ADAPTATION FUND

PROJECT/PROGRAMME PROPOSAL TO THE ADAPTATION FUND

PART I: PROJECT/PROGRAMME INFORMATION

Project/Programme Category:	**REGULAR**
Country/ies:	**UGANDA**
Title of Project/Programme:	**ENHANCING COMMUNITY ADAPTATION TO CLIMATE CHANGE THROUGH CLIMATE RESILIENT FLOOD EARLY WARNING, CATCHMENT MANAGEMENT AND WASH TECHNOLOGIES IN MPOLOGOMA CATCHMENT, UGANDA**
Type of Implementing Entity:	**NATIONAL IMPLEMENTING ENTITY**
Implementing Entity:	**MINISTRY OF WATER AND ENVIRONMENT**
Executing Entity/ies:	**WATERAID UGANDA**
Amount of Financing Requested:	**9,504,600 US DOLLARS**

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ACRONYMS

AF	Adaptation Fund
CBOs	Community Based Organisations
CMC	Catchment Management Committee
CMO	Catchment Management Organisation
CMP	Catchment Management Plan
CSOs	Civil Society Organisations
DLG	District Local Governments
DLGs	District Local Governments
DWRM	Directorate of Water Resources Management
EE	Executing Entity
EIA	Environmental Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESP	Environnent and Social Policy of the Adaptation Fund
EUWS	Eastern Umbrella Water and Sanitation
FEWS	Flood Early Warning Systems
GP	Gender Policy of the Adaptation Fund
IGAs	Income Generating Activities
INDC	Intended Nationally Determined Contributions
KAPs	Knowledge, Attitudes and Practices
KWMZ	Kyoga Water Management Zone
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MGLSD	Ministry of Gender, Labour and Social Development
MLHUD	Ministry of Lands, Housing and Urban Development
MoE	Ministry of Education and Sports
MoFPED	Ministry of Finance Planning and Economic Development
MOH	Ministry of Health
MoLG	Ministry of Local Government
MoUs	Memorandum of Understanding
MWE	Ministry of Water and Environment
MWT	Ministry of Wildlife, Antiquities and Trade
NAP	National Adaptation Plan
NAPA	National Adaptation Programmes of Action
NDA	National Designated Authority
NDC	Nationally Determined Contributions
NDP	National Development Plan
NEMA	National Environment Management Authority
NFA	National Forestry Authority
NGOs	Non-Governmental Organisations
NIE	National Implementing Entity
OPM	Office of the Prime Minister
PWDs	People with Disabilities
SCMP	Sub-Catchment Management Plan
SDG	Sustainable Development Goals
UBOS	Uganda Bureau of Statistics
UNBS	National Bureau of Standards
UNMA	Uganda National Meteorological Authority
UWA	Uganda Wildlife Authority
UWONET	Uganda Women Network
WASH	Water, Sanitation and Hygiene
WRI	Water Resources Institute
WSDF-East	Water and Sanitation Development Faciility East

1. Project / Programme Background and Context

1.1 Project Area context

Uganda, occupies an area of 241,038 km^2, with water bodies and wetlands covering approximately a third of its total area, and standing astride the equator. Its tropical climate has an average temperature ranging from 18 ^{o}C to 28^{o}C. The country has a rich natural resource base. With an average fertility rate of 6 children per woman, Uganda has an annual growth rate of 3.2 per cent; and the population is expected to grow from the current 45.7 million to 93.4 million people in the 2040s. Over three quarters of the population is below the age of 30 years which makes Uganda one of the countries with the youngest population. Uganda's economy is largely dependent on the services industry with agriculture employing 66% of the working population and contributing to nearly one fifth of the country's GDP[1]. With such a young and rapidly growing human population that is highly dependent on natural resources and subsistence rain-fed agriculture for livelihoods, it is evident that Uganda's economy and her population are vulnerable to climate change and variability. Like other Least Developed Countries (LDCs) in East Africa, Uganda faces a major challenge of climate change characterized by changing weather patterns, drop in water levels, and increased frequency of extreme weather events. Based on the main Representative Concentration Pathways for climate change scenarios referred as a low (RCP2.6); a medium (RCP4.5) and a high (RCP8.5) emission scenario in this profile, Uganda's future climate change projections reveal that temperature increases are expected for East Africa and specifically for Uganda. Under a high-emission scenario, monthly temperature change is expected to increase by 1.8°C for the 2050s and by 3.7°C by the 2090s. Increased temperatures will also impact increased aridity and the length and severity of the dry season (December to March). Projected rates of warming are greatest in Uganda's coolest season: June to September, with temperatures expected to increase by 1.5 to 5.4°C by the end of the century. Temperature rise is therefore, projected to increase across all emission scenarios throughout the end of the century[2]. Under a high-emission scenario, monthly annual precipitation is expected to increase in some areas of the country, with deceases in others, notably the northern and north-eastern areas. Rainfall is predicted to increase significantly and consistently for the western shores of Lake Victoria and the central western region; the Mount Elgon region; and the region extending from Mount Rwenzori to the southern parts of Lake Kyoga (WBG, 2021).

Therefore, these climate projections for Uganda indicate that temperatures will rise, causing higher evaporation and consequent water stress; frequency and severity of floods and drought will also increase; and the variability of precipitation will increase too. The mean annual temperature across Uganda is projected to increase between 1.2°C and 2.3°C by 2050 and will increase to between 1.7°C and 5.6°C by 2100 [3] [4]. In the last fifty years, Uganda has experienced significant changes in its climate with average temperatures increasing by 0.28°C per decade along with increases in the frequency of hot days. Rainfall has decreased and become more unreliable and less evenly distributed. Prolonged droughts reportedly affect groundwater levels leading to drying up of boreholes and reduced lake levels consequently impeding water services provision and causing water stress to the most vulnerable among rural and urban communities. Reduction in rural water supplies, reduced flow in rivers, less dilution/increased concentration of pollutants in water and challenges to hygiene practices were the key impacts of climate change on the WASH sector following reductions in rainfall/drought identified[5]. Similarly, pollution of wells, inundation of wells, inaccessibility of water sources, flooding of latrines, damage to infrastructure, landslides around water sources, sedimentation and turbidity, challenges to sustainability of sanitation and hygiene behaviours and waterborne diseases are key impacts of increase in precipitation/flooding (UNICEF, GWP (2014, rev.2017). The projected damage associated with climate change inaction for agriculture, water, road infrastructure and energy (2010-2050) is estimated to cost between US$273 and US$437 billion, equivalent to US$7-US$11 billion per annum (MWE 2015). UNHS (2017) reported that the major cause of poverty rise from 19% to 36% was attributed to drought (75%), storms (25%) and floods (15%). Poor sanitation and hygiene is a big health concern especially to the rural poor and those living in slums in towns. Lack of clean water and poor hygiene and sanitation are the leading causes of diarrheal related diseases, which are responsible for 17% of all deaths among children below five years[6]. In Uganda, 33% of children do not have access to safe water and 60% of children live 30 minutes walking distance from a water source. Three out of 10 Ugandans don't have a latrine[7].

With the increasing human population and rapid urbanization that leads to high concentration of people in urban centres such as small towns and rural growth centres, climate change impacts pose an enormous challenge especially floods (and landslides) that have reportedly led to pollution of wells, inundation of wells, inaccessibility of water sources, flooding of latrines, damage to infrastructure, landslides around water sources, sedimentation and turbidity, challenges to

[1] FAO, 2018. National gender profile of agriculture and rural livelihoods – Uganda. Country Gender Assessment Series, Kampala.
[2] WBG, (2021). Climate Risk Profile: Uganda (2021): The World Bank Group.
[3] World Bank (2015). Uganda Climate Profile.
[4] USAID (2013). Climate Change Vulnerability Assessment for Uganda
[5] UNICEF, GWP (2014, rev.2017). WASH Climate Resilient Development, Strategic Framework
[6] www.ugandavillage projecr.org
[7] www.unicef.org

sustainability of sanitation and hygiene. Such challenges are aggravated by lack of and inadequate Flood Early Warning Systems (FEWS) and strategies to fore warn the human populations against such vagaries. Unfortunately, climate change impacts are most felt by the poorest and most marginalised in society whose vulnerability is often exacerbated by reduced access to reliable and safe WASH services[8] [9], inadequate FEWS and technologies, over-dependency on climate sensitive subsistence agriculture and degraded natural resources and ecosystems as well as limited sources of alternative sources of incomes. Recently, Uganda experienced beyond normal rainfall that unfortunately resulted in loss of lives, destruction of property and brought businesses and livelihoods to a standstill. These rains caused extreme landslides and flooding in parts of western and eastern Uganda[10]. The impacts of climate change (droughts, floods, storms, heat waves and landslides) will most likely reduce the benefits derived from the natural resource base and this will have serious consequences on overall development. Since 2010, rainfall variability in Uganda alone has caused crop yield losses worth an annual equivalent of US$6 billion/year (MWE 2015).

One of the areas that is severely affected and highly vulnerable to extreme landslides and flooding is Eastern Uganda in Mpologoma catchment. Mpologoma catchment covers 7,862 square kilometres of land area and 1,127 square kilometres of water area. It is one of the catchments within the Kyoga Water Management zone that is bordered on the south by a narrow strip of the Victoria Water Management zone that forms a boundary with Lake Victoria. At the extreme north east, it boarders Mount Elgon. The catchment is characterized by a variety of ecosystems such as wetlands, farmlands, bush land, and forest land. It is relatively a flat area with about 16% of the total area covered by wetlands. Wetlands act as silt filters, so that much of the transported sediments are retained within the wetlands and other vegetated areas, but some transported silt is also deposited in the piedmont where the slope becomes less steep, creating flood-prone zones and flood hazards in the Manafwa and Mbale areas. Furthermore, Mpologoma catchment is reportedly experiencing more erratic and unpredictable rainfalls, both in amount, duration, and intensity in recent years all attributed to climate change.[11] The human population in the catchment estimated to be 4,093,340 people and growing at a rate of 3.2% per annum[12] is vulnerable to the impacts of climate change (MWE, 2018). As with other parts of Uganda, the human population in the catchment is highly dependent on climate sensitive subsistence rain-fed agriculture and a multitude of natural resources. This population exerts increasing pressure on water and land resources, resulting in tremendous degradation of the environment. The high population also leads to over-exploitation and destruction of ecosystem resources. Such degradation impedes the coping ability of populations against climate change and renders the people therein especially those inhabiting fragile ecosystems highly vulnerable to landslides uphill and floods in lowlands following high rainfall events. Extreme weather events coupled with natural resource degradation, subsistence rain-fed agriculture and limited livelihoods have not only led to landslides and floods but also resulted in increased pollution of water resources, unsafe water sources and outbreak of waterborne diseases such as diarrhoea, typhoid and cholera and land conflicts related to competition for arable land. Therefore, climate change not only exacerbates health, food security, water scarcity, water insecurity and water quality problems in drought prone areas but also equally impairs similar attributes and water quality in areas susceptible to floods and landslides that equally negatively impact on water and sanitation facilities. The human population in Mpologoma catchment is susceptible to water and sanitation related diseases due to floods and landslides aggravated by limited, unsustainable and unreliable Flood Early Warning systems and strategies. The current FEWS involving the sensor monitoring systems that were installed by the Ministry of Water and Environment are inadequate resulting in continued destruction of water infrastructure, flooding of water supply pipes, flooding of latrines with high occurrence of water borne diseases, loss of assets, properties, lives and general water insecurity due to pollution and contamination and food insecurity due to crop losses in the catchment. The current FEWS is dysfunctional because of limited capacity of MWE, partners and communities to maintain the system. Consequently, the batteries run out and faces the great risk of being vandalised. This system was installed between the years 2014 and 2015 to detect the river levels that have the potential of causing floods downstream. The MWE worked on the installation of the equipment while Uganda National Meteorological Authority (UNMA) was to package the early warning information. There is a need to strengthen the capacity of existing FEWS in the catchment by improving on the current FEWS technology to incorporate locally available materials, indigenous knowledge and scaling up the improved and upgraded FEWS to other areas for wider applicability. Such system and/or technological improvements not only facilitate the sustainability of maintaining and protecting the FEWS but also the generation, analysis, packaging and transmission of timely early warning information to the communities and their leaders so that they can easily plan how to cope with floods and landslides.

Although the overall supply of safe water at national level is about 77%, it stands at 64% urban and 63.4% rural in Mpologoma catchment area which is definitely far below the national statistics. In all the sixteen districts in the catchment, only Bududa is reported to have safe water coverage above national level. Only two districts of Mbale and Tororo have a

[8] Everyone Everywhere 2030 - WaterAid Global Strategy 2015-2022
[9] WaterAid (2019) Policy brief for the 2019 High Level Political Forum
[10] NEMA, 2019. Floods in Parts of Uganda. http://www.nema.go.ug/media/floods-parts-uganda. Accessed December 20th, 2019.
[11] Ministry of Water and Environment, 2018. Mpologoma Catchment Management Plan. Kampala.
[12] UBOS, 2014. National Population and Housing Census 2014

central sewage system[13]. With water and sanitation services negatively impacted by floods and landslides, the women and children suffer more in terms of time spent collecting water, risk of diseases and sexual abuses[14]. Also, the children are the most vulnerable to unclean water and poor sanitation related diseases like cholera and typhoid. Similarly, acute water shortages sometimes hit the catchment area due to landslides and floods that damage the water supply infrastructure. For example, according to the Daily monitor newspaper of 8th October 2018, Manafwa and Tororo districts were hit by acute water shortage due to landslides that damaged the water pipe network at Soona water treatment plant in Namisindwa District[15]. Therefore, there is a need to develop, maintain and scale up a floods and landslides forewarning system to alert the human populations if such impacts are to be reduced to the least minimum. Although in 2014, a sensor flood monitoring system was installed in Butaleja district along Manafwa river[16] by the ministry of water and environment, it has remained largely ineffective with limited coverage up to a radius of 5km hence further limiting its application to the local situation of the populations in the catchment. Overall, despite continued increase in frequency of floods and landslides, community access to climate resilient WASH services and FEWS are largely limited, inadequate, ineffective and the capacity of the communities to adapt to climate change has remained low. WASH is vital for adaptation to climate change by increasing water availability in periods when water is scarce or inaccessible for domestic uses to ensure food, health and livelihoods security as well as meeting the basic needs of households. Through improved development and application of effective FEWS and access to climate resilient WASH technologies, vulnerable communities can realise improved water supply, sanitation and hygiene and improved coping ability resulting from overall reduced disease burden among the poorest and marginalised members of the community in the catchment. Therefore, it is inevitable to develop integrated flood early warning systems (FEWS) and WASH interventions aimed at reducing their vulnerability, increasing resilience and enhancing the capacity of the vulnerable human populations to easily adapt to climate change impacts of floods and landslides. Fortunately, WaterAid Uganda (WAU) is collaborating with Directorate of Water Resources Management (DWRM), the Water Resources Institute (WRI); Kyoga Water Management Zone (KWMZ) and the Eastern Umbrella for Water and Sanitation (EUWS) of the Ministry of Water and Environment, and the Uganda Women's Network (UWONET),) to enhance resilience of communities, schools and health units against flooding and landslides through development and implementation of climate resilient FEWS and WASH in the catchment. The proposed consortium of organisations will be responsible for designing, implementing and monitoring FEWS, water and sanitation as well as catchment management interventions within and outside Mpologoma catchment.

The proposed project intends to build on the existing initiatives of WAU in eastern Uganda and undertake new interventions aimed at building the resilience of communities to climate change. The project will focus on Strengthening institutional capacity for planning, designing, implementing and monitoring integrated Flood Early Warning systems (FEWS) and climate-smart WASH technologies; Facilitating communities to undertake adaptation actions for reinforcing resilience of populations and ecosystems against floods and landslides by: developing and showcasing climate-smart WASH-related technologies and activities at demonstration sites within the catchment, for (e.g. flood-proof latrines, wastewater re-use, waste management, fecal sludge management, non-revenue/waste water reduction, multi-use water options, rainwater harvesting, water point and sub-catchment protection measures (including soil conservation measures, wetland rehabilitation, restoration/protection of river banks and reforestation); source water point protection and recharge; building capacity of district and regional water, health and education, government and other stakeholders to support and model climate resilient approaches to water, sanitation, hygiene and waste management in schools and health care facilities; supporting communities to undertake WASH climate change adaptation actions and enhance knowledge management and skills sharing in FEWS, climate resilient WASH and Catchment Management technologies. The proposed project is designed to contribute towards the implementation of the Paris Agreement commitments on Nationally Determined Contributions (NDCs), Uganda's National Climate Change Policy 2015 and the National Adaptation Plan, Uganda Green Growth Development Strategy (UGGDS) in line with the new National Development Plan III (NDPIII-2020/21-2021/25) that aims to ensure that goals of the Uganda Vision 2040 are attained in a sustainable manner. In this regard, the project will contribute to the recent ongoing environment management reforms in Uganda attempting to decouple the expected industrialisation and urbanisation from the historically corrected environmental degradation challenges as proposed in the Environment Act, 2019 .The project will also contribute to the African Union (AU) Agenda 2063 regarding expanded and improved access to the necessities of life: water and sanitation and is aligned to Vision 2040 regarding adaptation and mitigation of the effects of climate change. The project will further contribute to Uganda's implementation of the developed National Adaptation Plans (NAPs) as well as attainment of Sustainable Development Goals (SDGs) targets under SDG 6 (Water and Sanitation) along with others including SDGs 2 (Zero hunger),3 (health), 4 (education), 5 (gender), 13 (Climate Action), 15 (Life on earth),16 (peace, justice and strong institutions),and SDG 17, (e.g.17.17 encouraging and promoting effective public-private and civil society partnerships). These synergies and

[13] https://www.mwe.go.ug
[14] Csbag.org
[15] https:/reliefweb.int
[16] https:/www.itu>ews-UGANDA

linkages with so many other sectors position WASH at the forefront of the fight against climate change. A WASH-secure and healthy community or country has the foundations on which to build a comprehensive climate change response[17].

1.2 Selection and description of the project sites

The proposed project will be implemented in different sites upstream, midstream and downstream areas within Mpologoma catchment (Figure 1). These sites are considered to be most vulnerable and prone to floods and landslides and to climate change impacts. The sites were selected for the proposed project based on the following criteria:

- The sites experience high rainfall variability with increasing frequency and intensity of floods and landslides
- There is high environmental degradation (vegetation and soil degradation), loss of biodiversity resources (flora and fauna) as well as the deterioration of water (quality and quantity) and water resources on which communities depend for alternative livelihoods.
- Most communities practice and depend on rain-fed subsistence agriculture and have low-incomes and limited livelihood options to enable them cope with floods and landslides and associated climate change impacts.
- Socially, there are many vulnerable members among the communities especially women, children, HIV/Aids affected groups, and the elderly.
- Have experienced continuous challenges of timely responding to climate change disasters due to inadequate and limited Early Warning Systems.

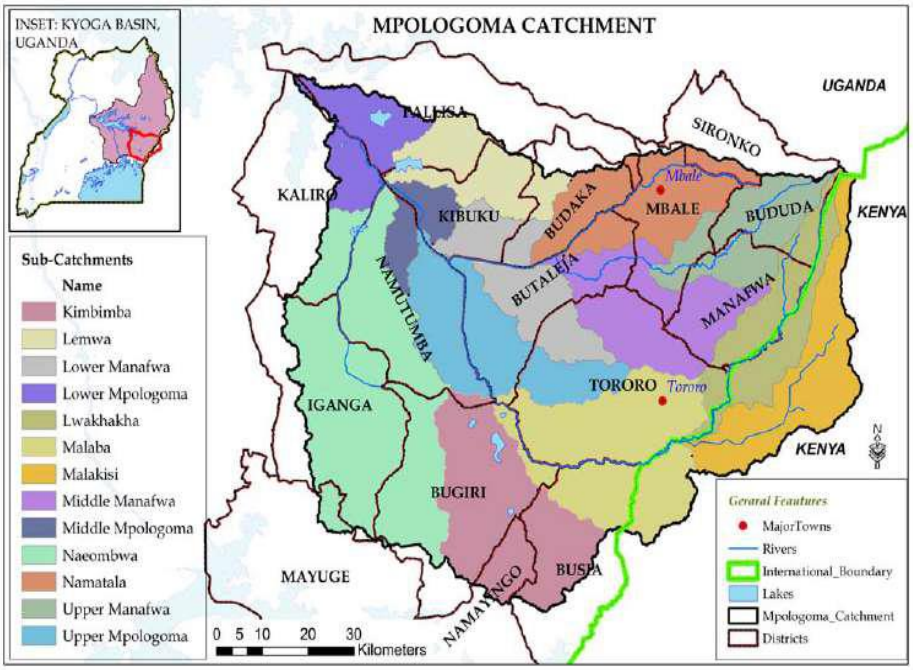

Figure 1: Location of the project area. Source: Mpologoma Catchment Management Plan (MWE, 2018)

Based on the criteria highlighted in section 1.2, sites within the upstream, midstream and downstream sub-catchments of Mpologoma catchments selected for the proposed project are: lower Manafwa and lower Mpologoma; middle Manafwa and middle Mpologoma; as well as upper Manafwa and upper Mpologoma sub-catchments respectively (Figure 1). The 6 selected sub-catchments cover a total area of 2,994 km^2 (33.3% of Mpologoma catchment) and administratively cover 11 districts (Bududa, Namisindwa, Mbale, Manafwa, Butaleja, Tororo, Kibuku, Budaka, Namutumba, Kaliro and Pallisa) partially as indicated in Table 1 and Figure 2.

Table 1: Districts within the proposed project area

Drainage	Sub-catchment	Districts Covered (partially)
Upstream	Upper Manafwa	Bududa, Namisindwa, Mbale, Manafwa
	Middle Manafwa	Butaleja, Namisindwa, Mbale, Manafwa, Tororo
Midstream	Lower Manafwa	Butaleja, Kibuku, Budaka, Tororo
	Upper Mpologoma	Namutumba, Butaleja, Tororo

[17] WaterAid (2018) Brief for COP 2018

Downstream	Middle Mpologoma	Kibuku, Namutumba
	Lower Mpologoma	Kaliro, Pallisa

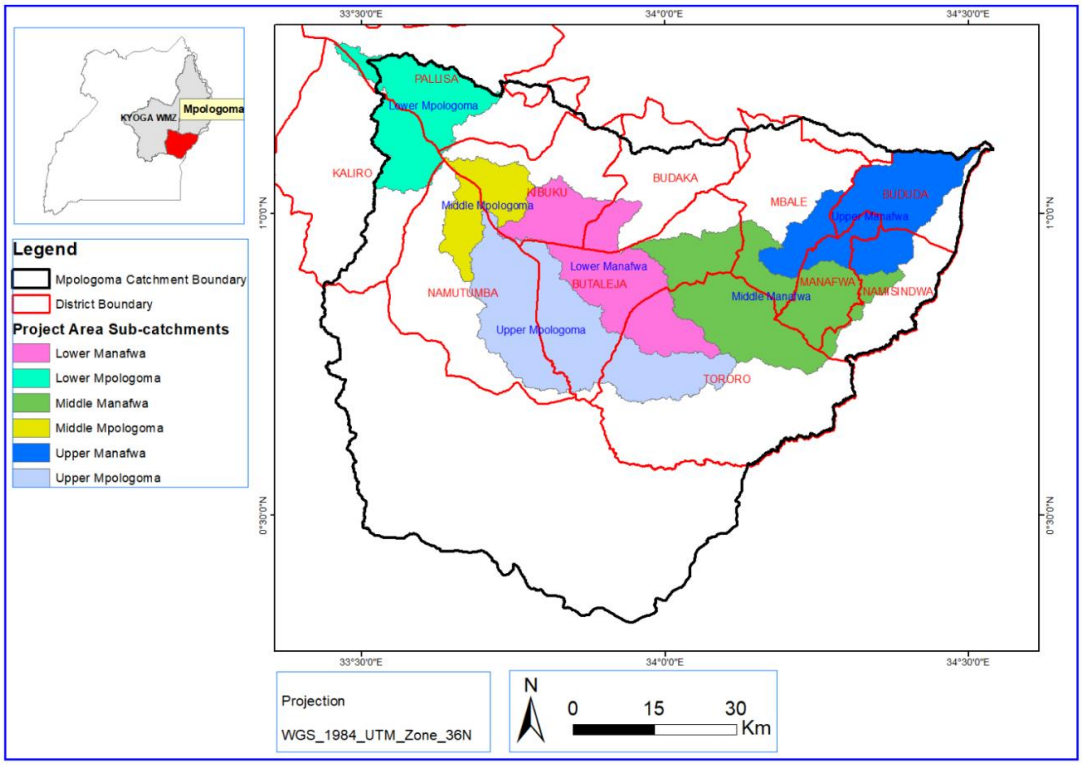

Figure 2: Sub-catchments and Districts within the project area

1.2.1 Geographical location and area

The Mpologoma Catchment, which is one of the catchments within Kyoga Water Management Zone (KWMZ) that covers approximately 7,862 km^2 of land area and 1,127 km^2 of water area[18]. It is bordered on the south by a narrow strip of the Victoria WMZ, which separates the catchments from Lake Victoria. The catchment is characterized by the presence of Mount Elgon (4,321 meters above sea leave [m.a.s.l]), at the extreme northeast corner of the catchment, where the steepest slopes are found and a few extinct volcanoes and ridges along its southern and eastern rim at lower elevations along the border with Kenya. The altitude of the remainder of the catchment is between 1,150m and 1,033m, with the latter being the mean altitude of Lake Kyoga. Most wetlands in the catchment are located in this relatively flat area. The catchment traverses a wide range of land-cover types including settled agricultural areas, bushland, swamp/ riverine, wetlands of different types, and forested areas. There are numerous wetlands in the catchment: around 16% of the total area of the catchment is covered by wetlands (mainly seasonal wetlands). The main wetland systems include the Naigombwa, Namatala, Malaba, Mpologoma, Manafwa, Lumboka, and Lwakhaka wetland systems.

1.2.2 Physical characteristics

The physical characteristics of Mpologoma catchment are diverse owing to the fact that it cuts across many districts, for example Manafwa district is hilly with gentle slopes in the wetland area and parts of the districts that border Tororo. The most evident physical feature of Mpologoma catchment is the spectacular Mount Elgon that rises up to 4,320 metres, covering Mbale, Bududa and Manafwa districts. The sub-catchments for instance lower Manafwa and Mpologoma; middle Manafwa and Mpologoma; as well as upper Manafwa and Mpologoma sub-catchments typically characterize the lowlands, uplands and the mountainous landscapes within the Mpologoma catchment respectively. Further towards, Tororo, the terrain comprises of undulating plains with some rivers and swamp valleys. There are also isolated hills like the Tororo Rock and Sukulu hills. Butaleja consists of very flat plains; Pallisa and Budaka are areas of low land surface with open plains, low valleys that form wetlands. Bugiri district is generally characterized by gentle undulating hills.

1.2.3 Climate

The climate in the catchment is tropical in nature with relatively small differences in temperature, humidity and wind

[18] MWE, 2018. Mpologoma catchment management plan

throughout the year. The area experiences two rainy seasons with heavy rain from March to May and lighter rains between October and December with mean annual rainfall about 1,375mm. The topographic effects of Mt Elgon and the catchment's proximity to Lake Victoria are two important factors responsible for the rainfall patterns in the catchment. These two factors contribute to the increase of total rainfall received in the area and help to reduce the severity of the dry period. The upland areas covered by Mt Elgon; Mbale, Bududa and Manafwa receive more rainfall compared to other areas. This kind of rain is sometimes excessive resulting in landslides that lead to loss of life, crops, livestock and property in the area. The average annual rainfall per annum in hotspots such as areas in Mbale, Bududa and Manafwa districts is 1,800mm. Such rainfall amount is considerably higher than the average annual rainfall of 1,375mm received in the entire catchment. In recent years rainfall occurrence in various sites of the catchment has been reported to be erratic in terms of duration and intensity (MWE, 2018). This is commonly attributed to the effects of climate change. The unpredictable rainfall patterns translate into a shift in the planting season with associated crop failures apparent. The poor populations are mostly affected by such as it leaves them highly vulnerable to hunger. This kind of rainfall unpredictability does not only affect crop yields but also the supply of water. The proposed project will focus on promoting adaptation measures to the erratic rainfall patterns thereby reducing the impact of climate change.

1.2.4 Soils and pedology

The main soils in Mpologoma catchment are Gleysols and Histosols Gleysols are suitable for rice growing while the histosols are suitable for growing other crops. The slopes of Mt Elgon in Bududa, Manafwa and Mbale districts are considered to be hotspots because they are highly fertile with such soil types resulting into high population densities therein. Due to intensive farming on the mountain slopes by the high human population, land degradation is evident. With excessive rainfall, soils are eroded to various surface water sources thus aggravating water, sanitation and hygiene issues especially at households' levels. There is a need to focus on sustainable farming practices that are aimed at restoring soil fertility and improve WASH among vulnerable communities. Practices such as deforestation and unsustainable agricultural practices for instance bush burning and over grazing cause soil erosion which further leads to declines in soil fertility. With the declining soil productivity, food production is negatively affected leading to food insecurity among the human population.

1.2.4 Hydrology and irrigation

There is high potential of water resources for irrigation and domestic utilisation. The main rivers in Mpologoma catchment are rivers; Manafwa, Namatala, Malaba, Kibimba and Naeombwa. The rivers are the main source of water in the catchment. Groundwater is also available in most of the catchment it is exploited by the use of boreholes, protected springs and shallow wells. According to the National Water Resource Assessment (2013), estimated renewable groundwater resource exceeds the project demand for domestic water throughout the catchment, although shortages may arise in areas with a high population density such as Mbale, Bududa, Budaka, Manafwa and Iganga districts. There are two major irrigation schemes; Kibimba (Tilda) and Doho. Informal small-scale irrigation of rice is most prevalent at the edges of wetlands, done with little or no technical assistance. In this catchment, its either rain-fed agriculture or informal small scale irrigation methods for watering crops as the major irrigation schemes are not properly well managed and maintained.

1.2.5 Population, land tenure and gender

The Mpologoma Catchment covers, totally or partially, 16 districts of Budaka, Bududa, Bugiri, Busia, Butaleja, Iganga, Kaliro, Kibuku, Manafwa, Mayuge, Mbale, Namayingo, Namutumba, Pallisa, Sironko, and Tororo with an estimated total human population of 4,093,340 (UBOS, 2014). This population is highly dependent on rain-fed agriculture and natural resource base for their livelihoods. The land tenure in the catchment is faulty and encourages people to own land titles in wetlands yet the ownership of wetland is vested in the Government of the Republic of Uganda under the Uganda Land Act-1998. These titles were obtained by some community members before the enactment of the Land Act whereas others illegally obtained the titles even after the Land Act was enacted. Customarily, the women are more disadvantaged as they are unable to own or inherit land. At times, women do not have the financial ability to purchase land. Women representation in the catchment management for instance on the Catchment Management Organization (CMO) is not significant enough. Women access to access to credit and markets is still poor due to poor roads. Women are poorer compared to men and contribute more to poverty in the catchment.

1.2.6 Livelihoods

Rain-fed agriculture is the biggest form of land use for the rural dwellers and so more than half of the total land area is used for cultivation. Livestock grazing is also a common livelihood in the catchment. Rice is the commonly grown crop in the lowland wetlands whereas crops grown in the highly drained areas include; maize, bananas, coffee, sweet potatoes, millet, sorghum, cassava and fruit trees. The cultivable areas comprise of the upstream dry lands and the lowland wetlands. It is subsistence kind of farming characterized by low yields, small land holdings, poor soil management

practices and use of rudimentary tools for farming that make communities in the catchment highly vulnerable to climate change. The livestock reared include; cattle, sheep, goats, pigs and poultry. Fishing is another economic activity in the catchment fueled by the high demand for domestic consumption and export. Fish is done from small lakes, rivers, streams and wetlands. Apparently, the fish harvests are reducing due to degradation of water quality in lakes, rivers and wetlands, invasive weeds and the subsistence kind of fishing that encourages use of illegal methods. There are also small-scale fish ponds owned by individual farmers or groups of farmers that supplement the fish demand in the catchment area.

1.2.7 Major environmental management issues

Deforestation resulting from the indiscriminate tree cutting for cultivation and charcoal burning especially in Bugiri, Namutumba, Kaliro, Iganga and Mayuge districts; wetland encroachment and uncontrolled reclamation of wetlands as well as unsustainable crop farming practices are highly prevalent in the catchment. Pollution of wetlands, rivers and streams resulting from unsustainable crop farming practices undertaken by small scale farmers on mountain slopes and industries, soil erosion and siltation of the water bodies pose enormous environmental management challenges in the catchment. Such environmental management challenges are caused by the high population densities and growth that stress the natural resource base in the catchment. Natural resource degradation not only leads to food insecurity, conflict over utilisation of natural resources but also impedes incomes and alternative livelihoods for the human population, high incidence and severity of waterborne diseases thereby increasing the vulnerability of populations and ecosystems to floods and landslides in the catchment. Floods occur mainly at the foothills of Mt Elgon. Flood waters originate from the upstream parts of Mpologoma catchment in the upper and middle Manafwa sub-catchments that are very steep and are highly degraded and flow through various rivers such as River Manafwa that originate from Mt. Elgon. Floods are common in low-lying areas and areas along riverbanks and close to wetlands mainly in the midstream and downstream sub-catchments as indicated in (Table 2). Landslides and massive soil and river bank erosion occur in Mount Elgon region, especially in Bududa, Namisindwa, Manafwa, Tororo and Mbale districts that form the upper and middle Manafwa sub-catchment covering the most upstream parts of the Mpologoma catchment. There is therefore a geographical overlap between the origin of flood waters, landslides and soil erosion, namely Mt Elgon foot hills covered by the most upstream sub-catchments of Mpologoma catchment (Figure 2). Therefore, interventions such as biophysical structures (contour bands, terraces, infiltration trenches and percolation pits) will be implemented in the upstream sub-catchments (upper and middle Manafwa) to control the fast run-off of water from the upstream areas of the Mpologoma catchment. The biophysical measures (structures) in the upstream parts of the catchment will also help to address the challenge of landslides and soil erosion. In flood prone low-lying areas in the midstream and downstream sub-catchments, flood control and water harvesting structures (canals, check dams, retention ponds etc.) will be implemented. In this way, project interventions that are aimed at building the resilience of communities to floods and landslides will be implemented in the appropriate sub-catchments in a linked way. There is a need for the proposed project to address environmental management challenges related to floods and landslides such as deforestation, steep slopes, limited drainage etc. by improving awareness creation and enforcement of environmental policies so as to build resilience of communities to floods and landslides. The capacity of communities to adapt to climate change should be strengthened.

1.2.8 Climate change vulnerability and impacts

The precipitation pattern Mpologoma catchment, is classified as bimodal, but is highly variable in space and time, with extreme rainfall events leading to floods and landslides. Minor variations in annual rainfall occur in the catchment though reportedly erratic in amount, duration and frequency. The areas that are most vulnerable to floods and lands are; Upstream (mainly landslides): Bududa, Manafwa, Mbale and, Sironko Districts. In the Midstream sub-catchments floods are the main climate change challenge with Butaleja and Tororo Districts most vulnerable. The downstream sub-catchment is mainly vulnerable to floods especially in Kibuku and Pallisa District. The main determinants of vulnerability of human populations to floods and landslides is over dependency on natural resources and rain-fed agriculture. The natural resources including forests, wetlands, soils and water have been degraded by high populations in pursuit of ecosystem goods and services. Their current livelihoods are limited and their adaptive capacity is still low. Consequently, communities and especially women and children have remained vulnerable to floods and landslides. Women, children and the elderly are mainly the most vulnerable. They are mostly vulnerable in a sense that they are ones that stay in the areas most of the time depending heavily on the natural resources in search for water, wood fuel (firewood and charcoal), food (agriculture), etc. These are the stakeholders that would mainly be affected when a flood or landslide hits an area. These people often stay at home and stay longer in gardens and when floods, landslides and mudslides occur they are always the first victims because they are always caught up either at home, in the gardens, or along the way from the gardens to their homes. The main flood events recorded in the catchment are six flood events have been registered since 1997 in Mbale district: Nov/1997; May/2002; May/2003; July/2003; Sep-Oct/2007; Aug/2011. The EMDAT disaster database (EM-DAT 2011) indicates high risks of landslides in Mbale District on the slopes of Mount Elgon. Such floods, landslides and mudslides have often led to loss of lives, crops, livestock, property and caused the displacement of people. Reduction in crop yields as a result of unpredictable rains, has led to food insecurity, malnutrition and poverty among the communities.

Surface water resources have reportedly been impacted as a result of climate change. Sometimes the reduction of available water resources between May and November increases water stress leading to deficits to meet the water demand. Some boreholes are said to be drying up as a result of climate change, however no information is available to explain this phenomenon.

1.2.9 Water and sanitation situation

Since surface water is the main source of water in the catchment, the quality of water is majorly compromised by pollution from agricultural run-off especially in the rainy season and the lack of inadequate sanitation facilities. Sanitation in the catchment is wanting and this impacts the quality of water, health and the quality of life. Construction of pit latrines is difficult due to high water tables, floods and fragile soils. This exposes the local people to diseases that result from improper waste disposal. With the ever-increasing population in big towns such as Busia and Iganga, a functional waste water treatment plant would be resourceful. According to the Ministry of Water and Environment Sector Performance Report of 2018, only 77% of Ugandan population in rural areas have access to safe water. Although the responsibility of delivering WASH interventions in Uganda is shared between the Ministries of Education for Schools, Ministry of Health for community sanitation and MWE for sanitation infrastructure and public sanitation and sewages services, water supply and general access to safe water remains a challenge including Mpologoma catchment. According to the Uganda water supply database June 2018, only 11% rural population have access tap water in villages. If the government is to achieve its target to 50% access to tap water by 2030 then there is an urgent need to increase piped water supply. Furthermore, according to the Uganda National Bureau of Standards (UNBS) out of 498 small towns in eastern Uganda only 183 towns have piped water leaving 315 towns with no clean water. The same applies to western Uganda where 228 small towns out of 311 towns lack piped water. Therefore, there is water supply deficit or gap that creates a need to support supply of clean water. With the projected anomalies in rainfall and temperature, inadequate water supply and sanitation services are not only a challenge but even the small water and insanitation infrastructure faces the risk of climate change induced disasters. For instance, there was a 1% decline in access to sanitation facilities in Uganda in the year 2018 compared to year 2017 as a result of various factors that affected different districts. In Mpologoma catchment within Butaleja for instance, the 18% decline in sanitation coverage from 81% 2016/2017 to 63% in 2017/2018 was attributed to collapsing soils and flooding that caused collapse of many latrines in almost half of the entire district. With such climate change induced disasters threatening the water, sanitation and hygiene services especially in the catchment, deliberate efforts to develop and implement climate resilient WASH technologies under the CARFEWW project are timely if community adaptation is to be improved.

1.2.10 Drivers, barriers and proposed solutions

The main drivers for climate change vulnerability in Mpologoma catchment is high population growth, overdependence on unsustainable rain-fed agriculture, over dependency on natural resources and inadequate options for alternative incomes. The already high and growing population in Mpologoma catchment causes over exploitation and destruction of ecosystem resources thereby exerting increasing pressure on water and land resources. Some of the pressures result from unsustainable farming practices especially uphill where the soils are loose yet fertile causing soil erosion and siltation of rivers and streams downstream and emergence of water borne diseases. The high population also is a source of uncontrolled and poor waste disposal that leads to pollution of water bodies especially downstream. Another consequence of high population is poverty. With the projected monthly temperature change expected to increase by 1.8°C for the 2050s and by 3.7°C by the 2090s and monthly annual precipitation expected to increase based on the medium (RCP4.5) and high (RCP8.5) emission scenarios, it is inevitable that Uganda and specifically the catchment is at risk to natural disasters. Furthermore, the decadal relative rainfall anomaly reportedly increased from 85.6–105 in 1981–1990 to 92.0–120.9 in 2011–2020, while mean temperature anomaly increased from 0.2–0.6^{o}C to 1.0–1.6^{o}C in the same period. The frequency of severe wet weather events was more than for dry weather events in many stations, indicating an increase in precipitation. Maximum, mean, and minimum temperatures increased, with resultant warmer nights. The findings from this study showed that the Lake Kyoga basin in which the Mpologoma catchment falls is experiencing climate change, with both temperature and rainfall increasing spatially and temporarily. Climate change affects agriculture, which is the main economic activity, and causes the destruction of infrastructure notably, from floods, landslides, and mudslides[19] "The country experiences extreme weather events which lead to mudslides, landslides and flooding, particularly for the country's mountain regions such as the Mt Elgon region[20] of which Mpologoma catchment is part. Such extreme events have increased over the last 30 years. Flooding has become more frequent, largely due to more intense

[19] https://www.mdpi.com/2225-1154/9/12/179/pdf. Recent Climate Change in the Lake Kyoga Basin, Uganda: An Analysis Using Short-Term and Long-Term Data with Standardized Precipitation and Anomaly Indexes

[20] Ministry of Agriculture, Animal Industry and Fisheries (2018). Guidelines for Mainstreaming Climate Change Adaptation and Mitigation in Agricultural Sector Policies and Plans. URL: https://www.agriculture.go.ug/wp-content/uploads/2019/09/Guidelinesfor-Mainstreaming-Climate-Change-Adaptation-and-Mitigation-in-the-Agricultural-Sector-Policies-Plans-1.pdf

rainfall[21]. Increased intensity of heavy rainfall has led to greater impact of floods and caused more damage to infrastructure, human settlement and general development of the country. In Mpologoma catchment, the 11 districts (Bududa, Namisindwa, Mbale, Manafwa, Butaleja, Tororo, Kibuku, Budaka, Namutumba, Kaliro and Pallisa) within the lower Manafwa and lower Mpologoma; middle Manafwa and middle Mpologoma; as well as upper Manafwa and upper Mpologoma sub-catchments respectively are most affected by the climate variabilities described. Such climate variability also results into crop failure hence food insecurity, damage to infrastructure and property, which increase the vulnerability of the poorer segments of the population and the most hard-to-reach and isolated communities. These issues increase the vulnerability of communities and ecosystems to climate change especially from floods and landslides that equally negatively impact on water and sanitation facilities. With water and sanitation services negatively impacted by floods and landslides, the women and children suffer more in terms of time spent collecting water, risk of diseases and sexual abuses. The human population in Mpologoma catchment is susceptible to water and sanitation related diseases due to floods and landslides aggravated by limited, unsustainable and unreliable Flood Early Warning systems and strategies. To increase the resilience and adaptation of such communities to climate change, this project will focus on Strengthening institutional capacity for planning, designing, implementing and monitoring integrated Flood Early Warning systems (FEWS) and climate-smart WASH technologies (***Component 1 outcomes and outputs***); Facilitating communities to undertake adaptation actions for reinforcing resilience of populations and ecosystems against floods and landslides by: developing and showcasing climate-smart WASH-related technologies and activities at demonstration sites within the catchment (***Component 2 outcomes and outputs***), e.g. flood-proof latrines, wastewater re-use, waste management, fecal sludge management, non-revenue/waste water reduction, multi-use water options, rainwater harvesting, water point and sub-catchment protection measures (including soil conservation measures, wetland rehabilitation, restoration/protection of river banks and reforestation; source water point protection and recharge; building capacity of district and regional water, health and education, government and other stakeholders to support and model climate resilient approaches to water, sanitation, hygiene and waste management in schools and health care facilities; supporting communities to undertake WASH climate change adaptation actions and enhance knowledge management and skills sharing in FEWS, climate resilient WASH and Catchment Management technologies (***Component 3 outcomes & outputs***).

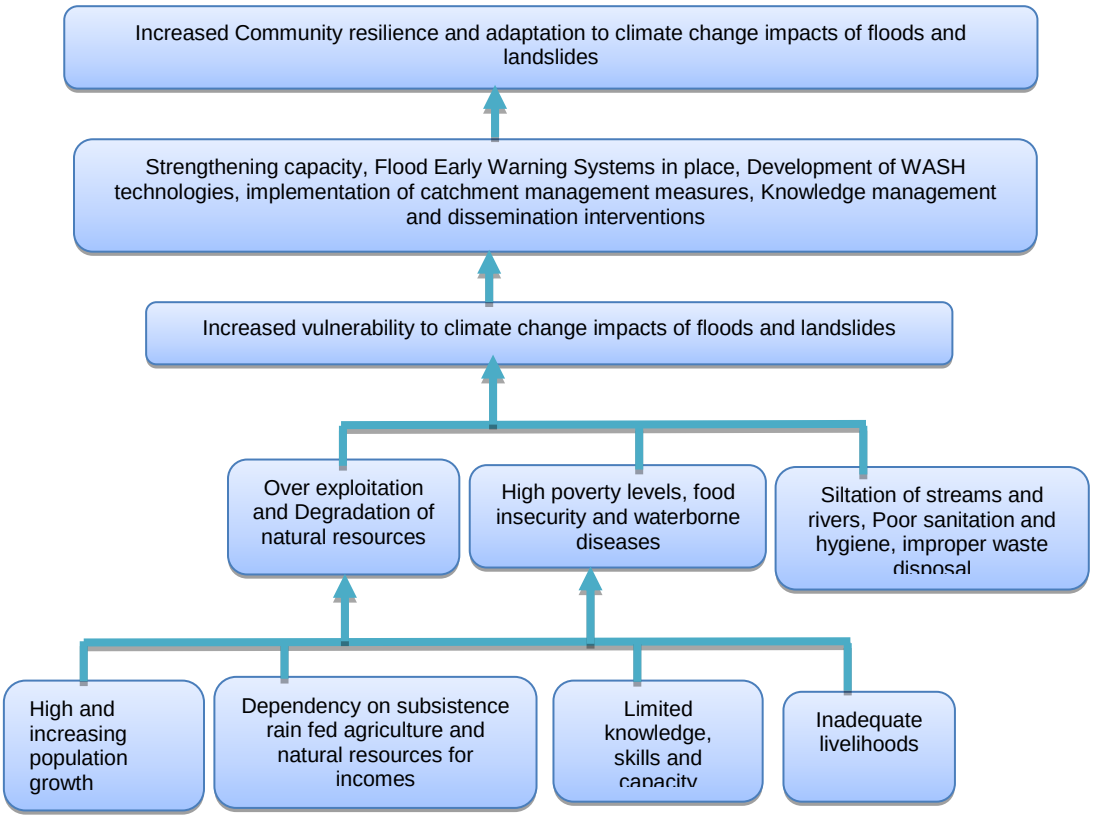

Figure 3: Theory of Change for the project

[21] Ministry of Water and Environment (2014). Guidelines for the Integration of Climate Change in Sector Plans and Budgets. URL: http://ccd.go.ug/wp-content/uploads/2018/04/National-Climate-Change-Mainstreaming-Guidelines-.pdf

2. Project / Programme Objectives

The overall goal of the project is to increase the resilience of communities to climate change risks of floods and landslides through timely response to climate hazards, sustainable community access to water, sanitation and hygiene services and integrated catchment management measures in Mpologoma catchment.

The proposed project focuses on supporting local communities to adapt to the effects of floods and landslides through developing and implementing integrated floods early warning systems, climate resilient WASH and catchment management measures in selected sub-catchments of Mpologoma catchment in Uganda.

The specific objectives of the project are to:

a) Strengthen the institutional capacity for planning, designing, implementation and monitoring of integrated Flood Early Warning systems (FEWS) and climate-smart WASH technologies
b) Develop and promote adoption of Floods Early Warning systems (FEWS), climate-smart WASH and Catchment Management technologies
c) Facilitate communities to undertake adaptation actions for reinforcing resilience of populations and ecosystems against floods and landslides
d) Enhance knowledge management and skills sharing in FEWS, climate resilient WASH and Catchment Management technologies

3. Project / Programme Components and Financing

The relationship among the components of the project, expected outcomes, concrete outputs and corresponding budgets are presented in Table 2.

Table 2: Project components, outcomes, outputs and summary budget

Project/Programme Components	Expected Outcomes	Expected Concrete Outputs	Amount (US$)
1. Strengthening institutional capacity for planning, designing, implementing and monitoring integrated Flood Early Warning systems (FEWS) and climate-smart WASH technologies	1.1 Increased use of effective and efficient Flood Early Warning Systems and climate resilient WASH technologies by stakeholders	1.1.1 Efficient and effective FEWS and climate resilient WASH technologies developed/in place	**486,000**
	1.2 Capacity of key stakeholders at national, district and local levels for FEWS, WASH planning, designing, implementation and monitoring strengthened	1.2.1 Capacity to plan, design, implement and monitor Climate adaptive WASH among stakeholders at different levels improved	**756,000**
		1.2.2 Institutional linkages/partnerships for WASH information utilisation and review established/improved	**167,000**
2. Facilitating communities to undertake adaptation actions for reinforcing resilience of populations and ecosystems against floods and landslides	2.1 Increased uptake and use of concrete adaptive climate-smart WASH technologies and catchment protection measures	2.1.1 Efficient and sustainable WASH technologies demonstrated	**384,000**
		2.1.2 Adaptive catchment protection measures promoted	**1,747,000**
		2.1.3 Adaptive flood control and landslide management measures (including soil conservation, erosion control etc.) promoted	**702,000**
	2.2 Uptake and usage and management of concrete adaptation actions for water supply and sanitation measures increased	2.2.1 Sanitation services in small towns and rural growth centres improved	**2,088,000**
		2.2.2 Domestic water supply infrastructure among vulnerable communities improved	**1,059,000**
3. Enhancing knowledge management and skills sharing in FEWS, climate resilient WASH and Catchment Management technologies	3.1 Knowledge, awareness and information sharing on FEWS, climate resilient WASH and Catchment Management increased	3.1.1 Good practices and lessons learned on WASH documented and disseminated	**95,000**
		3.1.2 WASH information sharing platforms strengthened	**216,000**
6. Project/Programme Execution cost			**760,000**
7. Total Project/Programme Cost			**8,000,000**
8. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			**744,600**
Amount of Financing Requested			**9,504,600**

4. Projected Calendar

Milestones	Expected Dates
Start of Project/Programme Implementation	October 2022
Mid-term Review	October 2024
Project/Programme Closing	October 2026
Terminal Evaluation	January 2027

PART II: PROJECT / PROGRAMME JUSTIFICATION

A. Description of project components and activities

COMPONENT 1: Strengthening institutional capacity for planning, designing, implementing and monitoring integrated Flood Early Warning systems (FEWS) and climate-smart WASH technologies

Overall, there is inadequate capacity to plan, design, implement and monitor integrated FEWS and climate resilient WASH technologies in Mpologoma Catchment. Component one of the CARFEWW project focuses on strengthening the capacity of various institutions at different levels to ably undertake the planning, designing, implementing and monitoring integrated Flood Early Warning systems (FEWS) and climate-smart WASH technologies. These will be achieved through targeted assessment of the current FEWS and climate resilient WASH technologies. Efforts to integrate early warning systems for floods management and water, sanitation and hygiene measures will be studied including their extent of application within and outside the catchment. The application of the 2014 sensor flood monitoring system installed in Butaleja district along Manafwa River is limited to a 5km radius. It will be vital for flood early warning information as well as WASH to be incorporated into the modern systems and technologies to further wide application, effectiveness and reliability of the FEWS and climate resilient WASH technologies. Under this project, the appropriate, reliable and widely applicable FWS and climate resilient WASH technologies will be incorporated and/or integrated in various institutional planning frameworks including the Catchment Management Plan (CMP), Sub Catchment Management Plans (SCMPs) as well as the district and sub county development plans. The component aims at strengthening the capacity of catchment management institutions in order to enable them and communities to adapt to the impacts of floods and landslides in the catchment. Although the Mpologoma CMP was developed in 2018 with numerous catchment management measures, FEWS and climate resilient WASH measures are largely lacking that could enable communities to easily adapt to the effects of climate change. Such systems and technologies are also lacking in district and sub-county development plans thereby rendering communities vulnerable without options to rely on for pre-warning and coping with floods and landslides. Most of the catchment management measures in the CMP are mainly targeting catchment management measures for building and enhancing the resilience of ecosystems and human populations. Despite such efforts, local communities have largely remained highly vulnerable to the impacts of climate change especially the effects of floods and landslides because their adaptive capacity is still low. Similarly, community access to modern FEWS and climate resilient WASH services is inadequate. Therefore, the purpose of component one is to support catchment management institutions and communities to adequately plan for climate resilient WASH measures by ensuring that's such systems and technologies are duly incorporated in the already developed CMP, Sub-Catchment Management Plans (SCMP), district and sub-county development plans. After planning the project will then equip/upgrade selected weather stations in the catchment for timely and effective weather information as well as undertake to popularize and disseminate the revised/updated and newly developed SCPs by translating the plans in the languages that are easily understood by the communities, local leaders and catchment management committees for full scale implementation. These are highlighted under outcome 1.1 and output 1.1.1 of the proposed project.

In order for communities and catchment management institutions to ably undertake the proposed climate resilient WASH measures and technologies, the proposed project under Outcome 1.2 and output 1.2.1 of component one further intends to improve the capacity of the various stakeholders that will be involved in the implementation of FEWS and climate resilient WASH technologies. For this case, capacity needs of the various stakeholders at different levels will be assessed and evaluated, capacity building plans developed and stakeholder trained in the implementation of the WASH measures at national, regional, district and local levels. It is proposed the exchange learning visits to areas outside the catchment will be organized for community leaders, and catchment management committee members to see and appreciate climate resilient WASH measures. It is hoped that on-return such learners will not only benefit from such cross learning but also be facilitated to conduct similar awareness raising meetings and events and guide learning among their peers within and among communities. In order to track change in knowledge and skills acquisition among communities, community leaders and institutions, it is necessary that targeted follow up monitoring and supervision is conducted under Outcome 1.2 and Output 1.2.1. Following integration and incorporation of FEWS and WASH issues in institutional planning frameworks of CMP, SCMPs, district and sub county levels, Component one also endeavours to institutionalise WASH by establishing new WASH governance structures where they are non-existent or incorporating WASH governance within the broader Catchment Management and Sub-catchment management governance committees under output 1.2.2. In addition, WASH information sharing forums will be developed and supported. The forums will be facilitated to develop Memorandum of understanding (MOUs) and action plans as well as support inter-ministerial and inter-sectoral meetings to easily coordinate WASH information sharing between stakeholders at different levels. These specific aspects will be achieved through outcome 1.1, output 1.1.1, outcome 1.2, outputs 1.2.1 and 1.2.2 presented below. The proposed activities in relation to the corresponding outcomes and outputs are:

Outcome 1.1: Increased use of effective and efficient Flood Early Warning Systems and climate resilient WASH technologies by stakeholders

Output 1.1.1: Efficient and effective FEWS and climate resilient WASH technologies developed/in place

Activities

- Activity 1.1.1.1 Assess the status of FEWS at different levels and incorporate indigenous/traditional FEWS options with modern FEW technologies
- Activity 1.1.1.2 Assess application status of Climate resilient/climate proof WASH technologies at different levels
- Activity 1.1.1.3 Support integration of FEWS and Climate-smart WASH technologies in planning, design, implementation and monitoring in national, regional, district and community level planning and development frameworks
- Activity 1.1.1.4 Equip/upgrade selected weather stations in the catchment for timely and effective weather information
- Activity 1.1.1.5 Popularise and disseminate the developed guidelines

Outcome 1.2 Improved Capacity of key stakeholders at national, district and local levels for FEWS, WASH planning, designing, implementation and monitoring

Output 1.2.1: Capacity to plan, design, implement and monitor Climate adaptive WASH among stakeholders at different levels improved

Activities

- Activity 1.2.1.1 Undertake a FEWS and WASH capacity needs assessment for national, district and local levels
- Activity 1.2.1.2 Develop a capacity building plan and materials for different levels at national. Regional, district and community levels
- Activity 1.2.1.3 Train stakeholders at different levels in FEWS and climate resilient WASH technologies
- Activity 1.2.1.4 Facilitate learning exchange visits for WASH

Output 1.2.2: Institutional linkages/partnerships for WASH information utilisation and review established/improved

Activities

- Activity 1.2.2.1 Establish and incorporate climate resilient WASH into governance committees in Catchment and Sub-catchment organisations
- Activity 1.2.2.2 Facilitate WASH and CM and SCM committees to hold awareness creation meetings
- Activity 1.2.2.3 Develop/review WASH information sharing forums for Catchment Management Organisations
- Activity 1.2.2.4 Develop MOUs and implementation action plan for climate resilient WASH information Forums at regional, district and Sub-County levels (CM stakeholders e.g. CBOs, LG Authorities, MWE structures)
- Activity 1.2.2.5 Support inter-ministerial and inter-sectoral climate resilient WASH information sharing (Water, Health, Education)

COMPONENT 2: Facilitating communities to undertake adaptation actions for reinforcing resilience of populations and ecosystems against floods and landslides

Component two of CARFEWW focuses on increasing the resilience of communities in Mpologoma catchment by supporting them to undertake concrete adaptation actions for climate-smart WASH measures or technologies that reinforce local community resilience against floods and landslides. Currently, communities within the catchment have limited climate resilient or smart technologies for water, sanitation and hygiene leading to poor responses to floods and landslides. Consequently, communities continue to lose lives, property, livelihoods and other assets to floods and landslides with inevitable emergence of waterborne diseases due to pollution and contamination of surface and ground water sources. Water points, water supply systems and waste management such as public toilets especially in high populated sites such as small towns and rural growth centres have suffered unprecedented submerging from floods and landslides. Therefore, the proposed project seeks to first understand the current state of Knowledge, Attitudes and Practices (KAP) on WASH measures. With such information, the proposed project under component two will demonstrate climate-resilient WASH technologies suitable for different sub-catchments upstream, midstream and downstream; and train community members in climate resilient WASH technologies. The status of water points and source protection measures will be assessed and communities will then be trained in sustainable source protection measures against floods and landslides. They will also be supported with inputs to undertake source protection measures and facilitated to conduct their indigenous community source monitoring under outcome 2.1 and outputs 2.1.1 and 2.1.2. Also adaptive catchment protection measures will be undertaken and will involve demarcating, assessing and rehabilitating degraded ecosystems such as mountainous forests, swamp forests, wetlands and river banks; awareness raising on ecosystems restoration and rehabilitation among communities and their leaders, CMCs upstream, mid-stream and downstream; as well as supporting communities with various inputs to restore and rehabilitate some of the degraded ecosystems in the catchment under Output 2.1.2. Component two also increases resilience of communities to floods and landslides by supporting

communities to: construct adaptive landscape flood and landslide control structures; domestic rain water harvesting facilities to manage floods (output 2.1.3); Under Outcome 2.2 and Outputs 2.2.1 and 2.2.2, sanitation services especially in small towns and rural growth centres will be increased through availing public sanitation facilities in small towns and rural growth centres. These will include for instance low-cost sanitation set-ups that are associated with low-income; mud brick lined / elevated chambers. The Elevated Pit Latrine (including Earth Stabilized or Mound Latrine), Sand Enveloped Raised Pit Latrine, and Step Latrine climate proof fecal sludge management facilities; climate proof wastewater re-use and waste management facilities; and facilitating them to reinforce water abstraction, storage and transmission infrastructure/facilities. Community members will be trained in constructing landscape flood control and landslide management structures as well as how to operate and cost life cycle and maintenance of WASH facilities in towns and rural growth centres. Furthermore, under component two, domestic water supply infrastructure will be improved among vulnerable communities through supporting climate proof water supply assessment and reinforcement of water abstraction, storage and transmission facilities, awareness creation against piped water supply, wastage and other water loss reductions as well as supporting women groups to engage in sanitation value chains as an alternative source of income from WASH facilities in towns and rural growth centres. Therefore, apart from sanitation value chains and management of sanitation facilities that can be utilised to invest in group SACCOs, Synergies will also be built with existing initiatives in the catchment such as the ECOTRUST Plan Vivo Trees for Global Benefit project supporting indigenous tree planting for carbon trade in the catchment. Also, tree planting with high economic value species such as fruit trees and fuel woodlots will also be promoted as livelihood activities yet important at rehabilitating deforested areas and stabilizing the landslide susceptible areas. At least 50% of women and 50% men will be targeted to benefit from such livelihood interventions. A revolving fund scheme for alternative income generating activities as promoted by EURECCCA project, funded by the Adaptation Fund, will be supported and promoted under the proposed project. The proposed component two activities in relation to the corresponding outcomes and outputs are:

Outcome 2.1: Increased uptake and use of climate-smart WASH technologies

Output 2.1.1: Efficient and sustainable WASH technologies demonstrated

Activities

- Activity 2.1.1.1 Conduct a KAP survey on WASH in the catchment
- Activity 2.1.1.2 Establish demonstration sites for climate resilient WASH models
- Activity 2.1.1.3 Conduct quarterly training sessions on climate resilient WASH

Output 2.1.2: Adaptive catchment protection measures promoted

Activities

- Activity 2.1.2.1 Assess status of water points and protection measures in the catchment
- Activity 2.1.2.2 Train communities in source protection measures against floods and landslides
- Activity 2.1.2.3 Support establishment of source protection and management measures
- Activity 2.1.2.4 Facilitate indigenous community source monitoring
- Activity 2.1.2.5 Provide inputs to communities for source protection
- Activity 2.1.2.6 Assess, demarcate and map degraded ecosystems upstream, midstream and downstream areas (including hilly/mountainous forests, wetlands, riverbanks, swamp/riverine forests etc.)
- Activity 2.1.2.7 Support rehabilitation of degraded ecosystems upstream, midstream and downstream areas (including hilly/mountainous forests, wetlands, riverbanks, swamp/riverine forests etc.)
- Activity 2.1.2.8 Raise awareness on ecosystem restoration/rehabilitation among communities upstream, midstream and downstream areas (including hilly/mountainous forests, wetlands, riverbanks, swamp/riverine forests etc.)
- Activity 2.1.4.9: Support and promote a revolving fund scheme for alternative income generating activities

Output 2.1.3: Adaptive flood control and landslide management measures (including soil conservation, erosion control etc.) promoted

Activities

- Activity 2.1.3.1 Train communities in landscape flood control and landslide management
- Activity 2.1.3.2 Facilitate construction of landscape flood control structures
- Activity 2.1.3.3 Construct landslides resilient WASH technologies

Outcome 2.2: Uptake and usage of concrete adaptation actions and WASH measures increased

Output 2.2.1: Sanitation services in small towns and rural growth centres improved

Activities

- Activity 2.2.1.1 Support women groups to construct and operate public sanitation facilities in small towns and rural growth centres such as the low-cost sanitation set-ups that are associated with low-income; mud brick lined / elevated chambers, The Elevated Pit Latrine (including Earth Stabilized or Mound Latrine), Sand Enveloped Raised Pit Latrine, and Step Latrine will be considered.

- Activity 2.2.1.2 Support construction of climate proof fecal sludge management facilities
- Activity 2.2.1.3. Support construction of climate proof wastewater re-use and waste management facilities
- Activity 2.2.1.4 Train community operators on life cycle costing and maintenance of WASH facilities in towns and rural growth centres
- Activity 2.2.1.5 Hold hygiene behaviour change awareness meetings in communities.
- Activity 2.2.1.6 Support women groups to undertake sanitation value chain (e.g. fecal sludge emptying)

Output 2.2.2: Domestic Water supply infrastructure among vulnerable communities improved
Activities

- Activity 2.2.2.1 Undertake assessment of low cost climate proof water supply infrastructure
- Activity 2.2.2.2 Reinforce water abstraction, storage and transmission infrastructure/facilities
- Activity 2.2.2.3 Undertake awareness raising meetings on piped water supply, wasteful water supply and other water losses
- Activity 2.1.3.4 Construct domestic rain water harvesting facilities for communities

COMPONENT 3: Enhance knowledge management and skills sharing in FEWS, climate resilient WASH and Catchment Management technologies

There is limited awareness on climate resilient WASH technologies amongst communities and other stakeholders in the catchment leading to poor planning and responses to floods and landslides. Component three of CARFEWW project seeks to support knowledge generation, packaging, and dissemination between and across stakeholders in various institutions at different levels from national to regional, district and local levels. The main activities that will be implemented under this component will include raising awareness and mainstream lessons and best practices in FEWS on climate change issues and climate resilient WASH technologies. Further, they will include facilitating stakeholders to generate and exchange knowledge on the management of floods and landslides, conducting awareness raising meetings and campaigns to facilitate active communication and gain public support for climate change policies and inspire action on how people can take action to be a part of the solution. Some of the areas include FEWS and climate resilient WASH technologies, piped water supply, wasteful water supply and other water losses, undertaking learning exchange visits in successful climate adaptation interventions, documenting lessons learnt and best practices, results, impact, facilitating information sharing including supporting gender and disability rights groups to share climate resilient WASH information at different levels and engaging policy makers in dissemination of best practices on climate resilient WASH technologies . The information, lessons learnt and best practices on climate-smart WASH will be documented and shared for use by various stakeholders. Other experiences such as sanitation facilities and catchment management, source protection as well as women involvement in sanitation value chains will be captured and disseminated for wider stakeholder learning. WaterAid will embed this project into the existing Global Water and Climate Change (WCC) campaign, conduct media dialogue on climate change and WASH and explore WaterAid's recently launched 'Climate change, water and me' interactive digital platform. Existing communication channels will also be utilised to mobilise support and inspire action by amplifying local and national campaigning actions that demand action from decision-makers. The knowledge management component will involve documentation and dissemination of lessons learned and best practices of the project. These lessons will support replication of some of the interventions with better and higher adaptive effects to the impacts of climate change. At the same time, documentation will enhance up-scaling and out-scaling to other areas. The project will develop a detailed communication and outreach strategy including identifying climate champions for the project, communication materials to targeted audiences that are intended to facilitate knowledge transfer as well as sustain project interventions such as case studies, project factsheet, documentaries on people's experiences, climate change perceptions and behavioural change adaptation sensitization campaigns, and among others. Policymakers and relevant organizations will be engaged to participate in the knowledge sharing meetings and sessions at the national, regional and Global levels. At least 2 national high level presentations done and at least 1 Regional and Global platform presentation will be done. The targeted policy makers and stakeholders are the National level stakeholders that are closely aligned to the implementation of the NDP III programmes. These include: Line Ministries and their linked units such as MWE, MoH, OPM, MoLG, MGLSD, MWT, MoFPED, NEMA, NFA, DLG, UWA, MLHUD; Development Partners Working groups concerned with water, sanitation, environment, gender and securing livelihoods; as well as engagement with Parliamentarians especially those on the Natural Resources Committee, Climate Change and District Councilors for awareness raising and any proposed policy change or monitoring.

The project will identify a high profile national figure that will be an ambassador for the project to promote climate resilient and adaptation practices. Study tours within the catchment and to other relevant catchments will be organised. The specific activities to be undertaken include documenting and disseminating lessons and best practices from project interventions, sharing knowledge and information through use of existing and popular platforms e.g. media, telecom that are easily accessible by the stakeholders, advocacy and awareness raising activities targeting key Government Sector Staff to integrate water security and climate resilience issues into National and Sectoral Development Plans, organising

follow-up meetings and developing a scaling up strategy with key government sectors.
The specific outcome, outputs and activities that will be implemented under component three will include:
Outcome 3.1: Knowledge, awareness and information dissemination on FEWS and WASH increased
Output 3.1.1 Good practices and lessons learned on FEWS, WASH documented and disseminated
Activities

- Activity 3.1.1.1 Document good practices and lessons learned on FEWS, climate resilient WASH technologies and practices
- Activity 3.1.2.2 Generate, package and develop information and communication materials on FEWS, climate resilient WASH technologies and practices
- Activity 3.1.2.3 Organise Study tours within the catchment and to other relevant catchments

Output 3.1.2: FEWS and WASH information sharing platforms strengthened
Activities

- Activity 3.1.2.1 Support gender and disability rights groups to share FEWS and climate resilient WASH information at different levels
- Activity 3.1.2.2 Share knowledge and information through use of existing and popular platforms e.g., media, telecom that are easily accessible by the stakeholders, advocacy and awareness raising activities targeting key Government Sector Staff
- Activity 3.1.2.3 Facilitate integration of water security and climate resilience issues into National and Sectoral Development Plans
- Activity 3.1.2.4 Engage policy makers in dissemination of best practices on climate resilient WASH technologies. For this activity, meetings with MWE, MOH, MoE, MAAIF, OPM, MoLG, MGLSD, MWT, MoFPED, NEMA, NFA, DLG, UWA, MLHUD, and Development partners group, ministry sector working groups and parliamentarians and District Councilors will be organised and supported. At least 2 national high level meetings and presentations will be done and at least 1 Regional and Global platform meeting will be held.
- Activity 3.1.2.5 Organise follow-up meetings and developing a scaling up strategy with key government sectors.

The proposed project targets community members and households that are threatened by floods downstream in lowland areas and landslides in mid-stream and upstream highlands within the catchment. Overall, the project essentially focuses on increasing the resilience of the most vulnerable such as women amongst such populations against the impacts of floods and landslides.

B. Economic, social and environmental benefits

The proposed project is designed to provide various economic, social and environmental benefits in the context of the Environmental and Social Policy of the Adaptation Fund. For this matter, the proposed project is designed with activities, outcomes and outputs that are not only compliant but also compatible and aligned to the Environmental and Social Policy of the Adaptation Fund. The project targets to provide benefits to 40,933 households and other stakeholders including institutions involved in planning and management of Mpologoma catchment.

Economic benefits

The project will directly contribute to improved incomes and livelihoods through development and implementation of Flood Early Warning systems, climate resilient WASH technologies and catchment protection measures. In this case, it is expected that there will be a tremendous reduction in the loss of lives, property and assets; reduction in waterborne diseases as well as increased provision of quality and quantity of water resources from the protected source and water points. The enormous financial resources expended on such items including replacing lost properties and assets, medical bills resulting from treating water borne diseases will be drastically reduced following implementation of FEWS and climate resilient WASH technologies and catchment protection measures. The directly saved incomes will be invested by community members into other productive ventures including agricultural production of high value crops such as coffee growing and fruit trees growing at household level. The planned trainings in FEWS and climate resilient WASH technologies (activity 1.2.1.3), source protection measures (activity 2.1.2.2), landscape flood control and landslide management (activity 2.1.3.1), and other forms of training and awareness raising will directly provide community members with the knowledge and skills to plan, design and implement WASH interventions and consequently reduce financial expenses that would have otherwise been incurred without FEWS and WASH measures thus saving and increasing their incomes. Similarly, implementation of climate resilient and innovative adaptation actions such as construction of: landscape flood control structures (activity 2.1.3.2); domestic rain water harvesting facilities for communities (activity 2.1.3.3); climate proof faecal sludge management facilities (activity 2.2.1.2) and reinforcing the water abstraction, storage and transmission infrastructure/facilities (activity 2.2.2.3) contribute to reinforcing communities against losses of properties and assets to floods and lands as well as indirect reduction to associated costs from waterborne diseases. Women groups will be formed and capacitated to directly construct and operate public sanitation facilities in small towns and rural

growth centres at a small fee (activity 2.2.1.1) that will be saved and utilised in undertaking other alternative Income Generating Activities (IGAs). Economically, women groups will further benefit from additional incomes arising from undertaking sanitation value chains (e.g. fecal sludge emptying) (activity 2.2.2.1) that is a key alternative business as an IGA. Overall, the proposed project activities contribute to reduction of economic losses of vulnerable communities due to floods and landslides and providing innovative WASH related IGAs for women thereby indirectly and directly enhancing incomes and alternative livelihoods for community members. These are the main economic benefits from the proposed project.

Social benefits

Socially, the proposed activities promote water security among communities and other stakeholders in the catchment. In posterity, water insecurity related conflicts and unrest and unnecessary migrations of human populations will as well be managed by implementing the proposed project activities. As the project supports women groups to engage in operating fecal sludge management and maintenance and undertaking sanitation value chains as alternative businesses, another benefit of social cohesion will be achieved. Socially women leadership, financial business management and record keeping skills, mobilization and costing and budgeting skills will be achieved. As the project supports women groups working together and other communities working together, the proposed project will directly empower vulnerable groups to build trust, and other social attributes that could be relied upon to engage in other socio-economic enterprises. Activities involving sharing Flood Early warning information and climate resilient WASH information in various forums will also socially provide the benefits of coordinated and complementarity aspects among the key stakeholders by reducing conflicting information dissemination thereby breeding harmony in tackling floods and landslides in the catchment. Overall, the main social benefits are reduced social unrest, conflicts and, migration of community members as they flee from floods and landslides as well as achieving social cohesion and harmony among women groups and other stakeholders in implementing climate resilient WASH measures in the catchment.

At the environmental level

Indeed, the project plans to improve water resources quality and quantities, to prevent communities from natural disasters and avoid waterborne epidemics and achieve catchment protection. The proposed project will positively impact on the natural ecosystems through implementation of landscape flood control and landslide management measures as well as water point and source protection measures and catchment protection measures involving restoration and rehabilitation of degraded ecosystems. Through implementation of FEWS, climate resilient WASH technologies source protection and catchment protection measures, the proposed project will directly be contributing to reducing the impacts of floods and landslides. The integration and incorporation of FEWS and climate resilient WASH into institutional planning frameworks including the districts and sub counties development plans, the CMP, SCMPs will greatly contribute to the overall management of floods and landslides at various levels in the catchment. Capacity needs assessment and enhancement activities including trainings will benefit different stakeholders at different levels with the requisite knowledge and skills to plan, design, implement and monitor FEWS and WASH interventions with strengthened capacity to timely respond to floods and landslides. By undertaking source and Catchment protection, Catchment Management Leaders and natural resources managers as we well as the individual community members directly benefit from the improved and climate resilient measures, plans and eventually reduce the damages and losses to environment and environmental goods and services associated with climate change disasters especially floods and landslides. In addition, the implementation of concrete adaptation actions such as restoration of degraded ecosystems and climate resilient WASH technologies, the proposed project will provide concrete benefits on the ecosystems, floods control and landslides management and waste management and reuse structures that reduce soil erosion and eventual pollution and contamination respectively for both surface and ground water sources.

The other direct environmental benefits that will be provided by the proposed project include: water point and source protection measures landscape flood control and landslides management using landscape structures; restoration of degraded swamp forests, mountainous forests, wetlands and river banks; climate proof fecal sludge management facilities; climate proof wastewater re-use and waste management; public sanitation facilities in small towns and rural growth centres. These activities will not only ensure availability of clean and safe water for community use but also vital in preserving and increasing resilience of the ecosystems, biodiversity and human populations against floods and landslides. Source protection measures will not only involve innovative water and soil conservation measures, but also tree planting, planting of grass bands and construction of stone embankments during flood control, landslide management and ecosystems restoration to ensure availability of safe and clean water resources for human and livestock populations among the communities in the catchment. In compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund, the project will target at least 40% of urban and peri-urban women as the major beneficiaries of project interventions. In addition to further provide benefits to vulnerable groups, two specific activities will target and directly benefit. These interventions include supporting women groups to construct and operate public sanitation facilities in small towns and rural growth centres (Activity 2.2.1.1); and supporting women groups to undertake sanitation value

chain (e.g. fecal sludge emptying) Activity 2.2.2.2). The planned interventions will be screened against the 15 ESP Principles and GP of the Adaptation Fund. An ESMP will also be prepared at Full proposal development stage to ensure the possible negative impacts from interventions are mitigated. For those unidentified sub-projects especially from construction of water and other facilities, an EIA supported with ESMP will be done. With such efforts, benefits to vulnerable groups will be enhanced.

C. Project cost-effectiveness

This CARFEWW project is designed as an integrated project that values and takes into consideration the interconnectivity, relatedness and interlinkages between climate information generation through Floods Early warning, climate resilient WASH technologies and ecosystems management based on floods and landslides control structures and catchment management measures. Implementation of project activities under such aspects in an integrated and holistic manner rather than as independent projects not only reduces the costs of duplication of interventions but also reduces/ cuts costs and enhances various benefits to populations and environment thus rendering the entire project cost effective. Considering that the project targets about 40,933 beneficiaries with a total financial investment of USD 9.5 million, it is expected that the benefits likely to accrue socially, economically and environmentally will inevitably lead to improvements or enhancements in peoples' resilience to floods and landslides, their wellbeing and improved livelihoods as well as ecosystems; because interventions are designed to cut on costs associated with floods and landslides. Beneficiaries are expected to reap increased financial benefits from reduced costs associated with losses of lives, assets and other properties due to floods and landslides at least mid-way project implementation. The would be saved incomes could contribute to enhancing or boosting household level production. In this way, the project should be able to lead to positive benefit-cost ratios that point to a cost effective project. Finally, the project is cost effective when knowledge and skills and information sharing are included as additional greater benefits. These are greater benefits because, the knowledge acquisition, skills acquisitions and information sharing from project design have a multiplier effect among stakeholders including other populations within and outside the proposed project sites. In posterity by the end of the project, more indirect project beneficiaries would have been reached and benefited from project interventions either through word of mouth from direct beneficiaries, or observing and learning from interventions among their peers within the project sites and from documents capturing good practices and lessons learned during project implementation. With such evidently higher qualitative benefits, the dimension of considering interventions designed to focus on training, knowledge and skills acquisition as well as sharing information further reveals that the project is cost effective and worth investing in. Furthermore, considering a similar project such as EURECCCA as the main alternative for promoting the resilience of communities to floods and landslides, a comparative evaluation of the level of investment under the proposed project broadly reveals that this is a more likely worth investment than EURECCCA in the same region within a similar period of 4four years as follows. The EURECCCA project that has operated in the same region, targeted about 18,400 people with USD 7,781,000. The proposed CARFEWW project targets to benefit 40,933 people with an investment of USD 9,504,600. Assuming the same level of investment (i.e., USD 9,504,600 less USD 7,781,000 = USD 1,723,600 worth an investment for an extra 22,533 people directly. This implies that USD1,723,600/22,533 = USD 76.5 per person. It also implies that with the current project less financial resources (i.e., USD 7,781,000/18,400 people = USD 422) will be invested to benefit more people (i.e., USD 9,504,600/40,933 people = USD 221) to address the risks of floods and landslides. Therefore, with such a comparative evaluation on the level of investment, it is likely that the CARFEWW project is cost effective and worth an investment. A detailed study to consider a more detailed cost effectiveness of the chosen activities will undertake during the full proposal development stage.

Cost effectiveness of the project will also be ensured through a) promotion of low cost water supply, sanitation and catchment management technologies, b) establishment of community management structures that will ensure the active involvement of the communities in project implementation resulting in provision of free labour to the project and building capacity within the communities to be able to scale up activity implementation beyond the project sites, c) establishment of a revolving fund scheme for alternative income generating activities will ensure access to credit by communities to enable them implement activities that not only mitigate impacts of climate change but also improve their incomes and livelihoods. The low cost water supply and low-cost sanitation set-ups that are associated with low-income countries where the target populations are vulnerable are proposed for consideration. For instance the use of different pit lining options for collapsible soils using locally available materials will be considered. In the case of Mpologoma, mud brick lined / elevated chambers or bamboo (or another locally available material) lining will be used as the most appropriate and cost effective sanitation technology. These would not prevent inundation but at least would prevent destruction in the event of a flood. These options are likely to be lower cost and therefore more cost effective at household level than solutions of using concrete, red bricks and septic tanks. In combination to using locally available material the concrete options can also be combined to the local ones. The Elevated Pit Latrine (including Earth Stabilized or Mound Latrine), Sand Enveloped Raised Pit Latrine, and Step Latrine will be considered. In all of them, the excreta treatment unit (the pit) consists of a set of concrete rings one on top of the other up to a height sufficient to ensure that the superstructure is

higher than the maximum high water level and thereby guaranteeing its proper functioning. For the solution technologies proposed, engagement with the private sector will be important to enhance the appropriate and affordable sanitation marketing that can ensure sustainable supply. This will include training of local masons to incorporate the flood resistant designs and for suppliers engagement will be done to stock appropriate material and marketing of products. Finally, cost effectiveness has been ensured by selecting some interventions for this project especially those identified and costed in the Catchment Management Plan (CMP) such as catchment protection measures, flood control, landslide management. The Mpologoma CMP is a detailed, robust, government plan that sets out the most appropriate, cost effective interventions for the 13 sub catchments within the catchment. These proposed actions feature a detailed participatory barrier analysis for the catchment and selection of the most cost effective responses tailored to available funds at catchment management authority, district local government and community levels.

D. Consistency with development strategies and plans

The CARFEWW project interventions are relevant and contribute to the attainment of the objectives of the **Uganda National Water Policy 1999 and related Policies**. Accordingly, the policy framework for the management and development of water resources in Uganda is based on the National Water Policy (1999). The National Water Policy promotes an integrated approach to the management of the water resources in ways that are sustainable and most beneficial to the country. It further recognizes the economic value of water, promotes the participation of all stakeholders, including women and the poor, in all stages of water supply and sanitation, and confirms the right of all Ugandans to safe water. The other policy that complement the water policy and relevant to this project include: National Environment Management Policy (1994); the Wetlands Policy (1995), the upcoming Land Use Policy; National Health Policy and Health Sector Strategic Plan (1999); National Environmental Health Policy (2005); the School Health Policy (2006); and the National Gender Policy (1997). The National Water Policy promotes an integrated approach to the management of the water resources in ways that are sustainable and most beneficial to the country. Overall, the proposed project contributes to the attainment of the country's national development and climate change adaptation contexts. Uganda has over the years made strides in designing strategies, policies, and plans aimed at mitigating and adapting to the effects of climate change. The priority actions of the proposed project are consistent with key strategies, policies, and plans. Uganda identified water resources management and climate change adaptation as key priority areas in its national policy or program documents including. The present **Uganda Vision 2040** lays out the general development objectives for Uganda over a 30-year period. Its goal is to transform Uganda from a predominantly peasant and low-income country to a competitive upper middle income status country. Together with the National Development Plan, Uganda Vision 2040 provides the overall leadership and policy direction for job creation and priority setting. The Uganda Vision 2040, sets out to the country's commitment for efforts to attain a green and clean environment. Vision 2040 further recognizes that climate change affects all sectors of the economy and emphasizes capacity enhancement as a necessary response to climate change related challenges especially through adaptation and mitigation strategies necessary. The proposed project interventions are designed to contribute towards the attainment of the objectives and priority actions set out in Vision 2040.

The **Uganda Intended Nationally Determined Contribution 2015**. The country's INDC recognizes that people's livelihood is highly dependent on the exploitation of her natural resources, including climate. In submitting this INDC, Uganda's priority is adaptation. The country will continue to work on reducing vulnerability and addressing adaptation in agriculture and livestock, forestry, infrastructure (with an emphasis on human settlements, social infrastructure and transport), water, energy, health and disaster risk management. Most of the interventions under the proposed project especially on developing climate resilient WASH infrastructure are consistent with the country's INDC. In line with Uganda's commitment to the UNFCCC and the Kyoto Protocol, Uganda is still committed to the adoption and implementation of policies and measures designed to mitigate climate change and adapt to its impacts. Under the **Climate Change Policy (NCCP) (2015)**, the country recognizes that climate change is one of the greatest challenges facing humanity in the century. The overarching policy objective is to ensure that all stakeholders address climate change impacts and their causes through appropriate measures, while promoting sustainable development. The country accordingly developed the policy to ensure a harmonised and coordinated approach towards a climate-resilient and low-carbon development path for sustainable development in Uganda. The policy prioritizes development of adaptation actions, mitigation, research and observation. The proposed project is consistent with this policy in terms of promoting community led adaptation actions and capacity development that is vital for promoting and implementing climate resilient WASH measures. Also the 2012 and contains, among others, a sub-programme for Integrated Water Resources Management of which water, sanitation and hygiene is a major contributing aspect that would help to reduce losses from floods, one of the main focus areas for the proposed project. The priorities in the National Climate Change Policy have already been integrated in the **Second National Development Plan (NDP II) 2015/16 - 2019/2020 (2015)** prioritizes climate change as cross cutting issue, and strategic climate change interventions have been included in the plan. Uganda has already embarked on the development of the **Third National Development Plan (NDP III)** that also recognizes that changes in climatic conditions have caused floods, droughts and landslides in various parts of the country resulting in

destruction of infrastructure, crops and settlement structures and general destruction of peoples' livelihoods as well as destruction of water supply that affects the quantity and quality and many other negative impacts. The planned interventions under the proposed project contribute towards the attainment of the objects and priorities of NDP III. Uganda's vulnerability to climate change was assessed under the **National Adaptation Programme of Action (NAPA),** in 2007 and identified the adaptation priority projects. The proposed project is anchored firmly in the priorities identified in the NAPA. The project will contribute towards implementing NAPA Priority projects in Uganda especially Land Degradation Management, and Water for Production and Development Planning Uganda's **National Communication** on climate change to UNFCCC includes, among other things, information on additional measures and policies to adapt as well as information on gaps and constraints including lack of financial resources and technical constraints, the weak capacity of local decision-makers to manage natural resources due to inadequate information and training constraints. The proposed project will also support the on-going process and efforts towards mainstreaming climate change in Uganda in key sectors of the economy through considering issue of climate change during National and District Strategic Development Planning processes. The project will also contribute to other on-going Catchment-based IWRM planning processes, and the new **National Adaptation Plan (NAP)** development process in Uganda; and the broader **Sustainable Development Goals** SDG 6- on ensuring availability and sustainable management of water and sanitation for all; SDG 13- on combating climate change and its impacts; SDG 17-on strengthening the means of implementation and revitalize the global partnership for sustainable development among others.

E. Relevance and alignment to national technical standards

The proposed project not only meets but is also compliant with the country's national technical standards and guidelines as well as the Environmental and Social Policy of the Adaptation Fund. The proposed project aims at increasing the resilience of communities to climate change risks of floods and landslides through sustainable community access to climate resilience water, sanitation and hygiene services and integrated catchment management measures in the catchment. The project goal essentially focuses on improving the state of environment and environmental conditions for the survival of people and ecosystems within the catchment. Considering the proposed project interventions, the project meets important environmental standards such as the Environmental Impact Assessment (EIA) Regulations (1998), sectorial EIA Guidelines of Uganda and the WASH design manual/guidelines 2014. Project interventions will not generally have negative environmental impacts. Positive environmental impacts are anticipated due to the expected various benefits such as reduced incidences and severities of waterborne diseases arising from reduced water pollution after developing climate resilient WASH infrastructure and services, improved waste management, improved water supply and harvesting for domestic uses, improved water for production, and enhanced alternative income generation among communities especially women groups. Regarding EIAs, most project interventions are anticipated to be categorised as "B" with minimal impacts. For project compliance with EIA standards, impact assessments will be undertaken to determine the magnitude of impacts for the proposed project interventions. Similarly, the proposed project interventions focusing on WASH are compliant with the standards for WASH design manual/guidelines 2014 of the Ministry of Water and Environment that guides implementers (such as Water Sanitation Development Facilities (WSDFs) of the water supply and sanitation systems in Uganda for planning, implementing and managing the systems. Such compliance with relevant technical standards will be explained in detail, including addressing environmental assessments, WASH climate smart technology designs, and other aspects required by national legislation at full proposal development stage. The proposed project activities will be screened, their impacts assessed and depending on the magnitude of the impacts, EIA or reviews done in accordance with EIA procedures and guidelines of the country's standards and those of the Adaptation Fund. Mitigation measures will then be proposed.

F. Complementarity with projects with other funding sources

During the initial consultative meetings of designing the CARFEWW project, efforts were made to ensure that no project intervention duplications were made. Project duplications in terms of resources or geographical coverage were avoided. Instead, the existing synergies and complementarity aspects of other projects undertaken by the participating partners and other partners in the catchment were harnessed for purposes of ensuring that the overall contribution to strengthening WASH resilience and catchment management measures thereby enhancing the adaptation of community members to floods and landslides are realised. For instance, the Ministry of Water and Environment has for two years now implemented an Adaptation Fund financed **EURECCCA project ("Enhancing the resilience of communities to climate change through catchment based management of water and related resources in Aswa, Maziba and Awoja catchments)** within the Kyoga Water Management Zone (KWMZ) in which Mpologoma catchment is found. The USD 7.78million aims at increasing the resilience of communities to floods and landslides. Although strides have been realised into project implementation including construction of flood control structures, river bank restoration, awareness creation and knowledge management and capacity building initiatives, it is worth noting that tackling WASH issues would add value to the holistic catchment management. The proposed project builds, complements and harnesses the synergies under EURECCCA project in the Kyoga Water Management Zone. Under the proposed project, the climate resilient

WASH technologies that enhance catchment management will be implemented in additional areas of the KWMZ. Similarly, WaterAid Uganda has implemented quite a number of water, sanitation and hygiene projects. The Eastern Umbrella for Water and Sanitation (EUWS) under the Kyoga Water Management Zone (KWMZ) has also implemented **World Bank funded and African Development Bank (AfDB) supported WASH projects** in the KWMZ and recognises the apparent inadequate availability and financial support for climate resilient WASH technologies. The proposed project will also complement the **UNDP-Country Office-Uganda implemented project on territorial approach to climate change adaptation in the Mount Elgon region**. In all the project situations highlighted the financial resources that can be used to implement the projects are way beyond the funding that can be sourced from one partner. Moreover, such integrated projects that are related to community based climate resilient WASH measures and catchment management measures to enhance climate change adaptation are not funded requiring a different development Partner. Despite such variations within among projects in the catchment, the proposed project harnesses the on-going processes therein, and supports practical implementation of some aspects of such related projects. The proposed project will collaborate with other interventions by NGOs and various district local governments within the catchment.

G. Learning and knowledge management component

The learning and knowledge component of the proposed project will enable stakeholders and project partners to learn and share experiences in form of the knowledge and skills acquired during project implementation. Experience sharing and cross learning interventions are duly considered for this project under component three. Knowledge awareness and information sharing will be implemented among different stakeholders. Knowledge and experiences will be shared by first documenting the good practices and lessons learned on FEWS, climate resilient water supply measures and technologies, planning, flood early warning systems, source protection measures, waste management, flood control structures, domestic water harvesting measures as well as adaptive catchment management measures. The project will support generation and documentation of case studies, good practices and lessons learnt from the implementation of this project on climate resilient water supply measures and technologies, planning, flood early warning systems, source protection measures, waste management, flood control structures, domestic water harvesting measures as well as adaptive catchment management measures. Following documentation, this information will be accordingly packaged in appropriate knowledge and information materials that easily meet the information needs and demands of various stakeholders are different levels, whether national, regional, district and local levels in the catchment. The main activities that will be implemented under knowledge management and information sharing will involve facilitating stakeholders to generate knowledge on the management of floods and landslides, conducting awareness raising meetings on climate resilient WASH technologies, piped water supply, wasteful water supply and other water losses , undertaking learning exchange visits, documenting lessons learnt and best practices, facilitating information sharing including supporting gender and disability rights groups to share climate resilient WASH information at different levels and engaging policy makers in dissemination of best practices on climate resilient WASH technologies. Learning and exchange visits will be organized for key stakeholders including catchment management committees and community leaders to appreciate climate resilient WASH technologies and adaptive flood and landslides control and management measures implemented in areas outside the project sites. It is expected that learners will also raise awareness about such in their communities thereby facilitating cross learning and knowledge diffusion. Information sharing will be periodically done at different platforms or forums organized for relevant stakeholders at national, regional, district and local or community levels during project implementation. To harness the contributions of knowledge management and dissemination, gender and disability rights groups will be supported to share climate resilient WASH information at different levels and policy makers will be engaged in dissemination of best practices on climate resilient WASH technologies. This knowledge management and dissemination strategy emphasises documentation and sharing of lessons learnt and evidence-based good practices on promising technologies, measures and other respective interventions amongst key stakeholders for eventual adoption and scaling up.

H. Consultative process

In order to promote ownership of the proposed project and support the sustainability of interventions therein, initial preliminary participatory consultative meetings were held among WaterAID Uganda and their international Partners, MWE field and Headquarter staff at project design stage in March and April 2020. Individual targeted telephone and email based stakeholder consultations were conducted following the Uganda Government lockdown measures for preventing COVID-19 spread. The individual consultations were organized and spearheaded by WaterAid Uganda (WAU) and targeted participants drawn from Ministry of Water and Environment (MWE), Non-Governmental Organisations (NGOs), Private sector, Government Parastatals, Catchment Management Committee (CMC) members including community leaders and district leaders from the districts located in the upstream, mid-stream and downstream areas of Mpologoma catchment. The targeted consultations allowed the participation of such stakeholders in project design. During the consultations, key stakeholders appreciated the climate change problem of floods and landslides and the need to develop climate resilient WASH infrastructure that will aid communities to adapt to floods and landslides were explored and discussed. Project

activities to deal with the identified problem were formulated and agreed upon. The objectives of the targeted consultations were to:

i. Provide information to key stakeholders about the Adaptation Fund and the current Concept note development processes and requirements
ii. Acquire ideas/ inputs by from key stakeholders and triangulate the information collected from stakeholders and literature and ground trothing from the field visit
iii. Agree on project activities and implementation arrangements

During the consultative process activities and adaptation measures to be included by the project, defined key stakeholders, their roles, responsibilities and contribution during project implementation were discussed. Project management structures and issues of sustainability and ownership, especially by communities and local governments were discussed and agreed upon. In addition to identifying the beneficiaries and targeted populations at local, district, regional and national level, vulnerable groups and gender considerations were considered in compliance with the Environmental and Social Policy and Gender Policy of the Adaptation Fund. The role of women as a special climate change vulnerable group of the community was acknowledged and specific interventions deliberately targeting women were equally determined and agreed upon. The list of stakeholders consulted is attached in **Annex II at the end of the consultation report**. Detailed consultations, gender analysis study and other relevant studies will be undertaken at full proposal development stage to evaluate the proposed activities of the project.

I. Justification with full cost of adaptation reasoning

Increased use of effective and efficient Flood Early Warning Systems and climate resilient WASH technologies by stakeholders: USD 486,000

There are inadequate and limited Flood Early Warning Systems as well as limited and inadequate climate proof WASH technologies in the catchment. Consequently, Communities in the catchment cannot easily plan to undertake adaptation actions for WASH and catchment management due to lack of climate information. Communities have therefore remained vulnerable and continue to lose assets, properties and lives and suffer from destruction of water infrastructure leading to water pollution, contamination and increasing waterborne diseases due to floods and landslides. The project will assess the status and develop efficient and effective FEWS systems as well also equip and upgrade selected weather stations for improved weather information. It will also support integration of traditional and modern FEWS and climate resilient WASH technologies in district, sub-county, catchment and sub catchment planning frameworks to aid communities access FEW information and WASH information so that they ably plan adaptation actions against floods and landslides. The project will develop guidelines for integrated floods and WASH planning, design, implementation and monitoring and popularize these guidelines by adapting them to different stakeholder needs for their wide utilisation. The guidelines will for instance be translated in local languages for easy utilisation by communities and their leaders. Based on these interventions, communities will easily adapt to floods and landslides as a first step towards equipping them with the necessary tools for climate information and WASH information.

Improved Capacity of key stakeholders at national, district and local levels for FEWS, WASH planning, designing, implementation and monitoring: USD 923,000

The capacity of stakeholders at different levels to design, plan, implement and monitor FEWS and WASH is largely limited. Also the capacity to integrate FEWS and climate resilient WASH interventions into different level development plans as well as the specific concrete t adaptation actions against floods and landslides including responses and coping abilities among communities aggravates the challenge. It is worse especially when districts and sub counties operate with limited budgets from the national budget allocation. Consequently, the overall capacity of communities to cope with increasing frequency and intensity of floods and landslides in the catchment is still very low in the project sites. This project will assess the specific capacity needs of various stakeholder at different levels in terms of designing, planning, implementing and monitoring FEWS and climate resilient WASH interventions. Capacity building plan and materials suitable for training and capacity enhancement at different levels at national. Regional, district and community levels will be developed and applied. Stakeholders at different levels will be trained in FEWS and climate resilient WASH technologies and field learning exchange visits focusing majorly on WASH will be organized for different stakeholders and a follow up capacity monitoring and supervision will be conducted to track changes or impact of capacity enhancement intervention. Capacity enhancement at different levels is meant to equip stakeholders with knowledge and skills to ably undertake the respective interventions at their levels. Once the national, regional, and district level stakeholders such as staff in local government and ministry are capacitated, then better efficient and effective guidance and service delivery to the lower levels especially community level is expected. To further consolidate capacity enhancement, the proposed project will facilitate the establishment and incorporation of climate resilient WASH into governance committees in Catchment and Sub-catchment organisations, WASH platforms at different levels for community learning, information sharing forums for Catchment Management Organisations and development of MOUs and implementation action plans so that regional, district and Sub-County levels stakeholders such as those at catchment management level, CBOs, LG

Authorities, MWE staff as well as those at inter-ministerial and inter-sectoral levels e.g. Water, Health, Education are also supported.

Increased uptake and use of concrete adaptive climate-smart WASH technologies and catchment protection measures: USD 2,833,000

Currently, there are limited, inappropriate and ineffective adaptation actions among communities to easily cope with the increasing frequency and intensity of floods and landslides in the catchment. Such adaptation actions are causing loss of assets, properties, lives, destruction of water infrastructure leading to water pollution and contamination thereby increasing waterborne diseases. Actually, the extreme high intensity floods and landslides are causing unprecedented water insecurity and food insecurity that greatly reduce the incomes and impede other livelihood options of communities. In order to increase the uptake and utilisation of appropriate and effective adaptation actions, the project will survey the status of WASH technologies, demonstrate climate resilient WASH models, train stakeholders in climate resilient WASH technologies for flood control, landslides management, source protection, ecosystem restoration/rehabilitation among communities upstream, midstream and downstream areas (including hilly/mountainous forests, wetlands, riverbanks, swamp/riverine forests, and support them to access WASH information and support construction of landslides resilient WASH technologies. Innovative source protection measures; The project will also support implementation of innovative adaption actions for source protection, flood control and landslides management, catchment protection The innovative adaptation actions include; construction of stone based embankments, planting vertiver grasses, trees, construction of landscape water harvesting and water storage structures, soil and water management techniques, ecosystems restoration and rehabilitation of degraded ecosystems upstream, midstream and downstream areas (including hilly/mountainous forests, wetlands, riverbanks and swamp/riverine forests.

Uptake and usage of concrete adaptation actions for water supply and sanitation measures increased: USD 3,147,000

There are limited options for climate resilient water supply and sanitation measures in the catchment. Consequently, the current water supply facilities are destroyed and buried by the increasing frequency and intensity of floods and landslides. Communities have continued to rely on inappropriate water supply technologies that not adapted to such floods and landslides. In order to increase the uptake and utilisation of appropriate and effective adaptation actions for water supply and sanitation, the project will under this component support the community to undertake adaptive and climate proof water supply infrastructure including: construction of public sanitation facilities, climate proof fecal sludge management facilities, climate proof waste water re-use and waste management facilities, domestic rain water harvesting facilities, as well as water abstraction, storage and transmission infrastructures. Awareness raising about such various water, sanitation and hygiene measures, facilities construction and management will also be supported by the project especially targeting vulnerable community members including women groups, children in schools, the elderly and youth including within and around the health centres. The project's respective component, outcomes and outputs will further support women groups to reap additional income through operation of public sanitation facilities and engaging in fecal sludge value chains by levying a small fee from which they earn extra income that is contributes to improving their adaptive capacity to the impacts of floods and landslides. Women groups will be trained in life cycle costing and maintenance of WASH facilities in towns and rural growth centres. The groups will also be trained on piped water supply management focusing on minimising wasteful water supply and other water losses as well as water supply and sanitation especially for communities in small towns and rural growth centres. In this way, the adaptive capacity of such community vulnerable groups will be enhanced.

Knowledge, awareness and information on FEWS and WASH increased: USD 311,000

There is limited awareness on the risks and adaptation actions associated with the increasing frequency and intensity of floods and landslides amongst stakeholders in the catchment. Such limited awareness is not only leading to poor planning and responses to such risks and disasters but also impedes the ability of local communities and other stakeholder to cope and adapt to the impacts such as loss of assets, properties, lives, destruction of water infrastructure leading to water pollution and contamination thereby increasing waterborne diseases, water insecurity and food insecurity low incomes and limited livelihood options. Based on such challenges, the project will support knowledge management and awareness creation through documentation of good practices and lessons on FEWS, climate resilient /climate proof WASH technologies, and improved catchment protection. Information on lessons and best practices from project interventions will be generated, packaged and disseminated. The knowledge and awareness raising component will also allow generation, packaging and development of information materials on FEWS, climate resilient WASH technologies and practices in appropriate forms to aid easy uptake (e.g., policy briefs, brochures). FEWS and WASH information sharing platforms will be strengthened by supporting gender and disability rights groups to share FEWS and climate resilient WASH information at different levels as well as engaging the policy makers in dissemination of best practices on climate resilient WASH technologies. The use of existing and popular platforms such as electronic and print media, telecom that are easily

accessible by the stakeholders will be utilised.

J. Sustainability of the project outcomes

The project is designed to ensure socio-economic, environmental, technological, financial and institutional sustainability dimensions as follows:

Socio-economic sustainability: The project design will promote socio-economic sustainability through supporting capacity building actions in developing FEWS, climate resilient WASH technologies and source protection measures, catchment management measures and waste management measures, that will enable communities, community leaders and other stakeholders at national, regional, district and local levels within the Mpologoma catchment. During capacity building, stakeholders acquire the requisite knowledge and skills to pursue or engage in socio-economic activities with full awareness of the likely impact of the respective actions. Socially, community groups, women groups and institutions, committees will work together during capacity building as well as activity implementation. This approach not only minimizes the likely conflicts among stakeholders but also promotes social cohesion which are vital attributes for socially and economically sustaining the project. .in posterity the promoted social cohesion among groups aids planning for adaptive and climate resilient socio-economic activities such as day to-day operation of public sanitation facilities by women through charging user fees in order to remain socially and economically productive even at project closure. Economically, it is anticipated that reduced losses of assets, lives and other properties as well as reduced waterborne diseases resulting from implementation of FEWS and climate resilient water supply infrastructure, sanitation facilities, source protection and waste management that lead to improved capacity for communities to adapt to floods and landslides; will eventually help communities and other stakeholders to enhance incomes, improve livelihoods and ensure economic sustainability. The project also ensures that the infrastructure constructed by the project are economically/financially sustained and maintained by establishing new or modifying and support existing interventions including infrastructure for ground and surface water sources, water points and other facilities. The project further proposes to incorporate flood control and landslides management interventions (e.g. on FEWS into planning and budgeting processes at district and sub-county local government levels

Environmental sustainability: The project will ensure environmental sustainability through strengthening the resilience of communities by facilitating them with WASH adaptive infrastructure to enable communities cope with floods and landslides and avoiding water contamination, pollution, flooded sanitation facilities e.g. toilets, and climate proof waste management facilities. For project interventions that are anticipated to have significant social and environmental impacts, independent Environmental and Social Impact Assessments (ESIAs) will be undertaken and approval sought from the National Environment Management Authority (NEMA). The ESMF has an environmental and social monitoring plan that will guide periodic monitoring and evaluation to track changes that could have adverse environmental and social impacts and ensure adequate mitigation. In line with the Social and Environment Policy of the Adaptation Fund, an Environmental and Social Management Framework (ESMF) will be developed as a guide on handling environmental and social issues during project implementation. in addition to the Social and Environmental Impact Assessments, baseline studies and KAP surveys on the status of FEWS, climate resilient WASH technologies for water supply, source protection, and waste management during the proposed baseline study on the existing traditional and modern early warning systems so that only warning systems will ensure that such interventions that are in tandem with sustainable environmental protection are supported. Periodic monitoring and evaluation to track any changes that could have adverse impacts to the environment and their timely mitigation measures will be considered during the implementation phase of the project.

Technological sustainability: The project design emphasizes development of FEWS and developing/upgrading the WASH climate resilient infrastructure for technological sustainability. Capacity building of all stakeholders including technical staff planning, handling, collecting, analysing and disseminating information of FEWS, and climate resilient WASH measures at national, regional, district and local levels, staff form other institutions CMCs. This will ensure enhanced resident capacity to process and disseminate early warning and climate disaster related information to key stakeholders as well as technical capacity to undertake concrete adaptation actions even long after the project has ended.

Financial sustainability: The project will collaborate with various partners in the catchment to mobilize resources, avoid duplication of interventions, and streamline project interventions by facilitating the local governments to incorporate FEWS and Climate resilient WASH measures into district and sub county plans and lobby the governments (national and local) to allocate financial resources towards disaster risk management. The investments made in the project duration such as FEWS, WASH investments and catchment management interventions will be sustained financially in the long term after project closure through long term funding provided through Catchment Management Organizations. Catchment Management Organizations that represent the interests of the people in the catchment are party funded by government through the regionally based Water Management Zones and by contributions from all the stakeholders that develop and operate water related infrastructure projects who have to make a contribution of up to 3% of their investment for catchment management and water source protection. Other sources of long-term funding will be secured from various other sources such as the established community revolving fund scheme for income generating activities, private sector, NGOs and relevant line ministries that operate in the catchment and have interest in the services provided by a well-

managed catchment. The Catchment Management Organizations with technical support of Water Management Zones will be responsible for sustainability of the various investments. In addition, the project will provide pilot data for each of the proposed interventions. Then strategic engagements will be done with the Ministry of Finance Planning and Economic Development, MWE and the National Planning Authority to provide budget support especially during the national planning and budget cycles where priorities for funding are considered. The strategic engagement will also include supporting lower district local governments to incorporate interventions into their development plans based on the project data. Furthermore, the proposed project will develop strategic engagement with the Development Partners Groups (members include bilateral, multilaterals, development banks, INGO) NDP III Program/sector working groups dealing with Environment and climate change as well as groups dealing with water and sanitation. This will give the project a good platform to engage participation in overlapping targeted components and share lessons with the groups and gunner interest for future developments. This way sustainability of interventions will be ensured. Partnerships with academia as part of the programme approach will support the quality publishable baseline information and subsequent monitoring processes that can be shared credibly.

Institutional sustainability: This will also be promoted through capacity building of staff and other stakeholders at various levels for better ownership of project interventions. Furthermore, development of MOUs and implementation action plan for climate resilient WASH information forums at regional, district and sub-county levels (CM stakeholders e.g. CBOs, LG Authorities, MWE structures); and establishing, and incorporating climate resilient WASH into governance committees in Catchment and Sub-catchment organisations contributes to promoting institutional sustainability of interventions after project closure.

K. Overview of the environmental and social impacts and risks

A preliminary E&S impacts assessment has been conducted while developing the proposed project to ensure that the project complies with the 15 principles of the Adaptation Fund Environmental and Social Policy (ESP). The AF ESP requires projects compliance and respect for the laws, people's rights, gender equity, heritage, biodiversity and environmental management. The main results are presented in the Table 3. At the Full Proposal development stage, a more detailed and comprehensive E&S Impact Assessment will be conducted.

Table 3: A preliminary E&S assessment of the potential impacts and 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 proposed project complies with the domestic laws, policies strategies and plans. A preliminary assessment has been done. (Section D, Part II). Detailed assessments will be done during the development of Environmental and social impact framework (ESMF) for the Project.	Risk: Low Potential Impact: Low Most of the components and corresponding interventions/activities of the proposed project do not fall within the First Category of projects that require full EIA.
Access and Equity	√	Risk: Low Potential Impact: Low Project activities will be accessed equally by the target communities without discrimination. In component 2, some activities such as construction and management of public sanitation facilities and sanitation value chains in small Towns and rural growth centers target specifically women. Management: The project will closely monitor the targeting of all project beneficiaries to assure equal access of men, women youth and the most vulnerable.
Marginalized and Vulnerable Groups	√	Risk: Low Potential Impact: Low Marginalized groups especially Women and youth will be specially targeted by the project activities especially the by supporting women to earn some income in operating public sanitation facilities and sanitation value chains for sludge management. This is an IGA where other community members pay fees to maintain such facilities. IGAs and grant activities in the target projects sites for each country
Human Rights	The project activities are not in any discriminatory by tribe, age and gender, level of education or PWDs. The project relied on the consultative approach. No activities are identified whose execution is not in line with the established international human rights. Project objectives promote basic human rights for equitable access to resources	Risk: Low Potential Impact: Low The project will be implemented using the existing government structures at local, regional and national levels and observations of human rights are a must.
Gender Equity and Women's Empowerment	Although specific interventions are targeting women, further detailed gender analysis will be done at full proposal development stage to ensure that all gender aspects of equity, empowerment and representation are fully incorporated into the proposal.	Risk: Low Potential Impact: Low The project has a special on focus on women and youth groups especially for income generating activities and grants to ensure that they fully participate and benefit from the project. Also, Participation of women will be encouraged in the field schools
Core Labour Rights	√	Risk: Medium Potential Impact: Medium The Project will ensure that Labor laws are considered in activity implementation especially during construction of flood control and landslide management, domestic water harvesting and storage structures, as well as reinforcement of water abstraction, storage and transmission infrastructure/facilities. The local communities will provide labour for constructing the structures on their land according to Uganda's labor laws.
Indigenous Peoples	√	Risk: Low Potential Impact: Low
Involuntary Resettlement	√	Risk: Low Potential Impact: Low The project interventions at local and district levels will involve communities in their locations, therefore, no resettlements or even displacement to new locations will be done. None.
Protection of Natural Habitats	√	Risk: Low Potential Impact: Low

		Efforts will be made to ensure that matching natural vegetation species will be used in source protection and endangered and threatened species will be conserved during construction of flood control and landslide management structures in project sites.
Conservation of Biological Diversity	Further consultations and assessments will be required during the development of Environmental and social impact framework (ESMF) for the proposed project	Risk: Low Potential Impact: Low At full proposal design stage, deliberate efforts taken to ensure that interventions are compliant with all relevant national and international laws after consultations with local, district, regional and national stakeholders for development of a detailed Environmental and social impact framework (ESMF) for the proposed project.
Climate Change	√	Risk: Low Potential Impact: Low Project activities will be developed to enhance the resilience of ecosystems and populations to Climate change focusing on adaptation to the impacts of floods and landslides in the targeted areas.
Pollution Prevention and Resource Efficiency	√	Risk: Low Potential Impact: Low Project activities will not generate pollution and loss of resources. It will contribute to energy efficiency, efficient water use and prevention of water pollution
Public Health	√	Risk: Low Potential Impact: Low The project interventions focus on climate resilient water sanitation and hygiene (WASH) to improve water resources quality and quantities and community health as well as the ecosystems health through landscape management interventions. The FEWS will also contribute to prevent communities from floods and landslides thereby avoiding waterborne diseases and other epidemics.
Physical and Cultural Heritage	Further detailed gender analysis will be done at full project proposal development stage in order to incorporate gender aspects including culture and other heritage.	Risk: Low Potential Impact: Low The project will promote local indigenous knowledge in designing FEWS and train communities to handle the new climate resilient WASH technologies and FEWS without negatively affecting c Specific physical assets in the project sites at local and district levels will not be targeted.
Lands and Soil Conservation	√	Risk: Low Potential Impact: Low The project component 2. Output 2.1.3 aims at promoting adaptive flood control and landslide management measures (including soil conservation, erosion control e.g. terraces, contours, soil. Therefore, no damages to soil, vegetation and land resources are expected to occur.

PART III: IMPLEMENTATION ARRANGEMENTS

A. Project management and implementation arrangements

Project management

The Ministry of Water and Environment (MWE) will be responsible for the overall management and oversight of the CARFEWW project financed by the Adaptation Fund, including all the financial, monitoring, and reporting duties as an Accredited National Implementing Entity of the Adaptation Fund. Accordingly, the Ministry of Finance Planning and Economic Development (MoFPED), as the Designated Authority, will receive the funds from the Adaptation Fund. The MoFPED will then channel the funds to MWE. The MWE will manage the disbursements to the Executing Entity (EE)-WaterAid Uganda (WAU) that will similarly release the activity based funds to the respective local level executing units including the Water Resources Institute, Kyoga Water Management Zone (KWMZ), Eastern Umbrella of Water and Sanitation(EUWS) and Water and Sanitation Development Facility(WSDF-East),Uganda Women Network (UWONET), and District Local Governments (DLGs) of upstream, Mid-stream and downstream districts of the catchment.

Project coordination

A National Steering Committee shall be stablished to coordinate project execution. The NSC will be composed of nine (9) representative stakeholders from the following institutions: Executing Entity, National Designated Authority (NDA), Directorate of Water Resources Management, Climate Change Department, Ministry of Health, Ministry of Disaster Preparedness, Ministry of Local Government, Private sector and CSOs/NGOs. Other organisations will be included where necessary.

Implementing Entity

The CARFEWW project will be implemented by the Ministry of Water and Environment (MWE) as an accredited National Implementing Entity (NIE) of the Adaptation Fund. As a NIE, the MWE will be responsible for all the financial, monitoring and reporting aspects of the project to the Adaptation Fund. The NIE will be in charge of the overall reporting of project implementation information and is accountable to the Adaptation Fund. Therefore, MWE will also provide administrative and management oversight of the project to the Executing entities.

Executing Entity

The lead executing entity for the project will be WaterAid Uganda (WAU). WAU will be supported by the Directorate of Water Resources Management (DWRM) which will provide the operational over sight role to the regionally based implementation units namely the Kyoga Water Management Zone (KWMZ), Eastern Umbrella for Water and Sanitation (EUWS), and Water and Sanitation Development Facility (WSDF-East). KWMZ will be responsible for implementing concrete adaptation actions on catchment protection and management at the regional and local levels. Eastern Umbrella for Water and Sanitation (EUWS) and Water and Sanitation Development Facility (WSDF-East) will be responsible for implementing the water, sanitation and hygiene interventions at the regional and local levels. The Water Resources Institute (WRI) will lead capacity-building interventions at national and regional levels. Uganda Women's Network (UWONET) will be responsible for providing strategic and technical guidance on gender and capacity building issues to the project partners including WRI, KWMZ and EUWS as well as WSDF-East as they implement respective interventions in the catchment. The other stakeholders that will be involved in project implementation will be the respective District Local Governments (DLGs) of the districts targeted in the upstream, midstream or downstream in Mpologoma catchment. The Catchment Management Committees (CMCs) and selected Community Based Organisations (CBOs) will collaborate with the local government administrative structures at sub-counties to reach out to the targeted beneficiary communities in the catchment.

Local level implementation

At local levels, the local communities including women, men, youth and elderly and their leaders will be the key beneficiaries targeted by the project. The project execution offices based in the Eastern Region MWE offices will closely collaborate with local government structures to implement project interventions following the local authorities planning guidelines. Overall, WAU in collaboration with DWRM and her deconcentrated regional structures (KWMZ, EUWS, WSDF), Water Resources Institute, DLGs as well as communities will execute the project with MWE as the NIE of the AF. Below is the organogram (Figure 4) for the project implementation arrangements. The specific roles and responsibilities of the NIE as well as the EEs are indicted in Table 4.

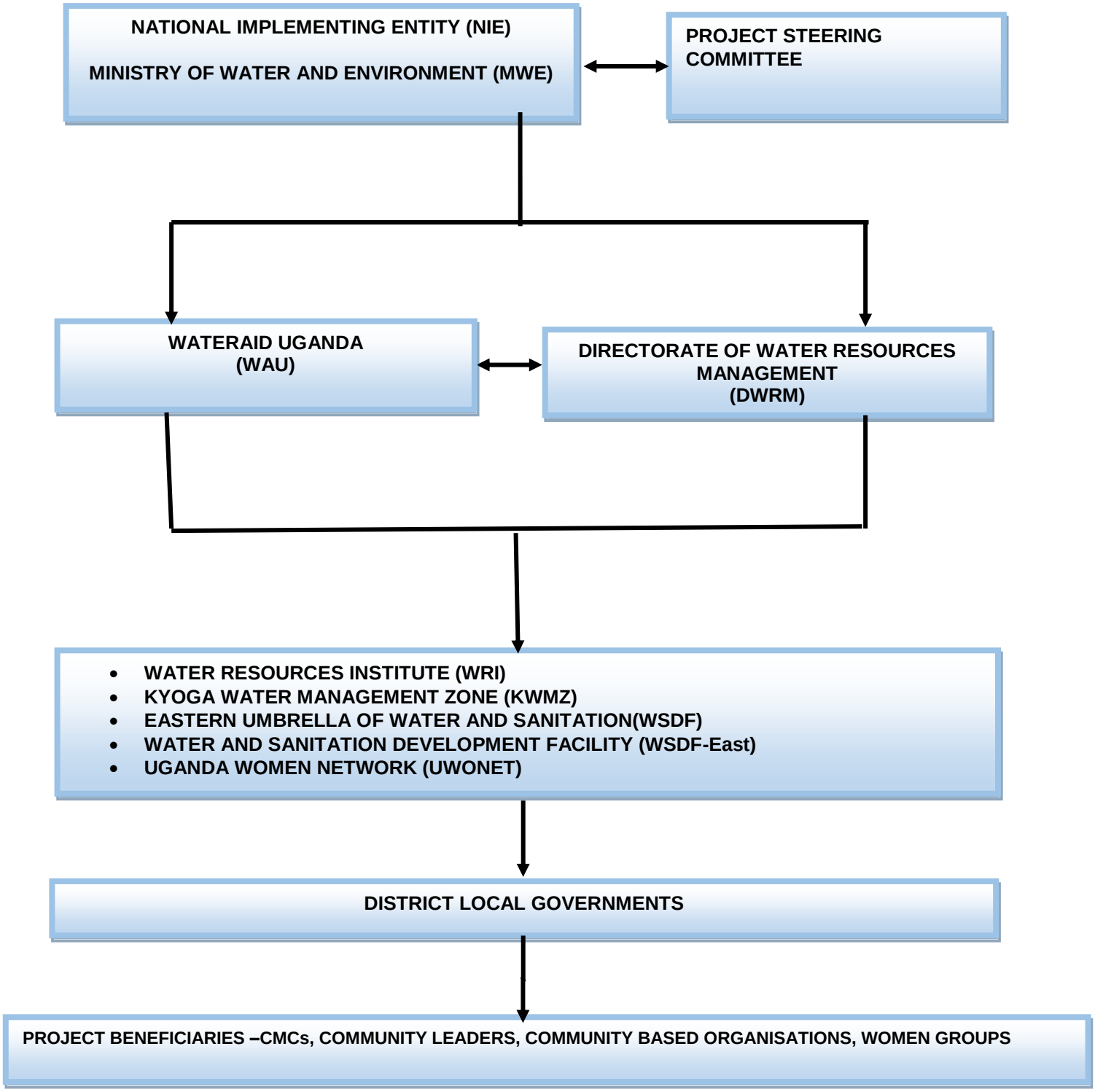

Figure 4: Project implementation structure

Table 4: Roles and responsibilities of project implementation partners

No	National Implementing Entity (NIE)	
Organisation		**Roles and Responsibilities**
1	Ministry of Water and Environment (MWE)	▪ For overall financial, monitoring and reporting project implementation ▪ Approves the annual work plans and budgets of the lead Executing Entities (WAU & DWRM) ▪ Approves annual financial and technical reports from the main Executing Entities (EE) (WAU & DWRM) ▪ Provides Liaison with National Designated authority (NDA) and Adaptation Fund (AF) ▪ Provides administrative and management support to the EE
Project Coordination		
1	Project Steering Committee	▪ Meet three times a year and provide strategic direction for the project where meetings will be organized back-to-back with other technical meetings; ▪ Facilitate cooperation between all project partners and facilitate collaboration between the Project and other relevant programmes, projects and initiatives in the catchment and region ▪ Advise on issues and problems arising during project implementation;
Executing Entity (EE) Partners		
1	Water Aid Uganda (WAU)	▪ Overall lead of project management, supervision, monitoring and reporting to the NIE ▪ Overall lead entity for execution of the WASH aspects of the project ▪ Provide technical guidance on implementation of WASH interventions ▪ Consolidation of project results ▪ Approval of quarterly and annual work plans and budgets from partner EE as well as their progress reports ▪ Ensure compliance of project interventions with other national frameworks
2	Directorate of Water Resources Management (DWRM)	▪ Overall oversight for interventions of the WRI, KWMZ and EUWSDF ▪ Responsible for implementation of interventions on catchment management ▪ Approval of annual, quarterly and progress work plans and budgets from the WRI, KWMZ and EUWSDF ▪ Ensure quarterly and annual reporting of project results from the WRI, KWMZ and EUWSDF ▪ Harmonise and assist WAU in quarterly and annual reporting to NIE ▪ Ensure project reporting for Government of Uganda standards are adhered to by EE
3	Water Resources institute (WRI)	• Undertake capacity building interventions at national and regional levels in coordination with DWRM and WAU • Prepare and submit quarterly, annual work plans and budgets to DWRM • Provide quarterly and progress reporting to DWRM on capacity building interventions at national and regional levels
4	Kyoga Water Management Zone (KWMZ)	• Undertake catchment protection and management interventions at national and regional levels in coordination with DWRM and WAU • Prepare and submit quarterly, annual work plans and budgets to DWRM • Provide quarterly and progress reporting to DWRM on catchment protection and management interventions at local level
5	Eastern Umbrella Water and Sanitation (EUWS)	• Undertake WASH interventions at national and regional levels in coordination with DWRM and WAU • Prepare and submit quarterly, annual work plans and budgets to DWRM • Provide quarterly and progress reporting to DWRM on WASH interventions at local level
6	Water and Sanitation Development Facility (WSDF-East)	• Responsible for water supply and maintenance • Prepare and submit quarterly, annual work plans and budgets to DWRM • Provide quarterly and progress reporting to DWRM on WASH interventions at local level
7	Uganda Women Network	• Provide strategic guidance on gender and capacity building to WRI, KWMZ and EUWSDF • Ensure considerations in planning, implementation, monitoring and reporting by partner EE of the project. • Prepare and submit quarterly, annual work plans and budgets to WAU and DWRM • Prepare and submit quarterly, annual and progress reports on gender considerations on respective interventions to WAU and DWRM

B. Financial and risk management measures

Generally, Mpologoma is a big catchment covering an area of approximately 7,862 km^2 of land area and 1,127 km^2 of water area[22]. It comprises 16 districts each with a local government structure from the district, to the Sub County and lower local levels up to the community levels. With such a structure, it is inevitable that political and administrative related risks are likely to emerge during the implementation of such a project. Some of the likely risks that would impact on project financial resources and risk management measures are presented in Table 5.

Table 5: Project financial risks and management measures

Risk	Rating	Risk Mitigation Measure
Political risks		
Lack of political will to implement the project at national and local levels	Low	• National, regional and Local Government Authorities have all demonstrated commitment to the project • Undertaking comprehensive and rigorous stakeholder consultations at Full proposal development stage • Undertaking regular consultations and updates with involvement and reporting with relevant institutions during project implementation • The implementing entity and Executing Entity have previously implemented other projects in and nearby the proposed sites hence are trusted amongst government and local leaders and other institutions.
Low collaboration and conflicts over project involvement amongst the 16 district local governments	Low	• The 16 districts will be clustered for participating in different project activities depending on whether upstream, mid-stream or downstream. • The district political and technical leadership will be involved from the baseline survey stage, to national and regional consultations. • Project updates and briefs will be regularly provided to the district political and technical leadership through a focal office at the district.
Limited participation in project interventions by communities in different areas	Low	• The project plans awareness raising meetings at local community level to ensure that communities participate actively in project interventions • The project targets to involve community leaders and catchment and sub catchment committee members to lead project Managers and other partners to project beneficiaries at community level i.e. the farmers and pastoralists. • Also the Community Based Organizations (CBO) operating in proposed project sites will be sensitized on the project activities for implementation
Social risks		
Ineffective communication of project goal and objectives and targets	Low	• Ensure that translation from English to local languages is done at local meetings • Ensure that project staff recruited to implement the project at community level understand and are fluent in the local languages • Involve community facilitators /or local leaders in organizing and facilitating the local meetings.
Economic risks		
Project financial management and accountability	Medium	• Strict adherence to separation of roles in financial management and audit • Provide financial management and audit support under the Monitoring and evaluation costs of the project.
Unstable/fluctuations in US dollar currency that may affect project results	Medium	• MWE as the implementing Partner will monitor the economic situation and seek for support from Adaptation Fund, address/adjust accordingly in agreement with the executing entity
Environmental risks		
Adverse weather affects or extreme weather events	Medium	• Ensure that climate information is communicated and correctly interpreted for local communities in and outside project sites
Emergence of pandemics		• Ensure close coordination with relevant Ministries such as Ministry of health and district authorities to effectively communicate and address the associated health risks by project management, staff and other stakeholders.
Technical risks		
Poor monitoring and evaluation and delayed delivery of outputs	Low	• Develop a detailed participatory M&E framework with the key project partners • Conduct regular follow ups and timely continuous monitoring and evaluation
Limited capacity of communities and other stakeholders to undertake integrated flood control and landslide management measures in project sites	Medium	• Conduct capacity building sessions in meetings and workshops as indicated in the project narrative • Undertake training sessions for different stakeholders as indicated in components 1 and 2. Link the targeted project beneficiaries to project demonstration sites and implement the learning and exchange visits

[22] MWE, 2018. Mpologoma catchment management plan

C. Environmental and social risk management

According to the Environmental and Social Policy and Gender Policy of the Adaptation Fund, 2016, The Environmental and Social Policy of the Adaptation Fund requires that projects /programme activities comply with environmental and social safeguard standards to enhance sustainable development benefits and avoid unnecessary harm to the environment and affected communities. This requirement is vital in avoiding, minimizing or mitigating the negative impacts that if not mitigated would endanger communities and other stakeholders and ecosystems. Implementing entities are required by the ESP of the Adaptation Fund to screen project interventions for potential environment and social risks and impacts. The E&S policy categorizes project activities by nature of adverse impacts that may be caused. For the proposed project, impacts levels are evaluated to be generally low or medium risks, hence the project will be under Category "B". This implies that the project interventions have minimal impacts that are limited to the project area. Such small-scale impacts can be easily managed through good environmental and social management practices. As earlier indicated **in Part II section L**, the project will undertake environmental impact assessment and environment impact reviews depending on the scale of threat of project activities. Following preliminary consultations, the specific risks identified and proposed management measures are presented in Table 6.

Table 6: Identified risk and their proposed risk management measures

No	Identified risk	Level of risk (High, Medium and Low)	Risk Management measures
1)	Inadequate gender considerations especially ensuring gender equity and women's empowerment in project implementation and outcomes	Medium	Gender equity and women's empowerment are one of the project main assumptions: • Deliberately target at least 40% participation of women in project activities including capacity-building sessions, consultations and consultative workshops, provision of inputs and operation of sanitation value chains and source operation and management. • Ensure that at least 40% of project direct beneficiaries targeted are women • Encourage equal participation of men and women in the project activities and in particular capacity building. • Promote local indigenous knowledge in designing FEWS and train communities to handle the new climate resilient WASH technologies and FEWS without negatively affecting specific physical assets in the project sites. • Work with women groups and strengthen such groups in organisational capacity to reach more women and vulnerable groups.
2)	Likely Biodiversity loss and natural habitats degradation during construction of flood control and landslide management structures across landscapes	Medium	• Undertake awareness creation among communities to understand the techniques of establishing the structures while conserving key species. • Incorporating and emphasizing natural resource governance during capacity building in FEWS, WASH technologies, source protection and waste management sessions. • Undertaking community-based control of invasive species as well as pests and diseases in the project sites.
3)	Potential land and soil degradation during project implementation especially constructions and source protection	Medium	• Promote soil and water conservation practices among communities • Promote domestic water harvesting and reduce water loss during water supply • Implement environmental impact assessment recommendations to minimize any such impact of land and soil degradation.
4)	Exclusion of marginalized and Vulnerable Groups	Low	Target the most vulnerable to floods and landslides among the targeted communities in the project sites • Ensure that project activities target and support the most vulnerable including women, women headed households, children and youth. • Conduct community level consultations in the target sites, including with vulnerable groups, female headed households
5)	Compliance with the law	Low	Project design will be compliant with all relevant international, regional and national laws following extensive consultations with local, district, regional and national stakeholders.

D. Monitoring and evaluation arrangements and Budget

The Monitoring and Evaluation (M&E) arrangements will aim at providing a regular update on the progress of implementation of activities in terms of in-put delivery, work schedules and planned outputs/targets. It will involve routine information gathering, analysis and reporting to partners, executing institutions, communities and other stakeholders.

Baseline & Evaluation

Due to inadequate local data at district and sub-county level, the project will conduct a baseline (including a statistically representative household survey and FDGs) to obtain pre-intervention data for output and outcome level indicators, further set geographic priorities and beneficiary identification, and re-strategize the project approach where necessary. As part of this process, an external consultant will provide an appropriate research design and data collections tools (where WAU standard tools do not already exist), provide training to enumerators on the use of data collection tools, and ensure that the tools are adequately field-tested and refined as appropriate. The baseline process in collaboration with local stakeholders will as well as conduct a Gender, Child Protection and Socio- Economic analysis to inform training and sensitization of field staff and partners. The baseline findings and values will inform targets and milestones for each indicator.

Midterm and end of the project evaluation will be conducted in the second and last year of the project and will enable assessment of the outputs and outcome of the project, by comparing the situation before and after the interventions, while also providing for attribution to the resources invested by the project. The evaluation will apply the same methodology as the baseline, combined with additional qualitative FDGs and key informant interviews (KIIs) to measure proxy changes at the population level in terms benefits and environmental messages reached to target populations. Multiple information sources will be utilized, and information from these sources will be triangulated, to provide contextual information relevant to the key evaluation questions.

Routine Monitoring & Reflections

Activity and budget tracking and monitoring of the project will be undertaken monthly by the Project Manager supervised through the Head of Programmes. Implementation achievements will be compared with planned activity targets, and budgets compared with actual spend.

Output and Outcome monitoring will be undertaken according to the M&E Plan, which will be further refined in consultation with the MWE and the District Environment Team. Oversight of monitoring data will be with the District Environment Officer(s) (DEO), Supervised by the WAU Quality Assurance Technical Lead who will also provide capacity building to partners as necessary in order to facilitate successful monitoring. At the inception workshop, the indicators will be reviewed together with the District Technical Teams, and responsibility and timelines for data collection, analysis, and sharing will be allocated and documented. Existing monitoring tools of WAU and MWE will be reviewed and adapted as necessary to ensure alignment with the data requirements of the M&E framework or will be collaboratively developed.

Monitoring data will be entered into a purposefully created project level database(s) and progress on each indicator up dated in the WaterAid MIS the Project Center.

The Adaptation Fund Board requires that Implementing Entities submit their annual status reports on projects and programmes under their implementation to the Ethics and Finance Committee (EFC) of the Adaptation Fund. The EFC with support of the Adaptation Fund Secretariat monitors the Adaptation Fund portfolio of projects and programmes. Implementing Entities therefore, ensure that the capacity to measure and monitor results of Executing Entities at the country-level exists.

Based on this background, MWE as an Implementing Entity for the proposed project will supervise all the M&E activities of the project. MWE will also prepare Annual Project Reports and submit to the Adaptation Fund to monitor progress. The reporting will focus on the project results framework by highlighting the following aspects: Progress made towards project objectives and project outcomes - each with indicators, baseline data, mid and end-of-project targets and milestones cumulatively. Project outputs delivered per project outcome (annual); Lessons learned/good practices; Annual expenditure reports; as well as reporting on project risk management.

As part of generation of lessons and best practices **under Output 3.1.1:** Good practices and lessons learned on WASH documented and disseminated, quarterly Learning and accountability meetings with project stakeholders will be facilitated by the project team. Key learnings and best practices arising from these meetings will be documented by the Project Manager and analyzed together with the Quality Assurance Technical Lead and Communications Specialist and shared in the different forums. The detailed M&E budget and work plan is presented in Table 7. **Table 7:** Proposed project Monitoring and Evaluation Work Plan and Budget

M&E activity	Responsible parties	Budget (USD)	Time frame																	Notes
			2021	2022				2023				2024				2025				2026	
			Quarters																	
			4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	
Detailed studies: ESMP, Gender analysis and social, economic and	Project Manager, WAU/ Consultants	70,000																		Baselines to be undertaken at project inception to facilitate tracking changes And/or impact

environmental baseline study																				
Regular/ routine monitoring	Project Manager, WAU	80,000																		Will be undertaken quarterly
Mid-term evaluation	Project Manager, WAU and MWE	30,000																		Will be done after two years
Final evaluation	Project Manager, WAU/MWE	40,000																		Will be done at least two months before the end of the Project
Terminal project report	Project Manager, WAU/MWE	30,000																		Will be submitted at the end of the Project
Final Audit	MWE	50,000																		Will be done at least two months before the end of the Project
Total M&E Costs		**300,000**																		

E. Results framework with milestones, targets and indicators

Result	Indicators	Baseline	Milestones (After 2 years)	End of Project Targets	Means of Verification	Responsible Parties	Risks and Assumptions
Objective: To increase the resilience of communities to climate change risks of floods and landslides through sustainable community access to water, sanitation and hygiene services and integrated catchment management measures in Mpologoma catchment.	• Proportion (%) of beneficiaries/households and users of FEW information and WASH technologies • Proportion (%) of beneficiary households engaged in adaptation measures against floods and landslides • Proportion (%) of community members with increased incomes due from controlled floods and landslides.	(To be determined at baselines)	• Number of beneficiaries/households and users of WASH technologies (to be determined) • Number of beneficiary communities undertaking adaptation measures (to be determined) • At least 20% of beneficiary community/household members with increased incomes.	Number of beneficiaries/households and users of WASH technologies (to be determined) Number of beneficiary community members undertaking adaptation measures (to be determined) At least 60% of beneficiary community members/households with increased incomes.	• Project implementation reports • Field visits • M&E reports • Interviews with community leaders/ or beneficiary members of communities/households	• MWE, • WRI, WAU and Focal persons in MWE and WAU	• Conflicts over access and use of water and land resources in the catchment • Availability of adequate security so as to enable project implementation (Assumption) • Political will to support project activities at regional, national and local levels
Component 1: Strengthening the capacity of institutional catchment management framework for WASH planning, designing, implementation and monitoring							
Outcome 1.1 Increased use of effective and efficient Flood Early Warning Systems (FEWS) and climate resilient WASH technologies by stakeholders	• Proportion of community households using FEWS and WASH technologies	There are inadequate and limited Flood Early Warning Systems as well as limited and inadequate climate proof WASH technologies in the catchment. Early Warning information rarely received and utilised	At least 30% of targeted beneficiaries access and utilise EW information and climate resilient WASH	At least 70% of targeted beneficiaries access and utilise EW information and climate resilient WASH	• Project implementation reports • Field visits • M&E reports • Interviews with Catchment Management governance structures and local leaders	• MWE, • WRI, and • Focal persons in MWE and WAU	• EW systems are functional • Project beneficiaries access EW information timely • Project beneficiaries embrace and utilize climate resilient WASH technologies
Result	**Indicators**	**Baseline**	**Milestones (After 2 years)**	**End of Project Targets**	**Means of Verification**	**Responsible Parties**	**Risks and Assumptions**

Output 1.1.1 **E**fficient and effective FEWS and climate resilient WASH technologies developed/in place	• FEWS status report • Climate resilient WASH application status report • Number of weather stations set up and upgraded • Number of times FEW information has been released by mandated institutions • Number of households utilizing FEW and climate resilient WASH technologies • Guidelines for integrated floods and WASH planning, design, implementation and monitoring	• Inadequate and limited FEWS and WASH technologies exist in the catchment • EW information and climate resilient WASH information rarely received and utilised	• 1 FEWS status report • 1 Climate resilient WASH application status report • 6 weather stations set up and upgraded • FEW information released by mandated institutions 3 times every quarter (48) times • At least 30% of targeted households utilizing FEW and climate resilient WASH technologies • 1 Copy of Guidelines for integrated floods and WASH planning, design, implementation and monitoring	• 1 FEWS status report • 1 Climate resilient WASH application status report • 12 weather stations set up and upgraded • FEW information released by mandated institutions 4 times per quarter (64) times • At least 60% of targeted f households utilizing FEW and climate resilient WASH technologies • 1 Copy of Guidelines for integrated floods and WASH planning, design, implementation and monitoring	• Project implementation reports • Field visits • M&E reports • Interviews with Catchment Management governance structures and local leaders	• MWE, • WRI, and Focal persons in MWE and WAU	Timely release of funds for interventions
Result	**Indicators**	**Baseline**	**Milestones (After 2 years)**	**End of Project Targets**	**Means of Verification**	**Responsible Parties**	**Risks and Assumptions**
Outcome 1.2 Improved Capacity of key stakeholders at national, district and local levels for FEWS, WASH planning, designing, implementation and monitoring	• Proportion (%) of staff in targeted institutions at national, regional, district and local level with enhanced capacity in WASH planning, designing, implementation and monitoring • Proportion (%) of households/community members with knowledge and skills in climate resilient WASH planning, designing, implementation and monitoring and technologies	• Inadequate capacity of institutions, community leaders and community members and/or households to plan, design and undertake climate resilient WASH measures	• Proportion (%) of staff in targeted institutions trained (to be determined) • At least 30% of targeted community members trained	• Proportion (%) of staff in targeted institutions trained (to be determined) • At least 80% of targeted community members trained	• Project implementation reports • Field visits • M&E reports • Interviews with Catchment Management governance structures and local leaders	• MWE, • WRI, and Focal persons in MWE and WAU	

Output 1.2.1 Capacity to plan, design, implement and monitor Climate adaptive WASH among stakeholders at different levels improved	• Number of Capacity needs assessment report • Number of Copies of capacity building plans, • Number Copies of training manuals/guidelines • Number of stakeholders trained • Number of exchange learning visits conducted • Number of stakeholders applying knowledge and skills/engaged in climate adaptive WASH measures • Number of follow up and supervision visits undertaken	• Stakeholders at different levels have inadequate knowledge and skills to undertake Climate adaptive WASH	• 1Capacity needs assessment report • 3 Copies of capacity building plans • 3 Copies of training manuals • At least 30% of targeted stakeholders trained • 9 Exchange learning visits conducted • At least 30% of stakeholders trained are engaged in climate adaptive WASH measures • At least 30% of follow up and supervision visits undertaken	• 1Capacity needs assessment report • 3 Copies of capacity building plans • 3 Copies of training manuals • At least 80% of targeted stakeholders trained • 18 Exchange learning visits conducted • At least 80% of stakeholders trained are engaged in climate adaptive WASH measures • At least 80% of follow up and supervision visits undertaken	• Project implementation reports • Field visits • M&E reports • Interviews with Catchment Management governance structures and local leaders	• MWE, • WRI, and Focal persons in MWE and WAU	

Output 1.2.2 Institutional linkages and partnerships for WASH information utilisation and review established/improved	• Number of Functional frameworks for resilient WASH information utilisation and review at different levels • Number of governance CMOs or SCMOs with WASH integrated • Number of forums and platform events on WASH organized for information • Number of partnership agreements or MOUs reviewed or developed • Number of inter-ministerial and inter-sectoral WASH events supported and held	• The existing frameworks are not fully utilized to undertake climate resilient WASH measures. In some areas partnerships and coordination mechanisms are conspicuously lacking or weak and dysfunctional. Ministries and sectors such as water and environment, health and education undertake and communicate WASH information separately and disjointed to the same communities.	• At least 3 Functional frameworks for WASH established • At least 3 governance CMOs or SCMOs with WASH are functional • At least 6 press releases held • At least 2, partnership agreements/MOUs , and 2 forum/platform developed • At least 3 inter-ministerial and inter-sectoral WASH events held	• At least 9 Functional frameworks for WASH established • At least 9 governance CMOs or SCMOs with WASH are functional • At least 12 press releases held • At least 6, partnership agreements/MOUs, and 3 forum/platform developed • At least 3 inter-ministerial and inter-sectoral WASH events held	• Project implementation reports • Field visits • M&E reports • Interviews with Catchment Management governance structures and local leaders	• MWE, • WRI, and Focal persons in MWE and WAU	

Result	**ıdicators**	**Baseline**	**ilestones (After 2 years)**	**End of Project Targets**	**eans of Verification**	**Responsible Parties**	**Risks and Assumptions**
Component 2: Facilitating communities to undertake adaptation actions for climate resilient WASH that reinforce community resilience against floods and landslides							
Outcome 2.1: Increased uptake and use of climate-smart WASH technologies	• Proportion (%) of community members/households undertaking climate-smart WASH technologies • Proportion (%) of quality water points/sources due to erosion, floods, landslides occurrences	There are limited opportunities and options for undertaking climate-smart WASH measures among the vulnerable community members.	• At least 30% of community members/households are undertaking climate-smart WASH technologies	• At least 60% of community members/households are undertaking climate-smart WASH technologies	• Project implementation reports • Field visits • M&E reports • Interviews with Catchment Management governance structures and • Local leaders	• MWE, • WRI, and Focal persons in MWE and WAU	

Output 2.1.1 Efficient and sustainable WASH technologies demonstrated	• A KAP report on sustainable WASH technologies • Number of sustainable WASH demonstration sites established • Number of training sessions conducted/hosted	WASH demonstration sites are non-existent in the catchment. Model learning and cross learning continue to be limited thereby aggravating vulnerability of populations and ecosystems to floods and landslides.	• A draft KAP report on sustainable WASH technologies • At least 1 functional demonstration site • At least 2 WASH technologies demonstrated per sub-catchment • At least 18 training sessions hosted per demonstration site	• A final comprehensive KAP report on sustainable WASH technologies • 3 functional demonstration sites • At least 5 WASH technologies demonstrated per sub-catchment • At least 36 training sessions hosted per demonstration site	• Project implementation reports • Field visits • M&E reports terviews with Catchment Management governance structures and • Local leaders	• MWE, • WRI, and Focal persons in MWE and WAU	

Output 2.1.2: Adaptive catchment protection measures promoted	• A water point and source protection assessment report • Number of source points established • Number of source points protected • Number of community groups undertaking source protection measures • Number of hectares mapped • Number of community awareness workshops held • Number of hectares restored/rehabilitated • Number of sensitization meetings and workshops on revolving fund held • Number of community groups trained and prepared to access the revolving fund • Number of SACCOs branches formed and managing the revolving fund. • Number of community members benefiting from the revolving fund • Rates of return of the revolving fund	The status of water points and source protection situation are not known. communities are constrained by low water deliveries/ supplies, contamination /pollution and limited knowledge in management of water points. There is limited awareness on source protection technologies. Degraded ecosystems are not checking floods and landslides thereby aiding erosion and contributing to pollution and contamination of water resources in the catchment There is no revolving fund solely focused on natural resources management (IWRM and CC adaptation	• A water point and source protection assessment report • At least 6 source points established per sub-catchment • At least 6 source points protected • At least 8 community groups undertaking source protection measures • 30 hectares of degraded ecosystems mapped • 13 Community workshops held • 30 hectares of degraded ecosystems restored/rehabilitated • At least 3 community groups per sub-catchment) trained • At least 250 HH per sub-catchment are accessing the revolving fund • About 60% rates of return on investment	• A water point and source protection assessment report • At least 12 source points established per sub-catchment • At least 12 source points protected • At least 3 water well/spring/oasis protected • At least 12 community groups undertaking source protection measures • 60 hectares of degraded ecosystems mapped • 14 community workshops held • 30 hectares of degraded ecosystems restored/rehabilitated • At least 6 community groups per sub-catchment) trained • At least 500 HH per sub-catchment are accessing the revolving fund • About 80% rates of return on investment	• Project implementation reports • Field visits • M&E reports • Interviews with Catchment Management governance structures and • Local leaders	• MWE, • WRI, and Focal persons in MWE and WAU	

Output 2.1.3 Adaptive flood control and landslide management measures (including soil conservation, erosion control etc.) promoted	• Number of flood control structures constructed • Number of landslide management structures constructed • Number of domestic rain water harvesting facilities constructed • Number of community members/ households undertaking flood and landslide management measures	Although some floods and landslide management measures are practiced by communities, their knowledge and skills on adaptive landscape flood and landslide management measures is limited.	• At least 24 units for flood control constructed per sub-catchment • At least 24 units for landslide management constructed per sub-catchment • At least 36 units of domestic rain water harvesting facilities constructed • At least 30% of community members/ households undertaking flood and landslide management measures.	• At least 48 units for flood control constructed per sub-catchment • At least 48 units for landslide management constructed per sub-catchment • At least 72 units of domestic rain water harvesting facilities constructed • At least 80% of community members/ households undertaking flood and landslide management measures.	• Project implementation reports • Field visits • M&E reports • Interviews with Catchment Management governance structures and • Local leaders	• MWE, • WRI, and Focal persons in MWE and WAU	
Outcome 2.2 Uptake and usage of concrete adaptation actions and WASH measures increased	• Proportion (%) of community households undertaking concrete adaptation actions and WASH measures • Proportion of (%) of community households with improved alternative livelihoods	There are limited opportunities and options for undertaking climate resilient WASH actions for communities vulnerable to floods and landslides	• At least 30% of community members and households are undertaking climate resilient WASH actions • At least 30% of households and community members have improved alternative livelihoods	• At least 70% of community members and households are undertaking climate resilient WASH actions • At least 70% of households and community members have improved alternative livelihoods	• Project implementation reports • Field visits • M&E reports • Interviews with Catchment Management governance structures and • Local leaders	• MWE, • WRI, and Focal persons in MWE and WAU	
Output 2.2.1 Sanitation services in small towns and rural growth centres improved	• Number of women groups operating sanitation facilities as alternative livelihoods • Number of climate proof fecal sludge management facilities • Number of climate proof wastewater re-use and waste management facilities • Number of community training meetings • Number of behaviour change awareness meetings in communities, schools and healthcare centres	Sanitation facilities in emerging small towns and rural growth centres in the catchment are limited yet human populations therein are high and concentrated. This presents an alternative source of income to the women as the most vulnerable members of the communities in the catchment.	• At least 4 women groups operating sanitation facilities in small towns and rural growth centres • 3 climate proof fecal sludge management facilities • 18 climate proof wastewater re-use and waste management facilities • 12 Community training meetings for operators held • 48 behaviour change awareness meetings in communities, schools and health centres,	• At least 6 women groups operating sanitation facilities in small towns and rural growth centres • 36 climate proof fecal sludge management facilities • 36 climate proof wastewater re-use and waste management facilities • 24 Community training meetings for operators held • 48 behaviour change awareness meetings in communities, schools and health centres	• Project implementation reports • Field visits • M&E reports • Interviews with Catchment Management governance structures and • Local leaders	• MWE, • WRI, and Focal persons in MWE and WAU	

Output 2.2.2 Domestic water supply infrastructure among vulnerable communities improved	• Assessment report of climate proof water supply infrastructure • Number of domestic water tanks constructed • Number of women groups undertaking sanitation value chains • Number of infrastructural facilities reinforced water abstraction, storage and transmission	Domestic water supply infrastructure is weak, inadequate, vulnerable, and easily washed away by floods and landslides. These water supply infrastructures are not climate proof.	• Assessment report of climate proof water supply infrastructure • 4 Domestic water tanks constructed • 3 women groups undertaking sanitation value chains • Reinforce 9 water abstraction, 9 storages and 9 transmission infrastructure/ facilities	• Assessment report of climate proof water supply infrastructure • 9 Domestic water tanks constructed • 6 women groups undertaking sanitation value chains • Reinforce 9 water abstraction, 9 storages and 9 transmission infrastructure/ facilities	• Project implementation reports • Field visits • M&E reports • Interviews with Catchment Management governance structures and • Local leaders	• MWE, • WRI, and Focal persons in MWE and WAU	
Component 3: Enhancing knowledge management, awareness and information sharing in FEWS and climate resilient WASH approaches and technologies							
Result	**ıdicators**	**Baseline**	**ilestones (After 2 years)**	**nd of Project Targets**	**eans of Verification**	**Responsible Parties**	**Risks and Assumptions**
Outcome 3.1: Knowledge, awareness and information dissemination on FEWS and WASH increased	• Proportion (%) of households of targeted communities practicing climate resilient WASH measures	A small percentage of community members and households have access to adequate information and inadequate knowledge in FEWS and climate resilient WASH issues, approaches and technologies	At least 40% of the targeted actors including community members, gender and disability rights groups and policy makers are knowledgeable, access information, participate, share and disseminate information on FEWS and climate resilient WASH	At least 80% of the targeted actors including community members, gender and disability rights groups and policy makers are knowledgeable, access information, participate, share and disseminate information on FEWS and climate resilient WASH	• Project implementation reports • Field visits • M&E reports • Interviews with Catchment Management governance structures and • Local leaders	• MWE, • WRI, and Focal persons in MWE and WAU	Stakeholders at different levels are willing to engage with the project and each other

Output 3.1.1 Good practices and lessons learned on FEWS and WASH documented and disseminated	• Number of knowledge products e.g., documents on lessons and best practices from project interventions • Number of case studies and lessons learnt documented and shared among project beneficiaries • Number of study tours organised for cross learning • Number of influencing and lesson sharing presentations done to recognised national high level platform • Number of influencing and lesson sharing presentations to recognised Regional and Global platforms.	Information on successful cases studies documentations and experiential learning on climate resilient WASH are still limited and not readily accessible. Communities	• 2 brochures, 1 publication (documents) on lessons and best practices from project interventions • At least 2 case studies /lessons on FEWS and climate resilient WASH technologies documented, packaged and shared with key stakeholders • At least 2 study tours for 3 community groups per sub-catchment organised • At least 2 national high level presentations done • At least 1 Regional and Global platform presentation done	• 4 brochures, 2 publications (documents) on lessons and best practices from project interventions • At least 4 case studies /lessons learn documented, packaged and shared with key stakeholders on FEWS and climate resilient WASH • At least 3 study tours for 3 community groups per sub-catchment organised • At least 2 national high level presentations done • At least 1 Regional and Global platform presentation done	• Project implementation reports • Field visits • M&E reports • Interviews with Catchment Management governance structures and • Local leaders • Community groups	• MWE, • WRI, and Focal persons in MWE and WAU	Target projects are willing to share information

Output 3.1.2 FEWS and WASH information sharing platforms strengthened	• Number of meeting Platforms or fora organized jointly for gender and women rights disability groups • Number of media features (e.g., electronic and print media shows • Number of Policy engagement meetings conducted • Number of National and Sectoral plans for integrating water security and climate resilience issues into National and Sectoral Development Plans •	• Limited opportunities including platforms and forums for information sharing on resilient WASH measures • No policy engagement meetings have been conducted for the benefit of communities vulnerable to floods and landslides • The water security and climate resilience issues are not integrated in existing National and sectoral development plans •	• Minutes of 2 meetings held for information generation and sharing on WASH • Minutes of 24 meetings on policy engagement at national level • At least 2 information sharing events organized per sub-catchment • At least 90% of Development plans at district, Sub County and National levels integrate water security and climate resilience issues •	• Minutes of 2 meetings held for information generation and sharing on WASH • Minutes of 24 meetings on policy engagement at national level • At least 4information sharing events organized per sub-catchment	• Project implementation reports • Field visits • M&E reports • Interviews with Catchment Management governance structures and Local leaders	• MWE, • WRI, and Focal persons in MWE and WAU	

F. Alignment with the Results Framework Adaptation Fund

Project Objective(s)[23]	Project Objective Indicator(s)	Fund Outcome	Fund Outcome Indicator	Grant Amount (USD)
To increase the resilience of communities to climate change risks of floods and landslides through sustainable community access to water, sanitation and hygiene services and integrated catchment management measures in Mpologoma catchment.	portion (%) of beneficiaries/households and users of FEW information and WASH technologies	**Outcome 1:** Reduced exposure to climate-related hazards and threats	**1.** Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis	**9,504,600**
	Proportion (%) of beneficiary households engaged in adaptation measures against floods and landslides	**Outcome 3:** Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	**3.1**. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses	
			3.2. Percentage of targeted population applying appropriate adaptation responses	
		Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	**4.1**. Responsiveness of development sector services to evolving needs from changing and variable climate	
			4.2. Physical infrastructure improved to withstand climate change and variability-induced stress	

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

	Proportion (%) of community members with increased incomes due from controlled floods and landslides	**Outcome 6:** Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	**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	
Project Outcome(s)	**Project Outcome Indicator(s)**	**Fund Output**	**Fund Output Indicator**	**Grant Amount (USD)**
Outcome 1.1 increased use of effective and efficient Flood Early Warning Systems (FEWS) and climate resilient WASH technologies by stakeholders	Proportion of community households using FEWS and WASH technologies	**Outcome 3:** Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	**3.1**. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses **3.2**. Percentage of targeted population applying appropriate adaptation responses	**486,000**
Outcome 1.2 Improved Capacity of key stakeholders at national, district and local levels for FEWS, WASH planning, designing, implementation and monitoring	Proportion (%) of staff in targeted institutions at national, regional, district and local level with enhanced capacity in WASH planning, designing, implementation and monitoring Proportion (%) of households/community members with knowledge and skills in climate resilient WASH planning, designing, implementation and monitoring and technologies	**Output 2**: Strengthened capacity of national and sub-national centres and networks to respond rapidly to extreme weather events	**2.1.1**. No. of staff trained to respond to, and mitigate impacts of, climate-related events (by gender) **2.1.2** No. of targeted institutions with increased capacity to minimize exposure to climate variability risks (by type, sector and scale)	**923,000**
Outcome 2.1: Increased uptake and use of concrete adaptive climate-smart WASH technologies and catchment protection measures	Proportion (%) of community members/households undertaking climate-smart WASH technologies Proportion (%) of quality water points/sources due to erosion, floods, landslides occurrences	**Output 4:** Vulnerable physical, natural, and social assets strengthened in response to climate change impacts, including variability	**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)	**2,833,000**
Outcome 2.2 Uptake and usage of concrete adaptation actions for water supply and sanitation measures increased	Proportion (%) of community households undertaking concrete adaptation actions and WASH measures Proportion of (%) of community households with improved alternative livelihoods	**Output 6:** Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	**6.1.1.**No. and type of adaptation assets (physical as well as knowledge) created in support of individual or community-livelihood strategies **6.1.2**. Type of income sources for households generated under climate change scenario	**3,147,000**
Outcome 3.1: Knowledge, awareness and information on FEWS and WASH increased	Proportion (%) of households of targeted communities practicing climate resilient WASH measures	**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 **3.1.2** No. of news outlets in the local press and media that have covered the topic	**311,000**

G. Detailed budget

Component/Outcome/Output/Activity	Unit cost	No. of Units	Total Budget ('000 USD)	Budget notes
COMPONENT 1: Strengthening institutional capacity for planning, designing, implementing and monitoring integrated Flood Early Warning systems (FEWS) and climate-smart WASH technologies			**1,409,000**	
Outcome 1.1: Increased use of effective and efficient Flood Early Warning Systems and climate resilient WASH technologies by stakeholders			**486,000**	
Output 1.1.1: Efficient and effective FEWS and climate resilient WASH technologies developed/in place			**486,000**	
Activity 1.1.1.1 Assess the status of FEWS at different levels and incorporate indigenous/traditional FEWS options with modern FEW technologies	500	52	**26,000**	This is a study assessed @45 man days @ USD 500/day and associated costs of USD 3,500 for workshops and meetings for inception and validation of findings per sub-catchment

Activity 1.1.1.2 Assess application status of Climate resilient/climate proof WASH technologies at different levels	500	520	**26,000**	This is a study assessed @45 man days @ USD 500/day associated costs of USD 3,500 for workshops, meetings for inception and validation of the findings per sub-catchment.
Activity 1.1.1.3 Support integration of FEWS and Climate-smart WASH technologies in planning, design, implementation and monitoring in national, regional, district and community level planning and development frameworks	400	120	**48,000**	Consultancy @ 60 man days spread over 6 months @USD 400 and associated costs of USD 6,000 at national, regional, district and community level meetings/workshops (i.e. USD 24,000)
Activity 1.1.1.4 Equip/upgrade selected weather stations in the catchment for timely and effective weather information	25,000	12	**300,000**	Set up 3 modern weather station @USD 40,000 and upgrade 3 other weather stations @USD 20,000 per sub-catchments upstream, midstream and downstream sub-catchments
Activity 1.1.1.4 Develop guidelines for integrated floods and WASH planning, design, implementation and monitoring	400	140	**56,000**	Consultancy @ 60 man days spread over 6 months @USD 300 and associated costs of USD 6,000 at national, regional, district and community level meetings/workshops (i.e. USD 24,000)
Activity 1.1.1.5 Popularise and disseminate the developed guidelines	5,000	6	**30,000**	This includes costs for translating and printing 150 copies of Floods and WASH Guidelines @USD 40 and conducting 2 dissemination workshops at community and district levels at USD 3,000 and USD 5,000 respectively for the 3 sub-catchments i.e. Upstream, midstream and downstream.
Outcome 1.2 Improved Capacity of key stakeholders at national, district and local levels for FEWS, WASH planning, designing, implementation and monitoring			**923,000**	
Output 1.2.1: Capacity to plan, design, implement and monitor Climate adaptive WASH among stakeholders at different levels improved			**756,000**	
Activity 1.2.1.1 Undertake a WASH capacity needs assessment for national, district and local levels	400	150	**60,000**	This activity involves a study assessed @60 man days @ USD 400/day and associated costs of USD 12,000 for meetings and workshops for inception and validation of study findings per sub-catchment.
Activity 1.2.1.2 Develop a capacity-building plan and materials for different levels at national. Regional, district and community levels	400	120	**48,000**	This activity is a consultancy @45 man days @USD 400 and associated costs of USD 10,000 per sub-catchment
Activity 1.2.1.3 Train stakeholders at different levels in climate resilient WASH technologies	3,000	72	**216,000**	This activity involves quarterly training @ USD 3,000 at three levels per sub-catchments within two years.
Activity 1.2.1.4 Facilitate learning exchange visits for WASH	20,000	18	**360,000**	This activity involves conducting learning and exchange visits @USD 20,000 per sub-catchment at district and community levels per year for three years.
Activity 1.2.1.5 Conduct a Capacity follow up monitoring and supervision	3,000	24	**72,000**	This activity involves two community workshops and two district level workshops @USD 3,000 each per sub-catchment per year for two years as a follow up and supervision for training.
Output 1.2.2: Institutional linkages/partnerships for WASH information utilisation and review established/improved			**167,000**	
Activity 1.2.2.1 Establish and incorporate climate resilient WASH into governance committees in Catchment and Sub-catchment organisations	4,600	5	**23,000**	This includes costs for five (5) workshops one at the catchment level and four (4) others at sub-catchment level @USD 4,600 for one year.
Activity 1.2.2.2 Support establishment of WASH platforms at different levels for community learning	2,000	12	**24,000**	This is the cost of quarterly meetings @USD 2,000 organised by stakeholders involved in WASH for 3 years
Activity 1.2.2.3 Develop/review WASH information sharing forums for Catchment Management Organisations	2,000	12	**24,000**	This involves the cost of quarterly meetings for CMOs @USD 2,000 for 3 years
Activity 1.2.2.4 Develop MOUs and implementation action plan for climate resilient WASH information Forums at regional, district and Sub-County levels (CM stakeholders e.g. CBOs, LG Authorities, MWE structures)	20,000	3	**60,000**	Consultative meetings and workshops at regional @USD 5,000, national @USD 10,000 and local levels @ USD 5,000 per year per country for three years
Activity 1.2.2.5 Support inter-ministerial and inter-sectoral climate resilient WASH information sharing (Water, Health, Education)	6,000	6	**36,000**	This activity involves national level semi-annual meetings between key ministries and sectors engaged in WASH to share information for disseminating to various stakeholders @USD 6,000 biannually for 3 years.
COMPONENT 2: Facilitating communities to undertake adaptation actions for reinforcing resilience of populations and ecosystems against floods and landslides			**5,980,000**	
Outcome 2.1: Increased uptake and use of concrete adaptive climate-smart WASH technologies and catchment protection measures			**2,833,000**	

Output 2.1.1: Efficient and sustainable WASH technologies demonstrated			**384,000**	
Activity 2.1.1.1 Conduct a KAP survey on WASH in the catchment	400	120	**48,000**	This activity involves a study @ 30 man days @USD 400 and associated costs of USD 12,000 for inception and validation workshops per catchment
Activity 2.1.1.2 Establish demonstration sites for climate resilient WASH models	45,000	3	**135,000**	This activity entails the costs for WASH demonstration sites in each sub-catchment @USD45,000 per sub-catchment.
Activity 2.1.1.3 Conduct quarterly training sessions on climate resilient WASH	3,000	36	**108,000**	This activity involves holding quarterly training sessions @USD 3,000 at per sub-catchment community level for 3 years.
Activity 2.1.1.4 Support Communities and other stakeholders/project beneficiaries to access WASH information	15,500	6	**93,000**	This activity involves the cost of airtime for Ministry and local government staff as well as CMC members and other community leaders to engage communities in quarterly radio talk shows @ USD 7,000 for 3 years and biannual media supplements @ USD 2,500 per year for 3 years.
Output 2.1.2: Adaptive catchment protection measures promoted			**1,747,000**	
Activity 2.1.2.1 Assess status of water points and protection measures in the catchment	3,000	9	**27,000**	This is a study assessed @45 man days @ USD 400/day and associated costs of USD 3,000 for workshops and meetings for inception and validation of findings per sub-catchment
Activity 2.1.2.2 Train communities in source protection measures against floods and landslides	3,000	48	**144,000**	This activity involves quarterly training @ USD 3,000 at two levels for 3 sub-catchments within a year for two years.
Activity 2.1.2.3 Support establishment of source protection and management measures	400	107	**43,000**	This activity involves studies @USD 400 for 40 days and 3-community workshops @USD 3,000 per sub-catchments.
Activity 2.1.2.4 Facilitate indigenous community source monitoring	2,000	12	**24,000**	This is the cost of quarterly field visits and meetings @USD 2,000 organised by CMCs and Community leaders for 3 years.
Activity 2.1.2.5 Provide inputs to communities for source protection	12,000	24	**288,000**	This activity involves the cost of inputs such as live markers, stones and embankments for protecting at least 6-water sources structure units @USD 12,000 per structure per sub-catchment for 2 years.
Activity 2.1.2.6 Assess, demarcate and map degraded ecosystems upstream, midstream and downstream areas (including hilly/mountainous forests, wetlands, riverbanks, swamp/riverine forests etc.)	8,500	60	**510,000**	This activity includes costs for inputs and technical labour for assessing, demarcating and mapping 20 units (i.e. 5 forests, 5 wetlands, 5 riverbanks and 5 swamp forests) @USD 8,500 per unit per sub-catchment.
Activity 2.1.2.7 Raise awareness on ecosystem restoration/rehabilitation among communities upstream, midstream and downstream areas (including hilly/mountainous forests, wetlands, riverbanks, swamp/riverine forests etc.)	3,000	27	**81,000**	This activity includes 3 biannual community workshops conducted @USD 3,000 each per year per sub-catchment for 3 years.
Activity 2.1.2.8 Support rehabilitation of degraded ecosystems upstream, midstream and downstream areas (including hilly/mountainous forests, wetlands, riverbanks, swamp/riverine forests etc.)	5,250	60	**315,000**	This activity includes the costs for inputs to rehabilitate 20 units of degraded ecosystems (i.e. 5 forests, 5 wetlands, 5 riverbanks and 5swamp forests) @USD 5,250 per unit per sub-catchment.
Activity 2.1.2.9 Support and promote a revolving fund scheme for alternative income generating activities	8,750	36	**315,000**	This activity includes the costs for 36 community groups accessing the revolving fund @USD 8,750 per group in the 6 sub-catchments.
Output 2.1.3 Adaptive flood control and landslide management measures (including soil conservation, erosion control etc.) promoted			**702,000**	
Activity 2.1.3.1 Train communities in landscape flood control and landslide management	12,000	6	**72,000**	This activity includes 2 quarterly rainy season community training @USD 6,000 per 3 sub-catchments per year for 2 years.
Activity 2.1.3.2 Facilitate construction of landscape flood control structures	10,000	48	**480,000**	This activity includes the costs for the inputs for constructing 12 units of water harvesting and 12 units of flood control structures @USD 10,000 per unit for each of the 2 sub-catchments.
Activity 2.1.3.3 Construct landslides resilient WASH technologies	15,000	10	**150,000**	This activity involves the cost of construction materials and equipment for at least 5 technologies @USD 15,000 per technology in two sub-catchments mid and upstream).
Outcome 2.2 Uptake and usage of concrete adaptation actions for water supply and sanitation measures increased			**3,147,000**	
Output 2.2.1 Sanitation services in small towns and rural growth centres improved			**2,088,000**	
Activity 2.2.1.1 Support women groups to construct and operate public sanitation facilities in small towns and rural growth centres	12,000	54	**648,000**	This involves inputs for constructing 6 units for women groups @USD12,000 per unit for 3 towns and rural growth centres per sub-catchment.

Activity 2.2.1.2 Support construction of climate proof fecal sludge management facilities	648,000	1	**648,000**	This involves inputs for constructing a climate proof fecal sludge for in 1 small towns/rural growth centres @USD 648,000 per town per sub-catchment.
Activity 2.2.1.3. Support construction of climate proof wastewater re-use and waste management facilities	12,000	36	**432,000**	This involves inputs for constructing 4-climate proof wastewater re-use and management units in 3 towns and rural growth centres @USD 12,000 per small town /rural growth centre per sub-catchment.
Activity 2.2.1.4 Train community operators on life cycle costing and maintenance of WASH facilities in towns and rural growth centres	3,000	24	**72,000**	This activity includes quarterly training for community operators at 2 levels (district and community) @USD 3,000 per sub-catchment for one year.
Activity 2.2.1.5 Hold hygiene behaviour change awareness meetings in communities	3,000	96	**288,000**	This activity includes quarterly meetings for 2 community groups, 2 schools and 2-health centres @USD 3,000 per sub-catchment for one year.
Output 2.2.2 Domestic Water supply infrastructure among vulnerable communities improved			**1,059,000**	
Activity 2.2.2.1 Undertake assessment of low cost climate proof water supply infrastructure	400	150	**60,000**	This activity involves a study assessed @60-man days @ USD 400/day and associated costs of USD 12,000 for meetings and workshops for inception and validation of study findings per sub-catchment.
Activity 2.2.2.2 Support women groups to undertake construction and promotion of household rain water harvesting technologies	10,000	9	**90,000**	This involves a small grant for 3 women groups per sub-catchment to undertake construction of domestic water harvesting tanks for vulnerable households @USD 10,000 per group.
Activity 2.2.2.3 Reinforce water abstraction, storage and transmission infrastructure/facilities	8,500	18	**153,000**	This involves inputs for reinforcing 6 units of water infrastructural facilities for abstraction, storage and transmission @USD 8,500 per sub-catchment.
Activity 2.2.2.4 Undertake awareness raising meetings on piped water supply, wasteful water supply and other water losses	3,000	12	**36,000**	This activity includes quarterly community for communities, CMCs and local leaders workshops on water supply, as well as associated wastage and losses @USD 3,000 per sub-catchment for one year.
Activity 2.2.2.3 Construct domestic rain water harvesting facilities for communities	10,000	72	**720,000**	This activity involves the costs for inputs of constructing 24 units of rainwater harvesting @USD 10,000 per unit per sub-catchment.
COMPONENT 3: Enhancing knowledge management, awareness and information sharing in FEWS, climate resilient WASH approaches and technologies			**311,000**	
Outcome 3.1: Knowledge, awareness and information on WASH increased			**311,000**	
Output 3.1.1 Good practices and lessons learned on WASH documented and disseminated			**95,000**	
Activity 3.1.1.2 Document good practices and lessons learned on FEWS, climate resilient WASH technologies and practices	300	50	**15,000**	Cost of developing at 30 person-days @USD 300, printing the materials estimated @USD 6,000 for two years.
Activity 3.1.2.1 Generate, package and develop information materials on FEWS, climate resilient WASH technologies and practices	20,000	4	**80,000**	Costs of using various communication platforms and channels estimated @USD 20,000 per year for four years
Output 3.1.2 WASH information sharing platforms strengthened			**216,000**	
Activity 3.1.2.2 Support gender and disability rights groups to share climate resilient WASH information at different levels	18,000	4	**72,000**	This activity involves the cost of airtime for gender and disability rights groups to share WASH information at National. District, regional and community levels radio talk shows @ USD 4,000 for 3 years, semi-annual national level workshops @USD 5,000, Regional and district biannually @ USD 4000 and quarterly @USD 3000 per year for 2 years.
Activity 3.1.2.3 Engage policy makers in dissemination of best practices on climate resilient WASH technologies	3,000	48	**144,000**	This activity includes quarterly meetings for communities, 2 schools and 2 health centres @USD 3,000 per sub-catchment for one year.
Monitoring and evaluation	20,000	15	**300,000**	Costs for quarterly, mid-term monitoring and end of project monitoring and audit @USD 20,000.
Project activities Total Budget (component 1, 2, 3, & M&E)			**8,000,000**	
Project Co-ordination and Management				
Executing Entity fees			**760,000**	To be used for Project inception launch activities, salaries and fees of experts in charge of the project for planning, daily management, M&E, and implementation, as well as equipment and consumables, etc.

Implementing Entity fees			744,600	To be used for e.g.: salaries and fees of experts in charge of the project for planning, daily management, M&E, and implementation, as well as equipment and consumables, etc.
Grand total			**9,504,600**	

H. Disbursement schedule with time-bound milestones

Year	Disbursement (USD)	Percentage (%)	Milestones
2021	1,900,920	20	Upon Agreement and Contract Signing and One year after Project start, and upon approval of Year 1 Report
2023	2,851,380	30	Two years after Project start, and upon approval of Year 2 Report
2024	2,851,380	30	Three years after project start upon approval of Year 3 Report
2025	1,900,920	20	Four Years at the end of the project upon Approval of the project completion report
Total	**9,504,600**		

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

A. Record of endorsement on behalf of the government[2] Provide the name an letter(s) should be attached as an annex to the project/programme proposal. Please attach the endorsement letter(s) with this template; add as many participating governments if a regional project/programme:

(***Mr. Keith Muhakanizi Permanent Secretary, Ministry of Finance, Planning and Economic Development***)	Date: ***26 April 2021***

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 (……list here…..) 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.

[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.

Name & Signature: *: **Mr. Alfred Okot Okidi*** Implementing Entity Coordinator: **Permanent Secretary, Ministry of Water and Environment**	
Date: *26 April 2021*	Tel. and email: **Dr. Callist Tindimugaya and Mr. James Kaweesi**
Project Contact Person: **:+256772521413; email: callist_tindimugaya@yahoo.co.uk/jkaweesi11@gmail.com**	

ANNEX I: Endorsement letter

Telephone : 256 41 4707 000
: 256 41 4232 095
Fax : 256 41 4230 163
: 256 41 4343 023
: 256 41 4341 286
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In any correspondence on
this subject please quote No. ALD 79/251/02

THE REPUBLIC OF UGANDA

Ministry of Finance, Planning &
Economic Development
Plot 2-12, Apollo Kaggwa Road
P.O. Box 8147
Kampala
Uganda

23rd August 2021

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

ENDORSEMENT FOR A PROJECT CONCEPT: ENHANCING ADAPTATION OF COMMUNITIES TO CLIMATE RESILIENT WASH TECHNOLOGIES AND CATCHMENT MANAGEMENT MEASURES IN MPOLOGOMA CATCHMENT, UGANDA

I have the honor to refer to the above mentioned subject.

The project worth Four Million Nine Hundred and Eighty Three Thousand Dollars (USD 4,983,000) is aimed at increasing the resilience of communities to climate change risks of floods and landslides through sustainable community access to water, sanitation and hygiene services and integrated catchment management measures in Mpologoma Catchment.

In my capacity as the appointing Authority of the Designated Authority for the Adaptation Fund in Uganda, I confirm that the above project proposal is in accordance with the national climate Adaptation priorities of the Government of Uganda.

Accordingly, I am pleased to endorse the concept proposal for grant support from the Adaptation Fund. If approved, the project will be implemented by the Ministry of Water and Environment and executed by Water Aid Uganda.

Matia Kasaija (M.P)
MINISTER OF FINANCE, PLANNING AND ECONOMIC DEVELOPMENT

Attachment: The project document

Copy to: The Permanent Secretary/Secretary to the Treasury
The Permanent Secretary, Ministry of Water and Environment.
The Regional Coordinator, Global Water Partnership, Eastern Africa

Annex II: Preliminary /Initial Consultations report

CARFEWW Project

ENHANCING COMMUNITY ADAPTATION THROUGH CLIMATE RESILIENT FLOOD EARLY WARNING, CATCHMENT MANAGEMENT AND WASH TECHNOLOGIES IN MPOLOGOMA CATCHMENT, UGANDA

A REPORT ON INITIAL NATIONAL CONSULTATIONS TO DEVELOP THE PROJECT CONCEPT NOTE

Background and context

Mpologoma catchment that covers 7,862 Km^2 of land area and 1,127 Km^2 of water area of the catchments within Kyoga Water Management zone, in Uganda is experiencing more erratic and unpredictable rainfalls, both in amount, duration, and intensity in recent years. These variations are attributed to climate change manifested in form of droughts, floods and landslides. The human population in the catchment is estimated to be 4,093,340 people and growing at a 3.2% per annum is highly dependent on climate sensitive subsistence rain-fed agriculture and a multitude of natural resources for livelihoods thereby exerting increasing pressure on water and land resources and leading to natural resources degradation. Floods and landslides have not only caused loss of lives, peoples' assets and properties but also destroyed infrastructure such as roads, bridges and water supply, delivery and storage infrastructure including busting and burying water pipes and waste facilities. Consequently, communities continue to face increased water pollution and contamination, unsafe water sources, increasing outbreak of waterborne diseases such as diarrhoea, typhoid and cholera as well as scarcity of food, water and other ecosystems goods and services. Therefore, climate change is not only exacerbating health, food security, water scarcity, water insecurity and water quality problems in drought prone areas but is also equally impairing similar attributes and water quality in areas susceptible to floods and landslides hence negatively impacting on water and sanitation facilities as well as degrading catchment resources. With such limitations, communities are most vulnerable to water and sanitation related diseases due to floods and landslides aggravated by limited Flood Early Warning Systems (FEWS) and limited capacity to timely respond to such disasters. The sensor based flood monitoring system installed in Butaleja has remained largely ineffective with limited coverage of up to a radius of 5km and capacity of the communities to adapt to climate change has remained low due to their limited coping mechanisms to climate change. Therefore, deliberate efforts aimed at strengthening the flood warning systems, adaptive capacity of communities and ecosystems resilience to the impacts of floods and landslides are needed.

Fortunately, WaterAid Uganda (WAU) is collaborating with Directorate of Water Resources Management, the Water Resources Institute (WRI); Kyoga Water Management Zone (KWMZ) and the Eastern Umbrella for Water and Sanitation (EUWS) of the Ministry of Water and Environment, and the Uganda Women Network (UWONET) to develop a project for submission to secure funding from the Adaptation Fund. The proposed project is called "***CARFEWW Project"*** and aims at *enhancing resilience of communities against flooding and landslides through; development and implementation of climate resilient FEWS, catchment management measures and WASH technologies in the catchment*. The Consortium has developed a draft project concept that requires additional information in order to be finalised prior to submission to the Adaptation Fund.

Aware of the current challenges of COVID-19, it is not possible to hold a stakeholders work shop to collect information necessary to input and finalise the draft concept. Therefore, targeted individual consultations were agreed upon as ideal for the current COVID-19 lock down.

Key stakeholders were identified for participating in project formulation by providing additional information necessary for enriching and finalisation of the ***CARFEWW project***.

Approach

The WAU initially discussed the draft summary of the project contextual background, the objectives, and components, log frame, budget and proposed institutional arrangements with the DWRM staff at the MWE headquarters in Kampala. Both parties made inputs and agreed to the scope of the project including the technical aspects as well as the geographical location, partners and targeted beneficiaries. At this stage there was anticipation that WAU and MWE would organise a face-to-face stakeholders consultative meeting. With the Lockdown measures against COVID-19 Pandemic announced by Government of the Republic of Uganda, it became very difficult. The parties eventually used telephone and email-based consultations where the draft concept summary including contextual background, the objectives, and components, log frame, budget and proposed institutional arrangements were posted to the key stakeholders to seek for inputs. Women and Gender was considered in the selection of stakeholders to be consulted. A final skype meeting was organized between WAU and DWRM to incorporate the inputs from stakeholders, secure the endorsement letter and finalise the concept note for submission to the Adaptation Fund. The key

stakeholders consulted were:

- Stakeholders were drawn from different organisations. These were:
- Representatives of the MWE both based at the regional and field as well as those at the Ministry headquarters
- Representatives from WaterAID Uganda and their international Partners
- Representatives of Non-Governmental Organisations (NGOs)
- Representatives of women organisations
- Private sector
- Government Parastatals especially engaged in water, sanitation and health in the catchment
- Catchment Management Committee (CMC) members
- District leaders from the districts

Objectives of Consultations

The objectives of the targeted consultations were to:

- Provide information to key stakeholders about the Adaptation Fund and the current Concept note development processes and requirements
- Acquire ideas/ inputs by from key stakeholders and triangulate the information collected from stakeholders and literature and ground trothing from the field visit
- Suggest new activities that meet the specificities of the intervention areas and the needs of the beneficiaries;
- Validate the project logical framework based on components, outcomes and outputs in the pre-concept note
- Validate the distribution/allocation of the project budget;
- Agree on project implementation arrangements

Main findings and recommendations for the concept

All stakeholders consider the project as important and very relevant in addressing the challenges of floods and landslides in the catchment. The logical framework was recommended. It has clear components, outcome, outputs, and activities. The proposed budget of USD 9,516,951= was considered vital for the activities proposed in the log frame. A description of when the activities should be should be provided. The following interventions should be incorporated in the concept note.

- Catchment restoration interventions such as construction of infiltration trenches to enhance water infiltration and also tame soil erosion, construction of gabions to plug gullies, restoration and stabilization of river banks, and all should actively engage and involve the affected communities.
- Project should target women (on gender issues) especially, the female headed households, the elderly, disabled and should pay close attention to working young mothers.
- Ensure that a research and studies component focusing on climate smart WASH, water use efficiency and catchment protection technologies is incorporated.
- Introduce rural waste disposal technologies
- Include applied short course trainings to build institutional capacity for planning, designing, implementation and monitoring of integrated Flood Early Warning systems (FEWS) and climate-smart WASH, water use efficiency and catchment protection technologies
- Focus on stakeholder sensitization, awareness raising and training on wise use of their land and the general environment;
- Focus on increasing supply of clean and safe water
- Add a sanitation component with an emphasis on protecting water resources and a sustainable forest management component with an emphasis on reducing dependence on charcoal and burning
- Soil and water conservation structures (Biophysical structures) on community or individual land like terraces, contours, infiltration trenches, percolation pits, etc. in hilly lying areas to check the speed of surface runoff and thereby mitigating flooding in downstream areas should be implemented;
- Tree planting with native species recommended by the local stakeholders;
- River bank restoration
- Wetland restoration
- Alternative income generating activities for communities willing to participate in the restoration of the sensitive areas like river banks and wetlands;

Challenges likely to slow down the project implementation

- Limited capacity at local governance levels to implement the project;
- Land ownership issues;

- Community perception on restoration of the river banks and wetlands; Communities tend to think that river bank and wetland restoration are efforts of taking away people's land.

Environmental, economic and social project-related risks

- Environmental; Unpredictable climatic conditions affecting the schedule of implementing some activities
- Economic; the economic livelihoods communities have always derived from the use of river banks, wetlands e.g. rice cultivation in wetlands.
- Social; Land ownership issues;

Institutional arrangements

- Stakeholders appreciated that WaterAid Uganda (WAU) working in Partnership with the Directorate of Water Resources Management (DRWM) will execute the project.
- The Directorate of Water Resources Management (DWRM) will provide strategic overall technical and administrative guidance to Kyoga Water Management Zone (KWMZ), Eastern Umbrella for Water and Sanitation (EUWS), Water and Sanitation Development Facility (WSDF-East).
- KWMZ will be responsible for implementing concrete adaptation actions on catchment protection and management at the regional and local levels. Eastern Umbrella for Water and Sanitation (EUWS), Water and Sanitation Development Facility (WSDF-East) will be responsible for implementing the water sanitation and hygiene interventions respectively at the regional and local levels.
- The Water Resources Institute (WRI) be responsible for capacity building interventions at national and regional levels.
- Uganda Women's Network (UWONET) will be responsible for providing strategic and technical guidance on gender and capacity building to the project partners including WRI, KWMZ and EUWS as well as WSDF-East as they implement respective interventions in the catchment.
- The other stakeholders that will be involved in project implementation at district level will be the respective District Local Governments (DLGs) of the districts targeted whether upstream, midstream or downstream in Mpologoma catchment.
- The Catchment Management Committees (CMCs) and selected women led Community Based Organisations (CBOs) will liaise with the local government administrative structures at sub counties to reach out to the targeted beneficiary communities in the catchment.

List of Stakeholders consulted

Name	Organisation	Position	Telephone Contact	Email
Mr. Maximo Twinomuhangi	Ministry of Water and Environment (MWE)-Kyoga Water Management Zone (KWMZ)	Team Leader	+256772659001	mtwinomuhangi@gmail.com
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Rwaka Mucunguzi	Water and Sanitation			
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