and targeting waste management more concretely.	Await MoWSI confirmation on target counties. Proposal to be revised in line with PS guidance, emphasizing infrastructure, climate-smart water harvesting, and ecosystem restoration. After further deliberations the proposed canal was deemed not feasible within the budget.
5	**13-Mar-25**	Cabinet Secretary Minstry Environment, Climate Chantge and Forestry (CS MECCF), Hon. Aden Duale; UNICEF Kenya Leadership (Country Representative Ms. Shaheen Nilofer, Deputy Representative)	Strategic bilateral meeting to present the AWARE project concept and explore high-level government support and partnership opportunities.	The AWARE project, a USD 20 million initiative under the Adaptation Fund, was formally introduced. It targets Marsabit, Garissa, Wajir, and Mandera counties and aims to enhance water access, community resilience, and climate-smart development in the Ewaso Nyiro basin. The CS expressed interest and welcomed the alignment with national priorities and ongoing resilience efforts in northern Kenya.	Ministry expressed readiness to support project implementation. Further coordination to be pursued with county governments and line ministries to operationalize the partnership and synchronize activities with national resilience frameworks.
6	**22-Apr-25**	WATSAN Development Partners Group Members including WB, AfDB, AFD, Denmark embassy, Japan embassy, MoWSI	To introduce AF Proposal to WATSAN DPG members	UNICEF on behalf of the AF Proposal working group team shared the ongoing work on AF proposal, target locations and key components and requested collaboration with WATSAN DPG members working in the area	Partners are made aware of the objectives, geographic location and timeframe of the proposal development

ii. County Stakeholder consultations with Government Departments and Non-Government stakeholders

	Date	**Organization**	**County**	**Outcome (Discussions)-Key Highlights**	**Consultation Conclusion**

1	7/4/2025	County Department of Environment, Climate Change and NEMA	Wajir	The county has allocated 2% of its development budget to climate-resilient initiatives through the Climate Change Fund, supporting model farms, boreholes, and irrigation systems under the World Bank's FLLOCA project. Solar energy adoption is expanding, powering community facilities and promoting sustainability. These efforts have notably improved the adaptive capacity of vulnerable groups, especially women and children. Despite progress, access to climate information remains limited in remote pastoralist areas. The county aims to align its Climate Change Act with national frameworks and enhance the reach of its Climate Information Service Plan. NEMA emphasized the need for Environmental Impact Assessments for all water infrastructure. In Wajir, poor waste management remains a concern due to the absence of a sewerage system and an official disposal site, with a fecal treatment plant proposed and recommended for expansion to other sub-counties.	The County and NEMA have endorsed the proposed projects on access to water and climate resilience and fully aligns to priorities focusing on climate financing, water assets development, policy developments, waste management support and community livelihoods support
2	7/4/2025	County Department of Water	Wajir	The County Water Department confirmed that the project aligns with priorities to improve water access for communities, livestock, and agriculture. However, demand spikes during dry seasons strain county resources, with costly emergency responses like water trucking and rehabilitation. Flooding and unplanned settlements add complexity to infrastructure needs. While community participation in water management, including conflict resolution and leveraging local knowledge, was valued, there is a need for more support to help communities manage resources effectively. Governance remains a key challenge, as past attempts to pass a County Water Bill failed, and Water Users Associations struggle with accountability. WAJWASCO, the county utility, faces limited capacity and community resistance and lacks licensing. The department recommends focusing on high-yield boreholes, strengthening governance, revisiting the Water Bill, enhancing WAJWASCO's operations (possibly through rural and urban sub-units), and securing national government support for large-scale water investments.	The county has welcomed the proposal and believe the project will enhance access to water for communities-household, livestock, climate resilient livelihoods and institutions such as schools, hospitals etc.

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3	7/4/2025	NEMA	Marsabit	The County has designated an official dumpsite located approximately 15–17 km from the town. However, widespread illegal dumping continues to occur, particularly within residential areas, leading to serious environmental concerns. Designated site doesn't meet the minimum requirements set by EMCA law, Sustainable Waste Management Act, and the Waste Management Regulations Despite the allocation of the dumpsite, its operationalization remains a challenge. Currently, it is merely an open ground that does not meet the minimum ten criteria required by NEMA for a compliant waste management site. The community has called on the government to allocate more resources to properly develop, equip, and manage the site to ensure it serves its intended purpose and prevents further environmental degradation.	The proposed project, which aims to establish a climate-resilient waste management system, is therefore timely and well aligned with community needs. Through a combination of infrastructure development and capacity building, the project will not only enhance waste handling practices but also empower communities with the knowledge and skills to sustainably manage waste, mitigate climate impacts, and protect public health.
4	7/4/2025	Director of Environment	Marsabit	Marsabit, a water-scarce county, heavily relies on boreholes, many established with the support of development partners. Water trucking is commonly used to supply water for both livestock and domestic needs, particularly in areas facing extreme water scarcity. The county has significant potential to harness surface water, especially during the rainy seasons, although challenges persist. The water table is steadily declining, with reliable yields now found at depths of up to 500 meters. Many boreholes also face issues with high salinity levels in the water. Pollution of potential surface water sources is becoming a growing concern, largely due to inadequate solid waste management in Marsabit town. Notably, waste management is coordinated by the Department of Urban Planning rather than the Department of Environment, indicating a gap in integrated environmental management.	The County is in dire need of water resources for both domestic and livestock use. With proper waste management, surface water can be utilized as a viable source of water for domestic and livestock
5	8/4/2025	Deputy Director NDMA Marsabit	Marsabit	The NDMA issues a monthly early warning bulletin for drought, using data like the Vegetation Condition Index (VCI) and Standardized Precipitation Index (SPI), while collaborating with KMD, WFP, and ICPAC on early action plans. However, the county faces challenges with only seven rainfall monitoring stations covering a vast area, limiting the resolution of early warning data. Key gaps include the need for improved flood modeling, clearer anticipatory action thresholds incorporating vulnerability indicators, and better county-level financing, as audits show less than 1% of the allocated 2% development budget for disaster risk management is used. Communication channels, including DRM committees, bulk SMS, and local radio, could also be strengthened for more timely and localized information dissemination.	The proposed activities align well with the county's identified needs, particularly in addressing current gaps in flood modelling, integrating vulnerability into early warning thresholds, and strengthening county-level budgeting for anticipatory action. These focus areas will enhance the effectiveness, ownership, and sustainability of early warning and response systems across the county.

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6	8/4/2025	County Commissioner	Marsabit	Key discussions from the County Commissioner's office emphasized the impact of sporadic rainfall on water availability in Marsabit County and the need for strengthened coordination and climate adaptation. The office plays a vital role in project oversight as part of the county's steering committee and co-chairs the disaster management committees with the Governor, ensuring coordinated responses. Strengthening early warning systems was highlighted as a priority, with a recommendation for the Kenya Meteorological Department to establish at least one additional weather station in the county. Waste management challenges were also raised, particularly due to illegal dumping at an unfenced and unplanned 10-acre designated dumpsite. To address environmental degradation, the office proposed sustainable tree planting using indigenous species and the establishment of community tree nurseries as a long-term strategy to combat desertification.	The discussions underscored the importance of a coordinated, multi-sectoral approach to addressing water scarcity, climate change impacts, and environmental degradation in Marsabit County. With the County Commissioner's support for the project and community consultations, there is a clear opportunity to strengthen local ownership, improve preparedness through enhanced early warning systems, and promote sustainable environmental practices. Prioritizing investments in resilient water infrastructure, proper waste management, and afforestation using indigenous trees will be key to building long-term climate resilience and improving the well-being of communities in the county.
7	8/4/2025	Director of Public Health	Marsabit	Discussions with the Marsabit County Public Health and Sanitation Director revealed critical health challenges, including high Global Acute Malnutrition (GAM) rates—particularly in Laisamis—and increasing climate-related diseases like Kala-azar. Cholera hotspots were linked to shallow wells and seasonal water points, with open defecation near these areas compounding health risks. Flooding near Moyale heightens vulnerability to waterborne diseases and displacement. There is a strong need to integrate sanitation, hygiene promotion, and household water treatment into the project to address these risks. Community Health Promoters (CHPs) play a vital role in health surveillance and awareness, despite funding gaps. The suspension of USAID-funded programs has strained health efforts, though local radio stations remain a key communication channel. The county has an anticipatory action plan but lacks funding for full implementation.	The integration of sanitation and hygiene promotion into water access interventions emerged as a key priority to address the rising cases of malnutrition, emerging diseases, and health-related vulnerabilities linked to climate impacts. Strengthening the role of Community Health Promoters, operationalizing the County's Anticipatory Action Plan, and improving household-level water treatment and sanitation practices will be essential for enhancing community resilience.

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8	8/4/2025	Director of Agriculture	Marsabit	There is strong alignment between the proposed Adaptation Fund project and ongoing government and donor-supported initiatives in the county. Institutions like the World Bank and ADB are supporting climate-resilient agriculture, food security, and livestock commercialization through strategic dams, boreholes, and irrigation schemes. Despite progress, capacity gaps remain in soil and water management, and there is a need for a more integrated approach. Successful pilots—such as fish farms, shed nets, and greenhouses—offer models for scaling. Traditional governance systems, especially among the Borana, play a key role in local resource management. Challenges include poor borehole management, political interference, limited community engagement, and resource competition between crop and livestock sectors. The Community Land Act provides an opportunity to address land conflicts and promote sustainable rangeland management. Expanding crop diversity and constructing large sand dams were identified as key priorities to enhance resilience.	The proposed project is strongly aligned with county priorities and ongoing efforts to enhance climate resilience, food and nutrition security, and sustainable livelihoods. While current initiatives—such as those supported by the World Bank and AfDB—are making progress, key gaps persist in farmer capacity, governance, and access to quality water and soil resources. The project offers an opportunity to bridge these gaps by leveraging existing county structures and traditional governance systems, scaling successful pilot interventions, and promoting integrated approaches across crop and livestock production to drive long-term, sustainable impact.
9	8/4/2025	Kenya Meteorological Department (KMD)	Marsabit	Discussions with the Kenya Meteorological Department (KMD) in Marsabit County highlighted increasing climate variability and erratic rainfall, which are disrupting agriculture and water management. The county currently operates only two meteorological stations, limiting accurate forecasting. KMD emphasized the need for more localized rain gauges and meteorological infrastructure to enhance early warning systems. KMD remains central in climate information dissemination but faces funding constraints, particularly for airtime on local radios—key communication channels for rural communities. Even when messages are shared, low awareness and limited understanding reduce their impact. Despite some progress in participatory disaster planning, lack of dedicated funding has hindered proactive response. Strengthening infrastructure, communication, and community capacity is critical for effective climate adaptation in the county.	KMD's expressed needs strongly align with the proposed project's objectives to enhance climate resilience and early warning systems. This alignment received broad support, confirming the relevance and urgency of the planned interventions.

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10	8/4/2025	Garissa County - Water department (County Director- Water-administration)/ Water Resources Authority NEMA	Garissa	The interventions proposed for Lagdera and Dadaab focus on addressing critical water scarcity issues, including drought, declining water tables, and groundwater salinity. These areas, which are heavily reliant on water trucking, require sustainable water solutions, especially given the high population and livestock numbers due to migration. The county has initiated several projects, such as drilling boreholes and extending pipelines, but challenges like low-yielding boreholes and frequent breakdowns persist. To enhance sustainability, the county plans to invest in operation and maintenance, including stocking spare parts, training communities on water management, and incorporating these initiatives into their development plans. Additionally, renewable solutions like solar-powered boreholes and ecological water pans are part of the strategy, while strengthening local water management structures like Water Users Associations will foster greater community ownership and improve service delivery.	The department supports and endorses the proposed project, emphasizing its alignment with county water priorities. To strengthen implementation and sustainability, they recommend several key measures: drilling high-yielding boreholes along river courses (e.g., in Balambala and Baraki areas); flood-proofing boreholes using protective structures like gabions; constructing additional strategic boreholes to prevent over-pumping; maintaining a stock of fast-moving spare parts; operationalizing rural water supply management guidelines through GARUWASCO by transitioning community-managed boreholes under its oversight; and solarizing boreholes to reduce operational costs and enhance efficiency.
11	8/4/2025	Ministry of Interior, County Commissioners office NDMA	Garissa	The county's Early Warning Systems (EWS) for climate hazards are constrained by delays, limited budgets, and weak coordination. Although disaster management is devolved, the County Commissioner often leads coordination efforts due to the absence of a structured office, resulting in communication delays—especially to riverine communities. Strengthening the EWS requires localized, accessible communication through administrative units, toll-free numbers, radios, and community focal persons, with messages tailored to local dialects. Trigger indicators for anticipatory action include vegetation cover (for drought), weather forecasts (for floods), and river gauge levels monitored by the Water Resources Authority. Existing infrastructure—such as a reactivated disaster response team, local risk management structures, and a 2% emergency budget—offers a foundation for intervention. However, formalizing and reinforcing these systems is critical to ensure more timely and effective disaster preparedness and response.	The County Commissioners office plays a critical role of coordination during disasters and emergencies within the county. Partnership with the ministry of Interior and coordination is critical but capacity building and system strengthening is necessary. NDMA was only mandated to respond to droughts but the mandate need to be expanded to include other disasters such as flood.

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12	8/4/2025	County Government of Garissa	Garissa	The proposed project aligns with the county's climate adaptation strategies, integrating with the Climate Adaptation Act and ongoing initiatives like FLLoCA and the 12 Mega Project. It can be anchored within existing climate change structures, including committees and regular stakeholder meetings, with funding from both the county and external partners. Key capacity-building needs include mainstreaming climate action, addressing technical and resource gaps, and strengthening community capacity in climate-smart agriculture and information use. Youth engagement will be enhanced through 30% representation in climate interventions, with youth groups and CBOs involved in CSA projects. The county's GIS lab, supported by Mercy Corps and FAO, can enhance data collection and knowledge-sharing, while the DRC platform, once finalized, will improve coordination in climate action.	The county's Climate Change Department, led by a Director, coordinates all climate change action programs. It has conducted a County Participatory Climate Act Assessment and developed a Climate Action Plan to guide implementation by partners. A structured framework from the ward to county level supports climate action activities. The County Government allocates 2% of its budget to emergency programs through the Department of Special Programs. Additionally, relevant departments like Environment, Water, and Climate Change can co-fund the project, utilizing both the emergency fund and the special program budget.
13	9/4/2025	Department of Agriculture/ Departrment of livestock Department of irrigation	Garissa	The area faces significant water challenges, including a mindset that prioritizes water for livestock, deteriorating boreholes, overuse of groundwater, rapid village growth, and water access disputes. The shifting course of River Tana displaces farmers, while high salinity in some water sources complicates farming. Building resilience requires climate-smart agriculture, sand dams, and water harvesting, but resource conflicts, unsustainable use, and communal land ownership hinder progress. Effective solutions include designing water systems that cater to both farmers and pastoralists, training local committees on water management, and implementing nature-based solutions like tree nurseries, with successful models such as the NEMA adaptation village offering valuable insights for future interventions.	The department supports and endorses the proposal, noting its alignment with ongoing water-related livelihood projects. These include the Islamic Relief project, which focuses on boreholes and water pans, BREFON, which builds resilience for food and nutrition, and the Emergency Locust Response Program (ERLP). The county-led Food Security Resilience Project, embedded within the National Government, as well as FLLoCA, which aims to improve water access and climate resilience, are also aligned with the proposed interventions. These initiatives collectively support efforts to enhance water access and build resilience in the region.

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14	10/4/2025	Chief of Water	Marsabit	There is a pressing need for stronger governance and regulatory frameworks to support the rapid expansion of water infrastructure, particularly the increase in boreholes from 20 in 2013 to 240 currently. Despite significant investments, service delivery remains inadequate due to policy and operational challenges, with draft policies like the County Water Act yet to be finalized. Water Users Associations (WUAs) are not regulated by the water department, and face capacity gaps in operations and maintenance. Efforts are underway to professionalize water management by establishing smaller Water Service Providers (WSPs) for low-yield boreholes. Water quality is a concern due to high salinity, with reverse osmosis being a costly solution. Additionally, high evaporation rates and low groundwater recharge further threaten water security. The department emphasizes the need for diverse water harvesting approaches, such as rock catchments and increased storage capacities, alongside regular water quality testing, with the county currently managing 169 water pans.	These insights strongly align with the adaptation project's objectives, particularly its focus on enhancing water governance, improving water quality, and promoting climate-resilient infrastructure. The project's support can play a critical role in accelerating the review and implementation of existing draft policies, strengthening the institutional capacity of Water Users Associations (WUAs), and piloting innovative and sustainable water treatment options such as low-cost reverse osmosis and solar-powered systems. In addition, the promotion of alternative water harvesting technologies—including rock catchments, larger capacity storage tanks, and desilting of existing water pans—will reinforce the county's efforts in addressing high evaporation and groundwater recharge challenges.
15	10/4/2025	WRA	Marsabit	A key issue raised was the declining water levels, with boreholes now being drilled as deep as 500 meters compared to shallower depths in previous years—an indication of aquifer depletion and changing hydrogeological conditions. In response, initiatives such as a regional project led by the Horn of Africa are underway to recharge aquifers, aligning with the county's existing Sub-Catchment Management Plan. Despite these efforts, the county still faces governance challenges due to the pending enactment of the Water Act, which has limited the regulation and oversight of Water User Associations (WUAs) Additionally, WRA noted that many sand dams have experienced water pollution due to mismanagement, particularly from unrestricted livestock access. The quality of water from boreholes is another concern, with high levels of salinity common across the county. While reverse osmosis has been considered as a treatment method, its cost and technical demands pose barriers to widespread adoption. The water quality monitoring function is also hampered by limited financial resources and staffing shortages.	There's a need for sustainable water resource management in Marsabit, highlighting declining groundwater levels, water quality challenges, and governance gaps. Ongoing interventions, such as aquifer recharge projects and sub-catchment planning, offer valuable entry points for collaboration. However, to ensure long-term impact, there is a need to strengthen regulatory frameworks, build local capacity, and invest in affordable water treatment solutions. The priorities raised align well with the objectives of the adaptation project and present opportunities for integrated and community-centered approaches.

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16	11/4/2025	County Department of Health	Wajir	The County Health Team highlighted WASH access, ODF strategies, and water quality as key priorities. Past projects, such as RMNCAH and KSHIP, supported ODF progress, but USAID funding cuts disrupted continuity. Climate change has worsened health and nutrition outcomes, with droughts increasing malnutrition and floods damaging health facilities, leading to diarrhea outbreaks from contaminated water. Flooding has also exacerbated the spread of diseases like Kalazar. While SHA/SHIF funds now support Community Health Promoters (CHPs) in Level 2 and 3 health facilities, more CHPs are needed. Waste management remains a significant challenge in peri-urban areas due to inadequate infrastructure, training, and community plans. Top priorities include improving water access for health facilities, scaling up CLTS, water treatment, training CHPs, building health worker capacity, and using radio and other platforms for community sensitization.	The county health team welcomed the integrated program that will focus on the 5 outcome areas creating synergy and delivering holistic approaches in addressing climate resilience and water security.
17	11/4/2025	Kenya Meteorological Department (KMD)	Wajir	The County KMD office faces significant challenges in disseminating climate information due to budget constraints, limiting their outreach to end users. While forecasts are shared with county governments and partners via email, broader public access remains restricted. KMD has participated in Participatory Scenario Planning (PSP) forums, supported by partners like Mercy Corps and WFP, and has developed sector-specific advisories. However, there is a need to enhance KMD's technical capacity, particularly in using tools like the Standardized Precipitation Index (SPI). The installation of five automatic weather stations has improved data reliability, though they require regular servicing, and manual rain gauges, supported by volunteers, are also in use. To improve access to climate information, leveraging local FM radios, integrating messaging into extension services, and incorporating community events is essential. Recommended interventions include building KMD's technical capacity, enhancing dissemination through PSPs and community channels, and investing in digital data collection tools.	There is need to enhance access to climate information and advisories especially to communities. The climate information is critical for livestock keepers especially for decisions like destocking during predicted poor rainfall performance. Data collection and need to integrate technology in climate science and access to climate advisories.

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18	11/4/2025	Wajir Community Radio,	Wajir	Wajir Community Radio, led by Halima Kahiye, is a vital tool for climate adaptation communication, covering 270 km across six subcounties. It connects communities with duty bearers, especially as the region faces climate change impacts like water scarcity, reduced grazing land, conflicts, and diseases. The radio collaborates with Mercy Corps for resilience-building programs, amplifying community discussions and promoting climate-resilient initiatives. However, challenges include a lack of organized rangeland management in Wajir, unlike neighboring Isiolo, and the fading of indigenous climate knowledge among youth due to cultural shifts. The radio provides weather forecasts, emergency messages, and advocates for proactive climate action. Recommendations emphasize building capacity for fire management, investing in education to embed climate information in youth culture, strengthening partnerships to expand climate information reach to remote areas, and training youth for climate reporting and advocacy to enhance community resilience and response strategies.	The manager of Wajir Community Radio welcomed the integrated program that will focus on the 5 outcome areas creating synergy and delivering holistic approaches in addressing climate resilience and water security. She emphasized that access to climate information services for the hard to reach nomads is key to resilience building agenda.
19	11/4/2025	MARWASCO	Marsabit	The team discussed ongoing projects that could complement or enhance the proposed interventions, emphasizing the need to expand storage capacity with reinforced concrete tanks and increase access through additional water kiosks. The professionalization of borehole management was highlighted as crucial for ensuring consistent service delivery and maintenance. While some mini-dams have been developed, there was a recommendation for a larger dam to serve a wider population, as heavy rainfall in certain seasons often goes to waste due to inadequate harvesting and storage, leading to shortages in dry periods. Bakuli Dam was mentioned as a successful model for replication. With 90% of boreholes in the county producing saline water, alternative water sources are necessary to meet community needs. The discussion also focused on sustainability beyond the project cycle, with lessons from USAID STAWI on the importance of comprehensive planning and selecting impactful projects. Enhancing water access to schools and healthcare facilities through strategic connections was emphasized. Additionally, the county is working on registering all boreholes, including private ones, under the Water Service Providers (WSP) and conducting a borehole mapping process for better management.	Emphasis was placed on leveraging existing initiatives, expanding water storage, and improving water access through professionalized management and infrastructure upgrades. The alignment of the proposed project with MARWASCO's priorities particularly on sustainable water harvesting, quality improvement, and equitable service delivery presents a strong foundation for collaboration.

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20	11/4/2025	Pacida	Marsabit	The project aligns well with community needs, and PACIDA is already active in several of the proposed intervention areas. In the water sector, PACIDA has successfully implemented a prepaid water system, where community members purchase tokens for water by the jerrycan, enhancing accountability and strengthening revenue collection. They have also installed three reverse osmosis systems at boreholes with high salinity, allowing the use of otherwise non-potable groundwater sources. Rangeland management has been another focus area, with positive results from the involvement of community elders in protecting trees and other environmental resources, prompting encouragement to scale up these activities. While anticipatory action is recognized as valuable, its impact is often limited by a lack of funding for proactive implementation. Additionally, robust waste management, particularly during droughts when livestock carcasses pose significant pollution and disease risks, was highlighted as an essential need.	In conclusion, the project is well aligned with the needs of the community and ongoing efforts by local actors such as PACIDA. The alignment across water resource management, rangeland restoration, and environmental protection highlights strong potential for collaboration and impact. Recognizing the challenges around anticipatory action—particularly the lack of predictable funding—the project will also prioritize strengthening county-level budgeting and planning for anticipatory measures as part of the activities under Component 3.
21	11/5/2025	FH	Marsabit	The discussions highlighted the need to address the challenges posed by the increasing number of boreholes and the importance of groundwater recharge, especially during the rainy season. Proposals included developing check dams and infiltration structures to aid groundwater replenishment. While efforts like solarizing borehole pumps have been made, storage capacity remains a challenge, particularly during the rainy season. Rangeland conflicts due to uncoordinated borehole drilling and land use issues were noted, with recommendations for clear zoning to prevent clashes. The high salinity in groundwater, especially in areas like North Horr, was raised, with potential solutions such as salt-tolerant crops and reverse osmosis technologies, though costly. Strengthening local ownership, particularly through women and youth engagement, was emphasized, along with the need to improve climate information dissemination, which is hindered by limited meteorological stations. Enhancing climate change committees and simplifying climate messages were seen as key to improving outreach.	The issues raised ranging from groundwater recharge, water storage, salinity, rangeland conflicts, and limited climate informatioN align well with the project's focus on resilience-building. Strengthening existing structures, enhancing local capacities, and prioritizing inclusive, integrated planning will be key to ensuring long-term sustainability and impact.

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22	14/4/2025	County Director, Department of Agriculture	Mandera	The discussions highlighted the need to strengthen water management strategies to enhance resilience in agriculture and pastoralism amidst climate change. Key strategies include investing in water infrastructure, promoting climate-smart agriculture, and integrating community-based approaches. Support from institutions like the Water Resources Authority and the Ministry of Water is essential, along with improved access to climate information. Challenges include recurrent droughts, flood damage, limited water storage, and conflicts over water. Coordination with county programs like FSRP and FLLOCCA is crucial. Past project lessons emphasize the need for better community ownership, sustainable water interventions, and stronger training for water management committees. Legal compliance requires increased public sensitization and regular audits.	The county government has expressed strong support for the project, emphasizing the importance of community-led water governance and co-investment to ensure sustainability and ownership. Lessons from past projects stress the need for strong community involvement, proper maintenance, and avoiding unsustainable solutions like small water pans and water trucking. Security risks in border areas must also be carefully considered. For long-term success, interventions should align with county priorities, integrate climate early warning systems, and enforce institutional compliance through accountability and transparency.
23	14/4/2025	Environment Director	Mandera	The project aligns with county development priorities by focusing on water access, ecosystem restoration, and agricultural support to enhance climate resilience. It will need to undergo environmental screening and comply with regulations such as EMCA and NEMA approvals. Proper site selection, with clear land ownership and community consultation, is crucial to avoid conflicts, especially in border or shared areas. Key challenges include overgrazing, weak rangeland management, and insufficient enforcement capacity. Cross-sectoral collaboration is limited, highlighting the need for coordinated efforts across departments like water, livestock, and environment. Youth engagement and consistent climate change knowledge-sharing are essential for sustainability and community ownership.	The project should focus on enhancing ecosystems and building community resilience through tree planting, improved water access, climate-resilient agriculture, and alternative livelihoods. Strengthening rangeland management via community committees and rotational grazing is crucial. Effective implementation will require multi-sectoral coordination through technical working groups, joint planning, and shared data systems. Strengthening local communication platforms, such as FM radio, community forums, and digital channels, will be key to maintaining awareness and information sharing.

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24	16/4/2025	Online consultations with water sector stakeholders Mandera including the county water department and water utilities	Mandera	The County Water Department highlighted that multiple geohydrological surveys have already provided valuable data for groundwater development, reducing the need for further studies. They suggested exploring surface water sources to complement groundwater, addressing occasional salinity issues in boreholes. The inclusion of waste management in the project was well-received, as was the focus on improved land management for environmental sustainability and water protection. The proposal to revamp the County Environment Committee was strongly supported, emphasizing its role in coordinating environmental initiatives. Water utilities fully supported the project, especially in system management, aligning with ongoing discussions of the Water Bill in the Mandera County Assembly. Water point management in rural areas, currently under the County Water Department, will soon transition to utilities. Stakeholders also noted the World Bank Horn of Africa initiative, suggesting that lessons from it could benefit the current project, as additional sites are needed to meet demand.	The project aligns well with both county priorities and community needs. Successful implementation will require close collaboration with the County Water Department and utilities to avoid overlap and ensure the sustainable management of water sources. The proposal was adapted to include a greater focus on surface water collection, particularly by increasing the number of sand dams.

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iii. Community Consultations

	Date	Village/Community Unit	Proposed Intervention	Key Highlights	Conclusion
1	8/4/2025	Habaswein, Sabena, Zeitun, Banane 11M, 9W		Community members strongly supported the proposed interventions to address drought, water scarcity, and food insecurity, emphasizing the impact of climate shocks like floods, droughts, and extreme heat. Critical challenges include limited water for crops, pest infestations, wildfires, and environmental degradation from unplanned settlements and deforestation, worsened by the presence of refugee populations. The community highlighted the need for permanent water sources such as boreholes, pans, and small dams, alongside promoting pasture regeneration, solar-powered water systems, and improved water storage. They also stressed the importance of pest control, agronomic support, and extension services to boost crop production. Furthermore, they expressed concerns about the limited coverage of climate information, relying on SMS and radio, and called for stronger local leadership and governance to ensure effective water resource management and avoid past project failures.	There was strong support from elders, farmers, water users, and women's representatives for initiatives focused on securing water sources and improving climate resilience. They stressed the importance of addressing both water and livelihood challenges, with a particular focus on ensuring community involvement throughout the entire project, from planning to implementation. Key aspects highlighted included securing water sources, promoting climate-resilient livelihoods, and ensuring effective governance for sustainability.
2	8/4/2025	Kargi Town 15M, 7W	Drill new boreholes for community water supply to schools, healthcare facilities and communities	The community has observed a significant reduction in rainfall, leading to sporadic and unpredictable weather patterns, along with the occurrence of disaster-related events like windstorms that recently affected over 100 households. Additionally, the river's course has changed over time. Early warning systems are in place, with support from various stakeholders including disease reporters, Community Health Promoters (CHPs), climate change committees, and local administrators. The community has access to nine boreholes, though only one is suitable for domestic use due to high salinity in the others, leading to health issues like kidney complications. Besides formal early warning systems, the community also relies on traditional methods, such as animal behavior observations, but faces delays in receiving timely information. The community expressed a need for increased sensitization and capacity-building to better interpret and act on early warning messages. Women face challenges with long queues at water points, leading to household conflicts, while both women and youth called for more inclusive capacity-building initiatives.	The community was receptive to the proposed project. However, given the existing number of boreholes, there were strong suggestions to prioritize extending water supply through piping to reach underserved areas. Additionally, the community recommended the installation of a reverse osmosis system to address the high salinity levels in available borehole water, making it safer and more suitable for domestic use.

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3	8/4/2025	Odda 13M, 7W	Construction of sanddams and subsurface dams	Community consultations in this area revealed that irregular rainfall has led to both water scarcity and frequent flooding, damaging infrastructure, causing erosion, and siltation of water pans. Gullies have disrupted access routes, worsening isolation. Odda borehole—the town's main source—frequently breaks down, especially during population influxes, forcing residents to travel long distances and pay high water prices (KES 30–50 per 20L). Women and girls are disproportionately affected, walking up to 7 km and risking injuries. Despite fertile soils, lack of irrigation water limits crop production. Climate information is accessed via radio, TV, and traditional forecasts, though early warning systems remain weak. Communities proposed improving borehole management, installing water meters and large storage tanks, expanding supply networks, promoting kitchen gardens, and establishing a dedicated borehole for irrigation.	To address the persistent water challenges in Odda, community members recommended establishing an alternative borehole specifically for crop production, connecting water taps directly to households, and implementing environmental conservation and ecosystem restoration programs. They also suggested supporting alternative livelihoods such as beekeeping and irrigated agriculture to improve resilience and food security.
4	8/4/2025	Rhamu Dimtu, Kalicha, Kalmalab and Shangala 15M, 7W	Sand dams/water pan, ecosystem restoration,	Communities across the four villages are experiencing severe effects of climate change, including erratic rainfall, prolonged droughts, and extreme weather events like floods and locust invasions. These conditions have led to reduced crop yields, increased livestock mortality, and rising school dropout rates. Only one borehole, located in Rhamu Dimtu, is currently operational, serving as a crucial water source. During the dry months, the cost of a 20-litre jerrican can rise to KES 50, significantly burdening households—especially women, who often travel long distances to access water. When boreholes function normally, water costs between KES 10–15, but breakdowns result in reselling within communities at inflated rates of KES 30–50. The absence of functional sand dams and limited seasonal rivers further restricts viable water storage options. Key issues highlighted include inadequate coordination structures, high energy costs, weak governance in project management, and limited inclusion of women, youth, and marginalized groups in decision-making. Communities emphasized the need for sustainable water infrastructure, including piped water systems, regular maintenance, solar-powered solutions, and technical support to enhance resilience. Early warning systems are in place through SMS, radio, and local communication, but challenges remain in interpretation and timely action.	Three proposed sites—Rhamu Dimtu, Kalmalab, and Kalicha—have been identified as viable locations for sand dams and water pans due to the presence of suitable catchment areas and seasonal streams (lagas) that flow for about a month during periods of good rainfall.

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5	8/5/2025	Watiti 9M, 16W	Drill new boreholes for community water supply to schools, healthcare facilities and communities	The Waititi community faces recurrent climate shocks, including extreme heat, prolonged droughts, and erratic rainfall, which have led to reduced crop yields and significant livestock losses. The primary water pan for livestock is located 7 km away, while households rely on an underperforming borehole where a 20-litre jerrican costs KES 50, making water access expensive. Despite these challenges, the community has diversified livelihoods into bee-keeping, poultry farming, and small-scale trade. A water management committee is in place, implementing rationing measures and restricting livestock access to the water pan during dry periods. The community underscored the importance of early warning systems to prompt timely action such as pasture preservation and destocking. To build resilience, they proposed installation of large water storage tanks, expansion of water distribution networks, and introduction of alternative energy sources to supplement solar power during cloudy days.	The community recommended developing a new borehole with a focus on inclusivity, ensuring women are involved in all stages of the project. They emphasized the importance of female facilitators for group discussions. Additionally, water scarcity has led to social issues like divorce and domestic violence. The community proposed creating climate-friendly livelihoods to enhance resilience and reduce vulnerability.
6	9/4/2025	Anona 23M, 11W	Construction of sanddams and subsurface dams	The community has observed several signs of climate change, including rising temperatures, unpredictable rainfall, frequent flooding, and increased soil erosion, leading to gully formation. Traditional farming methods, such as dry planting, are no longer effective due to unreliable rains, and maize crops are failing to germinate as they once did. Adaptation strategies include roof water harvesting, trekking to distant water sources like Golole, and adopting climate-smart agricultural practices. Sand dams are scarce, with few existing, and rivers flow only briefly after rainfall. Early warning information is gathered through observing traditional signs like unusual livestock behavior and changes in tree patterns, as well as using technology such as AI apps, KALRO websites, media, and cultural gatherings. Coping mechanisms include grass harvesting, rotational grazing, destocking, water trucking by the county government, and grass regeneration through area closures.	The community is open to sand dams but prefers water pans, considering them more effective for their water needs. They highlighted an existing silted water pan that, if expanded and desilted, could greatly improve water access. Women in the community are well-informed and play an active role in decision-making committees concerning climate change.

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7	9/4/2025	Arbajahan, Garsekoftu/Noorgose, Wel Athi, Fatumanur 15M, 9W		Residents, including farmers, pastoralists, and women, highlighted water scarcity driven by erratic rainfall, prolonged droughts, and degraded traditional water sources. Climate change impacts such as floods, rising temperatures, and disease outbreaks (e.g., Kalazar) were also noted, along with the spread of invasive Prosopis juliflora. Main water sources include deep boreholes and water pans, but some villages lack direct access and depend on water trucking. Adaptation strategies include crop diversification, poultry farming, destocking, and livestock migration. The community emphasized the need for integrated water and climate-smart livelihoods, including solar-powered systems, irrigation, and expanded crop production. Priorities include improving water access through piping, borehole equipping, and water pan excavation, as well as rehabilitating flood-damaged infrastructure, regulating unplanned settlements, and building capacity for local groups, youth, and women. They also called for better contractor oversight and the establishment of a local waste disposal site.	The community welcomed the proposed project, expressing strong support for its potential to address recurring water challenges. They recognized its role in enhancing climate resilience through livelihood diversification and improved livestock and crop productivity.
8	9/4/2025	Goro Rukesa 13M, 7W	Construction of sanddams and subsurface dams	The community currently relies on a single borehole, with the nearest alternative water source located 8 kilometers away. They expressed a preference for a piped water system as a more sustainable solution, while a proposed sand dam was deemed unfeasible due to the absence of laggas or seasonal rivers. A previous attempt to drill a borehole by a church was halted due to resource limitations, with the region also facing high salinity in the groundwater. Water prices are inflated due to the long distance, with community members paying KES 25–50 for a 20-litre jerrican. The area has been severely affected by droughts, leading to livestock loss and malnutrition, prompting a shift towards camel farming as an adaptation strategy. Although WFP had supported rangeland management plans, tribal conflicts disrupted the efforts. Early warning information is shared through radio broadcasts, but the community struggles to act on these messages effectively. Women raised concerns about their exclusion from decision-making processes, with many issues remaining unresolved.	The community expressed a strong need for piped water, additional boreholes, and water treatment solutions like reverse osmosis. There is support for climate-resilient interventions, including livelihood diversification, rangeland restoration, and improved early warning systems. However, gaps remain in information access, interpretation, and inclusivity, particularly for women and youth. The community called for more inclusive decision-making and capacity-building to strengthen adaptation efforts and ensure the sustainability of proposed projects.
9	9/5/2025	Golole 25M, 4W	Drill new boreholes for community water supply to schools, healthcare facilities and communities	The community has noticed clear signs of climate change, including severe droughts, drying surface water sources, erratic rainfall, and reduced borehole water yields. These changes have resulted in increased migration of people and livestock, longer water queues, and higher pumping costs, with a 20-litre jerrican now priced at KES 20. Early warning information is gathered through radios, traditional forecasting, and social gatherings. To cope, the community has adopted strategies like hay harvesting, pasture enclosures, livestock migration, selling livestock, and	The community is supportive of the development of a new borehole, recommending that it be strategically placed to alleviate pressure on existing sources and improve access for users traveling from remote areas.

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				switching to drought-resistant animals like camels.	
10	10/4/2025	Afwein 9M, 6W	Sand Dam, Water Pans	Afwein is a predominantly pastoralist community that frequently faces drought, relying primarily on a water pan located 3-4 km away for both domestic and livestock water. However, the water pan is small and often destroyed by floods, drying up during extended dry seasons. During these times, water trucking, supported by the community, NDMA, or the county government's water department, is used. The community also engages in small-scale subsistence farming. Key climate change effects in the area include flash floods causing dam overflow and siltation, altered rainfall patterns, prolonged droughts leading to migration, insecurity, and the spread of diseases such as cholera and typhoid, as well as competition for resources impacting livelihoods. Last year's El Niño rains severely damaged the community's water pan. The community prefers a new borehole for domestic water use, to be drilled around 16 km from the settlement, where the aquifer is fresh and not saline. Water pans are considered the best solution for livestock water. The community also supports the construction of sand dams and sub-surface dams for rangeland management, pasture production, erosion control, and as a water source for domestic use that can be piped to the community. To ensure the sustainability of water systems like boreholes, the community suggests contributions through water payments and household fees, with the Water Users Association being the preferred management structure, supported by the county government and GARUWASCO. However, capacity building is needed as the community has never managed a borehole before. Challenges include managing water pans due to conflicts between pastoralists, farmers, and domestic water use, highlighting the need for separate pans for livestock.	The community endorsed several key interventions to improve water access and resource management. These include drilling a 200mm borehole in a nearby freshwater aquifer and piping water to existing steel tanks, exploring the feasibility of sand dams and gabion protection work, and desilting and expanding water pans to increase storage capacity from 50,000m³ to 100,000m³. Additionally, they recommended conducting water users and management training to ensure sustainable resource and infrastructure management, as well as introducing ecosystem restoration initiatives to enhance the overall resilience of the community.

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11	10/4/2025	Bute, Bute godha, Adadjole, Ogorji, Gurar 14M, 9W	Drill new boreholes for community water supply to schools, healthcare facilities and communities	Despite being a high rainfall and crop-producing area, the community has experienced declining rainfall patterns, increased droughts, invasive plant species, and dried-up shallow wells, all linked to climate change. Water access remains a major challenge, with reliance on water pans that frequently dry up or get damaged, forcing women to travel long distances under unsafe conditions. Health risks are high due to untreated water use, and solid waste pollution—mainly plastics from across the border—further threatens water quality. Livelihood losses are common during droughts, but the community is adopting adaptive practices like drought-tolerant crops, bee-keeping, and fodder storage. Community structures like IWUAs and cooperatives are in place but need capacity building. Poor project governance, limited county support, and substandard construction have undermined past interventions. The community emphasized the need for water infrastructure, desilting and excavation of new pans, waste management systems, and greater involvement from planning to implementation stages. Women highlighted how improved water and climate-resilient projects could boost their roles in food production and household nutrition.	Overall, the community members were satisfied with the proposed projects and committed to support for continuity and sustainability.
12	10/4/2025	Kotkoto/ Wangaidan/ Harbillow/ Kobadadi	Sand dams/water pan, ecosystem restoration,	Communities reported increasingly unpredictable climate conditions, with alternating periods of intense rainfall and prolonged droughts—some lasting 3–4 years. Rising temperatures and the destructive El Niño rains were particularly noted, damaging key infrastructure like earth pans. These climate changes have severely impacted water access and livelihoods, causing livestock loss, reduced crop yields, and increased reliance on migration and shallow wells. Droughts have led to longer distances in search of water, while floods have triggered disease outbreaks and disrupted transport. Proposed water interventions like sand dams were generally well received, particularly where seasonal streams exist, though concerns about land ownership and lack of precedent were raised. Boreholes were considered less viable in some areas due to high salinity and low yield. Communities emphasized that sustainability of climate-resilient projects depends on community ownership, functional management committees, regular maintenance, and training. Solar-powered systems, water access for animals, fish farming, and market linkages were suggested to enhance livelihoods. However, environmental degradation from overgrazing, deforestation, and poor governance remains a major challenge. While early warning messages are received through radio, elders, and social media, communities still depend on traditional signs, and awareness levels remain low. Women and marginalized	Despite facing severe climate conditions, including droughts, erratic rainfall, and resource conflicts, the community is actively adapting using traditional knowledge, migration, and collective action. However, challenges such as salinity in boreholes, land tenure issues, gender inequalities, and fragmented governance hinder the full potential for climate resilience. The consultation highlights the need for inclusive, locally tailored, and participatory approaches in adaptation efforts, with a focus on empowering women, youth, and marginalized groups.

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				groups face added burdens—long treks for water, lost income, and limited voice in decision-making	
13	10/4/2025	Laguyata 10M, 9W	Borehole Rehabilitation Desilting/ redesign of existing water pan Sand dam/ check dams	Laguyatta village, located about 5 km from Maalmin town, is a pastoralist community frequently impacted by drought. The community struggles with a lack of sustainable water sources as their water pan is silted and dilapidated, and a borehole drilled in 2021 is non-operational due to saline water and pump issues. Water trucking and individual underground water tanks are the main sources of water. The community is also vulnerable to frequent flooding, which damages infrastructure such as houses and latrines, and disrupts livelihoods. The community's preferred water interventions include desilting and rehabilitating the destroyed water pan, solarizing the existing borehole, and adding another water pan for agricultural and livestock use. They also recommend constructing sand dams and check dams to prevent further siltation of water pans. For sustainability, the community proposes paying for water and contributing to household costs, with water management handled by a Water Users Association supported by the county government. However, challenges include managing water pans to prevent conflicts between pastoralists, farmers, and domestic water users.	The community endorsed the following interventions to address their water and livelihood challenges: rehabilitation of the existing borehole with a new pump and solarization; drilling a 200mm borehole in a freshwater aquifer within Laguyatta to supply water to both Laguyatta and Maalimin, with water piped to existing steel tanks; redesigning, desilting, and expanding the water pan to increase storage capacity from 50,000m³ to 100,000m³; exploring the feasibility of sand dams and gabion protection works; conducting water users and management training for sustainable resource management; and introducing ecosystem restoration initiatives.

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14	10/4/2025	Maalimin 14M, 0W	Drilling of new borehole Development of new water pan Sand dam/ check dams	The Maalimin community, consisting of five sub-villages and hosting migrants from Liboi/Somalia and Wajir West, relies on a 50,000m³ water pan as its primary water source, which also serves neighboring communities. An old borehole drilled by a Chinese contractor during road construction is not operational and has not been handed over to the community. Key climate change effects include flash floods that cut off roads and bridges, siltation of the water pan, changing rainfall patterns, long droughts leading to migration, insecurity, diseases like cholera and typhoid, and competition for resources affecting livelihoods. The community prefers interventions such as drilling a new borehole based on a hydrogeological survey by UNICEF or tapping into a nearby fresh aquifer, and piping the water to the community. They also recommend constructing an additional water pan for agricultural and livestock use and building sand dams or check dams to prevent siltation of the water pan and support pasture development.	The Maalimin community has endorsed interventions to improve water access, including drilling a new borehole, developing a 300,000m³ mega water pan, expanding and desilting existing water pans, and providing water management training. They also support ecosystem restoration initiatives to enhance sustainability and resilience.
15	10/5/2025	Elgadhe	Construction of sanddams and subsurface dams	The community, despite being a high rainfall and crop-producing area, is facing declining rainfall patterns, increased droughts, and the spread of invasive plant species, all attributed to climate change. Water access is a major issue, with reliance on water pans that often dry up or get damaged, leading to long and unsafe journeys for women. Health risks from untreated water and solid waste pollution, particularly plastics, further threaten water quality. Livelihoods are frequently lost during droughts, but adaptive practices like drought-tolerant crops, bee-keeping, and fodder storage are being implemented. While structures like IWUAs and cooperatives exist, they require capacity building. The community noted past challenges, including poor governance, limited county support, and substandard construction of projects. They stressed the need for improved water infrastructure, desilting and excavation of new pans, better waste management, and more involvement in planning and implementation. Women emphasized that climate-resilient projects could enhance their roles in food production and nutrition.	The community around Elgade, located slightly farther from the river, sees the "Lagga" (an intermittent stream or riverbed) originating from Ethiopia as a potential site for sand dams. This presents an opportunity for complementary activities, particularly in conjunction with ongoing WFP interventions, such as spate water diversion to a nearby farm. By constructing a sand dam at the same location, the riverbed levels could be raised, enabling easier water diversion for agricultural use. Additionally, the community has recommended the development of a new borehole to support both household water needs and livelihood activities, thereby improving water security and agricultural productivity in the area

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16	9/4/2925	Karare *M, 12W	Development and/or rehabilitation of community-validated climate resilient and sustainable water infrastructure including stormwater harvesting and storage and groundwater for small-scale irrigation	The community is still recovering from the 2022–2023 drought, which severely affected livelihoods by wiping out much of their livestock. They noted increasingly erratic and delayed rainfall, with droughts so severe that even desert trees have died—an indicator of worsening desertification. These conditions have also led to increased school dropouts. The community relies on one main borehole piped to serve several community units; however, it is currently non-functional. When operational, water cost approximately KES 10 per 20-litre jerrican. Since the breakdown, prices have surged to KES 30–40, increasing the burden on households—particularly women and vulnerable groups. Rangeland management structures are in place, supported by an active committee that enforces regulations. Fines and penalties are imposed on individuals who breach grazing agreements, helping to sustain the fragile ecosystem. Women face significant challenges during water shortages, often walking long distances into unsafe areas. The community advocated for pipeline extensions and improved infrastructure to ease access and reduce risks for women.	The community has expressed strong support for the proposed interventions, especially those focused on improving access to safe and affordable water. With the sole borehole currently non-functional, households—particularly women—face increased hardship due to longer travel distances and higher water costs. This highlights the urgent need to rehabilitate the existing infrastructure and expand water access through pipeline extensions.
17		Kiliwehiri, Wara, Borashum, Derkale	Sand dams	The consultation highlighted the community's struggles with climate change, particularly unpredictable rainfall, increasing temperatures, and droughts, which lead to water scarcity and loss of livelihoods. Communities have adapted by migrating with livestock, planting early-maturing crops, and relying on water sources such as seasonal streams, boreholes, and water pans. However, challenges like land ownership issues and dependency on rainfall remain, especially for proposed water infrastructure projects. While some boreholes, such as those in Kiliwehiri, have proven effective, others, like the one in Banisa, have issues with salinity, making them less viable. Sustainability requires better management, solar power solutions, and functional water committees. Environmental issues like deforestation, overgrazing, and rangeland degradation need urgent attention, with tree planting and land restoration efforts recommended. Early warning systems rely on traditional knowledge and modern methods, but the community requires additional support in preparedness and infrastructure. Empowering women, youth, and marginalized groups is essential for improving decision-making and strengthening local climate resilience. Women face specific challenges in water access, with long distances leading to physical harm and social risks. The community suggests better water points, inclusion in management, and economic	Community adaptation strategies involve early maturing crops, livestock migration, and water management, but land ownership issues, limited funding, and weak coordination hinder the success of interventions. Key recommendations include sustainable water projects such as sand dams, solar-powered boreholes, and piped water systems, along with inclusive governance that involves women and youth in decision-making and water committees.

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				empowerment to alleviate these challenges.	

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Picture 2 UNICEF/WFP meeting with the Governor Wajir County and team during the County Stakeholder engagement

Picture 1 FGD with women and girls only for a gender persepective discussions

Picture 3 Community consultations at Karare Village, Marsabit County

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Annex 13 Stakeholder engagement plan

Will be submitted in next round

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Annex 14: Sustainability of interventions

Project Components	Outputs	Sustainability Interventions
1. Climate-resilient Water Access for Human and livestock Consumption	Output 1.1: Enhanced capacity of Water Resource Management Institutions and professionals for sustainable groundwater development and management in ENRB	Engagement with the state department of water, sector professional societies and water industry association to review the existing syllabus, define relevant skills and deliver continuous professional development (CPD) for sustainable groundwater management. The emerging learning will be included in the review of subsequent national water policy, legislation and regulations to entrench quality CPD by professional societies, registration boards and associations.
	Output 1.2 Improved rain/floodwater harnessing for Managed Aquifer Recharge (MAR) and Nature-based Solution (NbS)	Hydrological and climate risk analysis that ensures Environmental and Social Safeguards, do no harm and do more good principles and gender responsive considerations will inform site selection, design and construction of the structures for Managed Aquifer Recharge (MAR). Small Scale water providers and /or regulated water utilities will be established to operate and maintain the water conservation structures.
	Output 1.3: Climate-resilient groundwater infrastructure developed and in operation in target communities within ENRB counties	Hydrogeological and climate risk analysis for each proposed site that ensures Environmental and Social Safeguards, do no harm and do more good principles and gender responsive considerations will inform the site selection, design and construction of the new or upgraded infrastructure and risk mitigation measures. Small Scale water providers or regulated water utilities will be established to operate and maintain the infrastructure.
	Output 1.4: Strengthened financial management capacity of Water Services for sustainable water service delivery in the context of climate change	Alignment to the Water Act 2016, national water management policy 2021, water services regulations 2021 and the national water regulator sector performance benchmarks. Socio-economic assessment will inform the tariff structure to ensure affordability and pro-poor approaches. The emerging learning will be utilized to inform review of existing regulations for rural communities to further strengthen sustainability.
2. Ecosystem restoration and climate resilient livelihoods for food and nutrition security	Output 2.1: Prioritized rangeland resources including land are brought under restoration, safeguarded and sustainably managed for improved climate change resilience	Formation and strengthening of Rangeland Management Committees (RMC) with representation of women, youth and marginalized groups, anchored within the county departments of environment and livestock production. The RMCs will be supported to develop and implement community-led rangeland management plans and linked with the Water Resources Users' Associations (WRUAs) to integrate sub-catchment management into the broader land restoration plans.

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	Output 2.2: Community-validated climate resilient water infastructure developed and or rehabilitated for food security	Site selection, implementation and management of rehabilitated/developed water infrastructure will be embedded on water management committees who will be trained on best practices (financial management, on farm water management) and skills on operation and maintenance of the infrastructure. The committees will be anchored/ supported by the county government departments of agriculture and livestock for multiple-use systems. Ecosystem restoration will contribute to long term safeguarding of water sources against siltation and related high recurrent rehabilitation needs, in addition to contributing to groundwater recharge.
	Output 2.3: Climate-smart agriculture and sustainable production technologies promoted at community level for climate-resilient livelihoods	Farmer to farmer extension networks will be supported in addition to scaling the Farmer Service Centre (FSC) model to provide capacity building and extension services to ensure continuous knowledge transfer and guidance. Smallholder farmers will also be supported with linkages to providers of inputs as well as market linkages.
	Output 2.4: Improved household access to nutritious and diversified diets, contributing to enhanced livelihood resilience	Households will be capacity-built to access, preserve and consume nutritious and diversified foods produced through climate resilience water access interventions. A system strengthening approach will be utilized to engage Health Workers and Community Health Promoters (CHPS) to influence adoption of appropriate household food consumption behaviours for children, adolescents and women.
3. Enhanced early warning systems and anticipatory action	Output 3.1: Flood EWS accuracy improved by incorporating more data using existing open source flood models	The Google flood model that will be used is freely available online, leading to no continued costs on the model site. The model will be integrated in the existing early warning structures at the county level operated by the County KMD, ensuring government ownership.
	Output 3.2: Improved Anticipatory Action triggers defined in updated plans, integrating (child) vulnerability in target counties and nationally	The updated anticipatory action plan and triggers will be led by the County government. By supporting the budgetary process, the aim is to ensure adequate budget to be set aside to by the government to support the AA interventions. By including this in the budget cycle, the sustainability of the intervention will be ensured.
	Output 3.3: County budgeting process for Anticipatory Action strengthened	See 3.2
	Output 3.4: Early Warning Communication systems improved to effectively reach last-mile communities	To ensure sustainability, the activity builds the capacity of local radio broadcasters and county early warning actors (KMD, NDMA) to deliver timely, locally tailored warnings. Training will emphasize inclusive, culturally relevant messaging that strengthens community trust and action. By embedding these practices into existing systems, the

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		intervention promotes long-term, community-responsive early warning communication.
4. Systems strengthening for enhanced and inclusive climate adaptation coordination and knowledge management	Output 4.1: Enhanced capacity of the Ministry of Water and County Climate Unites in targeted ENRB Counties for inclusive and participatory climate adaptation planning and coordination in the water sector.	This activity strengthens institutional systems by embedding inclusive adaptation planning practices into existing water governance structures, ensuring ongoing coordination and ownership by County Climate Units and the Ministry of Water.
	Output 4.2: National Adaptation Plan (NAP) updated through an inclusive and participatory process incorporating feedback from key stakeholders, including youth and ENRB County Representatives	Sustainability is ensured through a participatory update process and the integration of a monitoring framework, enabling long-term tracking, institutional alignment, and stakeholder engagement in national adaptation planning.
	Output 4.3: Increased capacity of youth in targeted ENRB counties to meaningfully participate in climate adaptation governance and action	By equipping youth with governance and advocacy skills, this output fosters long-term civic engagement and supports intergenerational leadership in climate adaptation at local and county levels.
	Output 4.4: A functional and regularly updated climate change and adaptation knowledge platform established and used by the Ministries, County Climate Units, Youth, and other stakeholders in targeted ENRB counties	The platform institutionalizes knowledge sharing and coordination among stakeholders, ensuring sustained access to data, tools, and best practices for informed adaptation planning and decision-making.
5. Enhanced water quality through climate resilient waste management	Output 5.1: Enhanced technical capacity of relevant institutions in targeted ENRB Counties for water quality monitoring and enforcement related to waste management.	By embedding water quality monitoring tools and training into county systems, this activity enables long-term enforcement and adaptive management of pollution risks under changing climate conditions.
	Output 5.2: Increased access to climate-resilient waste management infrastructure	Sustainability is supported through training and institutional strengthening, ensuring that infrastructure is properly managed and maintained beyond the project lifespan.
	Output 5.3: Improved knowledge and adoption of safe and climate-resilient waste management practices and the importance of water quality monitoring within communities and institutions	By integrating awareness-raising with practical training, this output drives behavioral change and reinforces community-level stewardship of water and waste resources under climate stress.

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	Output 5.4: Strengthened organizational capacity of county environmental committees in ENRB Counties to develop, implement, and monitor policies and actions addressing waste-related water pollution.	The activity institutionalizes policy-making capacity within county committees, supporting long-term implementation and monitoring of locally relevant pollution control measures.

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ID	Category	Risk Area	Risk Type	Risk Description	Mitigation Actions	Likelihood	Impact	Residual Risk Seriousness
1	Strategic	Programme	Funding insufficient	Insufficient skill/experience to effectively implement programmes and/or ensure field readiness. Funding is insufficient to implement programme activities both planned and emergencies, like; a. Resilient activities, climate change and nutrition programmes. b. Common services including United Nations Humanitarian Air Service (UNHAS). c. Single donor reliance for key activities and the Adaptation Fund at large. This is attributed to increased needs, shifting donor	1. Scenario Planning: Develop contingency plans for different funding scenarios. This can help you quickly adapt to changes in funding. 2. Financial Analysis: Regularly review your financial health and adjust your strategies accordingly. 3. Regular Communication: Keep donors informed about how their contributions are making a difference. Regular updates and reports can build trust and loyalty.	3	5	15

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				priorities leading to underachievement or failure for UN organizations to meet its objectives.				
2	Strategic	Programme	Skill shortage/mismatch	1. Funding is insufficient to implement programme activities 2. Government agencies may lack the institutional capacity, technical expertise, and resources to effectively implement and manage anticipatory action programs.	1. Diversify donor base & institute cost-effective measures. 2. Enhanced resource mobilization and strengthened partnerships with UNICEF, UNESCO, UNEP, GoK and other UN agencies and development partners. 3. Increase engagement of donors.	4	5	20
5	Strategic	External Relationship	Misalignment with UN system, governments, partners or non-state actors	Inadequate partnership and third-party management	1. Map out government structure to analyse areas for expanded collaboration, coordination and communication. 2. Distribute responsibilities between Outcomes to eliminate duplication, confusion and elimination. 3. Develop engagement strategies through collaboration with all concerned senior management. 4. Carry out spot check on partners during the implementation of activities 5. Ensure biannual County	3	3	9

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					Consultations are done and recommendations tracked and implemented. 6. Feedback from evaluation process and all complaints raised by FOs will be employed to inform further engagement with CPs			
6	Strategic	Context	Conflict	1. Conflicts over water resources between different user groups (e.g., farmers, pastoralists, domestic users) due to increased scarcity. 2. Food insecurity due to conflict involving state and/or non-state armed groups and/or civilians, communal violence, electoral violence.	1. Develop and maintain climate-resilient water access systems. 2. Encouraging economic and livelihood diversification can reduce dependency on scarce resources. 3. Dialogue and Mediation: Establishing platforms for dialogue and mediation can help address grievances and foster mutual understanding. 4. Resource Management: Implementing sustainable resource management practices, such as rotational grazing and water-sharing agreements, can reduce competition over resources. 5. Social Capital: Building social capital through community activities, joint decision-making, and shared economic ventures can strengthen relationships and cooperation between the group. 6. Policy and Legal Frameworks: Developing and	3	5	15

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					enforcing policies that clearly define land and resource rights can help prevent disputes. This includes land tenure reforms and legal recognition of pastoralist rights. 7. Anticipatory Actions: Establishing early warning systems to detect and address potential conflicts before they escalate.			
9	Strategic	Context	Natural disaster	1. Depletion of groundwater resources due to over-extraction or prolonged drought. 2. Food insecurity due to natural geophysical or biological hazard (e.g. flooding, drought, earthquakes, epidemics).	1. Undertake Environmental & Social Impact Assessments and geological surveys before embarking on program implementation. 2. Regular assessment of impact (floods and drought) through Short Rains Assessments (SRA), Long Rains Assessments (LRA), Standardized Monitoring and Assessment of Relief and Transitions (SMART). 3. Coordination and collaboration with government and other development partners on preparedness, response and recovery actions. 4. Further engagement and research on remote programme implementation. 5. Allocate additional resources for climate-proofing infrastructure and enhance efforts to climate-proof the target counties. 6. Monitor impact on efforts to promote Good Agricultural Practice (GAP), crop diversification and empowerment of (Farmer Service Center) FSCs. 7. Sensitizing beneficiaries on	3	5	15

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					weather resilient farming. 8. Assess the impact of Adaptation Fund activities in relation to climate change and environment risk through the Engineering team /Technical teams. 9. Continuous assessments and reporting on the Adaptation Fund climate change initiatives in line with risk management. 10.Anticipatory Actions and utilization of early warning reports.			
10	Strategic	Business model	Weak/poor execution	1.Failure of newly constructed water infrastructure (e.g., boreholes, water pans) due to unforeseen geological issues, poor construction quality, or extreme weather events. 2. Inadequate selection, development or delivery of technology or innovation to meet intended outcomes compromises the Adaptation Fund's ability to serve beneficiaries and/ or threatens the Fund's relevance in addressing	1. Capacity building of staff, government representatives and communities. 2. Undertake rigorous site monitoring, supervision and spot checks. 3. Develop SOPs and blueprints for all planned projects, 4. Ensure that procurement standards are adhered to when selecting contractors to design and construct assets. 5. Ensure that engineering team and standards are adhered to before awarding contracts.	3	4	12

				community needs.				
13	Operational	Beneficiary_Health_Safety_and_Security	Lack of protection	1. Failure to prevent, detect and respond to Prevention of Sexual Exploitation and Abuse (PSEA), Harassment, Sexual Harassment, Abuse of Authority (HSHAAD) in the workplace and towards beneficiaries. 2. Ineffective sensitization tools to fight and report Gender Based Violence (GBV). 3. Insufficient tools to effectively support people with disability. The above is attributed to inadequate systems and poor planning resulting into reputation damage, ineffective processes.	1.Ensure a Complaints and Feedback Mechanism Helpline in place (including P1 case communities). 2. Establish PSEA focal points at Country Office (CO) and in all field offices (FO) and PSEA clauses in all Field Level Agreements (FLAs). 3. Develop SOPs on handling cases. 4. Sensitize staff, partners, and beneficiaries on Protection from Sexual Exploitation and Abuse (PSEA). 5. Undertake Annual gender and protection assessments in host communities. 6. Identify Gender and protection Focal Points at CO and FO. 7. Review the Control oversight checklist annually. 8. Sensitize community on hotline numbers and recourse mechanisms.	3	5	15

14	Operational	Partners_and_Vendors	Inadequate availability or capacity	Lack of capacity for effective Government partnerships, attributed to insufficient investment in partnering; limited capacity within the Government to engage with the UN; government staff turnover, resulting in delay or even failure of planned activities.	1. Memorandum of Understanding (MoU) with individual county governments-including cost-sharing provisions. 2. Technical guidance and trainings for county governments. 3. Engage government sectors and departments during budgeting cycle to ensure Adaptation Fund activities are supported activities are aligned with government plans and priorities. 4. Undertake joint capacity needs assessment and quarterly progress reviews. 5. Formalized commitments by County Government (CG) in terms of policy validation and signoff by Governor. 6. Regular monitoring and identifying interim solutions for gaps noted.	4	4	16
15	Operational	Business_Process	Supply chain disruption	Normal and continuous sourcing, transport, storage, handling and/or distribution (of assistance) is interrupted. Delays in other critical business processes impact delivery or programme activities or assistance. Pipeline breaks attributed to long lead times, supply chain bottlenecks, government regulation resulting to Adaptation Fund	1) Negotiate humanitarian cargo movement as applicable. 2) Monitor markets for availability of products, increase in prices for both fuel and other transport costs and food. Also monitor exchange rates and impact on cost of all items. 3) Implement operational adjustments as required, which may include changes in food basket composition and/or assistance modalities (e.g. in-kind vs CBT or vice versa depending on the local market situation. 4) Expand the local suppliers for food and nutritious products and get the support from GCMF	3	5	15

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				implementing organizations inability to meet our demand.	to increase our local purchase through Small Holder farmers, traders and nutritious products. 5).Enhancing our transport and supply chain intelligence to anticipate any changes in the market and be able to adapt. 6). Structures in place to allow for dialogue with government/Adaptation Fund Implementing organizations on changes. 7. Ensuring informed contingency plans.			
16	Operational	Business_Process	Disruption from change programmes	Ongoing programmes or support activities are interrupted due to the implementation or changes from new organizational initiatives.	The government's capacity to coordinate with the implementing organizations and other partners, its decentralization policies, and its ability to mobilize resources at the county level are important considerations.	3	5	15

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17	Operational	Governance_and_Oversight	Inadequate monitoring, reporting or escalation	1). Frequency and/or intensity or monitoring and reporting is incommensurate with the scale and complexity of the programme. 2). Unclear escalation path and authority. 3). Failure to employ monitoring and evaluation recommendations to improve processes. 4). Ineffective and untimely communication to stakeholders of key findings from studies and outcome monitoring exercises hence affecting the Adaptation Fund's reputation and donor confidence. 5).Failure to broadcast the impact of Adaptation Fund's activities for communities and GoK at large. The above is attributed to inadequate planning of different process and lack of coordinated and informed processes resulting into lack of confidence in our stakeholders and	.1. Joint multiagency assessments: - including joint assessment missions in EWASO Nyiro Catchment Area (3participating counties - Marsabit, Wajir & Garissa) 2. Joint food systems strengthening approach with partners. 3. Joint capacity needs assessments. 4. Set targets on broadcast and monitor success levels (Contracting external evaluation company to provide technical expertise). 5. Modify programme design using evidence from studies and outcome monitoring. 6. Formal commitment / progress reports on utilization to be in place beyond annual work plan. 7. Support direct engagement between the FOs of implementing organizations and the local government to ensure close monitoring of the process. 8. Regular review meetings with Government partners and communities. 9. Setting and training committees to manage structures provided by organizations implementing the Adaptation Fund.	3	5	15

				maintaining inadequate processes that don't meet all our stakeholder needs.				
12	Fiduciary	Breach_of_Obligations	Donor agreements	Underutilization of Donor Funds and Grants with Tight Terminal Disbursement Dates (TDDs): Non-compliance with donor earmarking and conditions often stems from inadequate communication and engagement with beneficiaries during program design and implementation. This issue is frequently attributed to insufficient knowledge and research at the project's inception, as well as poor	1. Monthly Review meetings focused on grant management and on the pipeline. 2. Bilateral meetings with each strategic outcome on Resource Utilization. 3. Ad hoc Taskforce meeting for exceptional cases.	3	5	15

				planning and tracking of fund utilization throughout the project's lifecycle. Additionally, donors' reluctance to review and amend terms exacerbates the problem. Consequences of these challenges include: - Erosion of donor confidence. - Disruption in service delivery. - Reputational risk when World Food Programme (WFP) commitments are unmet.				
13	Fiduciary	Fraud_and_Corruption	Corruption	Dishonest or unethical conduct for personal gain by a person or a group of people entrusted with a position of authority (e.g. bribery, collusion)	1 Increased sensitization on Anti-Fraud & Corruption (AFAC) & reporting mechanisms such as JIRA (Incident Tracking System), Community Feedback Mechanism (CFM), UN Agency hotline numbers of both staff & Cooperating Partners (CPs)through training. 2. Strengthen internal controls processes through regular spot-checks, self-assessments to identify gaps, enhance transparency, accountability. and address them timely. 3. Due diligence reviews through micro assessments of partners (including third party reviews).	3	5	15

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14	Financial	Price_Volatility	Price volatility	Spikes or excessive volatility in international food prices / unstable economic conditions / market disruptions /inflation / currency fluctuations / macroeconomic shocks. These cause an increase in prices of all key commodities for both staff and beneficiaries, unfavourable market conditions e.g. price fluctuations. It leads to reduction in the resource envelope for secured funding. Increased food insecurity & humanitarian needs, deterioration of security situation.	1. Continuous monitoring of the currencies. 2. Continuous monitoring of commodity prices through market assessments. 3. Continuous monitoring of the trends through the Resource management meetings. 4. Quarterly joint market monitoring (JMMI) in the ASALs and monthly price trends analysis. 5. Revision of activities due to less funding.	3	4	12
15	Financial	Assets_and_Investments	Misutilization of assets	1. Programme budget not managed appropriately (e.g. under-/over-utilization of financial/non-financial assets). 2. Failure to prevent, detect and respond to fraud and corruption exposure across the organization caused by lack of fraud risk assessments and inadequate fraud awareness to all stakeholders leading	1. Due diligence reviews through micro assessments of partners (including third party reviews). 2. Funds being disbursed through the exchequer to ensure they are visible in the National Auditing Systems (Auditor General and Controller of Budgets). 3. Spot checks for partners. 4. Direct procurement done by selected UN Agency when risk is assessed as high for a particular county. 5. Due diligence done by the Steering Committee. 6. Funds disbursed to	3	4	12

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				to; misappropriation of programme funds/resources.	implementing organizations in tranches to reduce exposure. 7. All staff working taking and passing the mandatory Fraud training.			

Likelihood Scale Scores

Score	Likelihood
1	Very unlikely
2	Unlikely
3	Moderately likely
4	Likely
5	Very likely

Impact Scale Scores

Score	Impact
1	Negligible
2	Minor
3	Moderate
4	Severe
5	Critical

Residual Risks Ranking

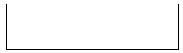
21-25 Very High

17-20 High

13-16 High

7-12 Moderate

1-5. Very likely



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