ADAPTATION FUND

PROJECT/PROGRAMME PROPOSAL TO THE ADAPTATION FUND

PART I: PROJECT/PROGRAMME INFORMATION

Project/Programme Category: ***Regular Project***
Country/ies: ***United Republic of Tanzania***
Title of Project/Programme: ***Bunda Climate Resilience and Adaptation Project***
Type of Implementing Entity: ***National Implementing Entity (NIE)***
Implementing Entity: ***National Environment Management Council (NEMC)***
Executing Entity/ies: ***Bunda District Council***
Amount of Financing Requested: ***1,400,000 (In U.S Dollars Equivalent)***

1.0 Project Background and Context

1.1 Brief background on what the project aims to solve

Bunda district represents the section of poor rural communities of Mara region in the Lake Victoria Zone of Tanzania, who are already vulnerable to impacts of climate change[1]. Key climate elements like temperature, rainfall and wind speed have been shifting their historical trends and magnitudes over time. As a result, extreme climate and weather driven events such as droughts, prolonged dry periods, erratic rainfall and strong winds are more common across the district nowadays[2]. The observed climate vagaries coupled with high poverty level have already caused their toll to people, their socio-economic, livelihood and environmental systems. Crop failures, water scarcity and livestock deaths due to drought are already common events in the area. Rainfall seasons and number of rainy days has greatly changed and declined, affecting economic, social, environment and peoples' livelihoods. Communities are experiencing failures of their traditional livelihood systems with no replacement or alternatives[3]. Dependence on fishing is also under threat due to catch decrease. As a result, the Poverty and Human Development Report released in 2005 by the United Republic of Tanzania ranked the district as the poorest with the highest rates of income poverty. More than half (68%) of the population are living below the basic needs' poverty line. Projected climate change scenarios by the Tanzania Meteorological Agency (2014), show that, the district will experience more temperature increase in future while drought and dry spell periods will intensify. Rainfall pattern in the area is projected to be more unreliable and number of rainy days will be further reduced, while flushing and catastrophic floods will be more pronounced[4]. Many future climate-change impacts are predicted to accelerate multiple challenges across the district, affecting nearly all of the population. These impacts are expected to include profound changes in water availability, temperature stresses to human, livestock and crops, changes in farming practices, incomes and food security, ecological disruption, and human health related impacts such as changes in disease vectors and rangelands, spatial expansion of malaria and water borne diseases. Hence, it is imperative that robust, technically-sound and multi- disciplinary, integrated concepts need to be developed and sustainably implemented urgently in Bunda district, especially focusing on water, agricultural and public health sectors.

[1] The United Republic of Tanzania (URT), "Tanzania demographic and health survey (2010)," National Bureau of Statistics, Dar Es Salaam, 2011.

[2] TMA, (2014).Climate change projection for Tanzania: A report Submitted to the Government of Tanzania. Dar es Salaam 33p.

[3] UNDP(2014).Assessment study to identify Institutional, Legal and Financial Bottlenecks On Poverty – Environment (P-E) Implementation at different levels of District, Ward and Village in Bunda District

[4] Bamwenda G.R., Mashindano O., and Hangi M. (2013). Promoting Agriculture- Climate Change-Trade Linkages for Development in the East African Community, PACT International.

Like many other rural setting districts in Tanzania and in the East African region, agriculture (crop cultivation, fishery including aquaculture and livestock) and water sectors in Bunda are important driver for economic growth, poverty alleviation, food security and rural communities' development. The sectors employ more than 80% percent of human population, contribute to approximately 95 percent of district food requirements, and accounts for about more than 80 percent of household's income earnings[3]. However, high dependence on rain fed subsistence agriculture, degradation of land and forest resources due to poor farming practices, unsustainable charcoal production and fuel wood harvesting, declining fish stock, illegal and primitive fishing practices and livestock grazing aggravate the impacts of climate change on peoples' livelihood systems, amplifying community's vulnerability and limiting their adaptive capacity[5]. Reversing this situation, improving environmental and life quality of people and achieving sustainable land management is essential to address food insecurity, rural poverty and ultimately enhancing resilience of communities and their adaptive capacity to climate change effects. While some proposals for such interventions already exist in the district plans, their implementation lacks behind.

Therefore, this project proposes to develop and implement concrete adaptation actions at grass root levels to increase community livelihood resilience to climate change effects and cover the following sectors; water resources and supply, agriculture, fisheries and aquaculture, livestock, forestry and ecosystems and gender in relation to climate change. The project will apply transformative integrated environmental management and aquaculture innovations, resilient rural water supply systems and Ever-Green-Agricultural (EVA) practices to reduce vulnerabilities and the impact of climate change on local communities in the district. This approach offers practical and effective combination of Community-Based-Adaption and Ecosystem-Based-Adaptation techniques to support transformation of livelihood system, combat poverty, enhance greater climate resilience of rural communities and gender equality while reducing emissions through long-term storage of carbon in landscapes. The project will implement concrete and practical cost effective and multi-stakeholders adaptation solutions to improve livelihoods of the poor and vulnerable communities in Bunda districts through the following five out comes:

i) Enhanced climate resilient water management and supply system in vulnerable agro-Pastoral communities of Bunda District;

ii) Improved agricultural productivity, livelihood and agro-ecosystem resilience through Climate Smart EVA practices;

iii) Traditional fishing practices of small scale fishers transformed and fishers' income improved through climate sensitive aquaculture innovations;

iv) Improved ecological and environmental services and functions to sustain climate sensitive rural livelihoods in Bunda District; and ; and

v) Strengthened institutional capacity to reduce risks associated with climate-induced socio-economic losses and livelihood failures in Bunda district.

[5] Bunda District Baseline report 2013: Integrating Poverty-Environment-Gender objectives in district development plans for accelerating economic and environmental sustainability

1.2 Socio-economic, development and environmental context

1.2.1 Location and Topography

Bunda district (BD) is one of the five districts of Mara Region. It borders to the North by the Musoma Rural District, to the South by Lake Victoria and Simiyu Region, to the East by the Serengeti District, and to the West by Lake Victoria. BD is located at an elevation of 1,225 meters above sea level. Its coordinates are 2°0'0" S and 33°49'60" E in Degrees Minutes Seconds. The district has an area of about 3080 sq. km, of which water occupies an area of 200 sq. km and land 2888 sq. km, which translate into 6.5% and 93.5% of the total area respectively. For the land resources, about 480 sq. km is within the Serengeti national park and the rest is agricultural land, grazing land, settlement and forest. The land area covered by Serengeti national park is equivalent to 17% of the total land area therefore, highly influenced by Serengeti ecological system. Administratively, Bunda District is divided into 4 divisions, 28 wards, 106 villages and 572 hamlets. Serengeti Division, however, has largest number of wards (10), village (29) and hamlets (176) as compared to other divisions.

1.2.2 Socio-economic and development context

Bunda is one of the most densely populated districts in Tanzania with over 370,000 inhabitants living in an area of 2888 square kilometers and with a growth rate of 1.8 %. Of the total population 172,820 (51.6%) are female and 162,241 (48.4%) are male. Serengeti Division has very high population compared to other divisions and Kenkombyo division has the lowest population. Compared to 2002 census, the population has increased by 29.4%. This is a large change and may impact various socio-economic development endeavors, including the optimal allocation and use of the meagre financial resources and may strongly affect the level of exploitation of the natural resources assets in the district.

Despite being one of the poorest districts in Tanzania with the highest rates of income poverty where more that 68% of the population are living below the basic needs poverty line, the district is on a positive growth trajectory. The number of people living below the national poverty line has reduced from 68% in 2005/2001 to 55% in 2012. The Government of Tanzania, through the district has taken a number of plans reforms and programme initiatives to ensure poverty reduction, sustainable economic growth and the broader achievement of SDGs from national to village and family levels. However, significant challenges remain particularly around the agricultural sector growth, food security and water scarcity as illustrated by the National Bureau of Statistics in 2012. Bunda District has predominantly agrarian economy with approximately more than 90% of the population residing in rural areas and agricultural sector (agriculture, fishery, livestock and forestry) providing around 80% of employment. Given its dominant role in the peoples' livelihood system and economy, and that more than 90% of households rely on subsistence agriculture, fishing and livestock keeping, the majority of communities especially women and other vulnerable groups are poor. Thus, supporting productive high value and market-oriented agriculture and fisheries is both of national and district priorities in line with the National Development Vision 2015, Five Year National Development Plan 2016/2021 and Bunda District Strategic Plan 2016-2021, whereas environmental management, conservation of natural resources and gender equality are cross-cutting addressed issues. Equally, the District recognizes climate risks and has committed to implementing improved climate resilient and adaptation including water management and aquaculture innovations and a sound biodiversity conservation plans to combat deforestation, reverse land degradation and combat desertification. Like at the national level, the District is also actively promoting gender equality and equity in its by-laws and education plans and programmes. It has a proactive plans and strategies that promote women participation in all areas of socio-economic life in the district and currently has a

higher number of women led projects and departments.

1.2.3 Environmental context

Bunda District has a considerable diversity of environmental resources, including fishery resources, good fertile soils, forests, minerals, fish, wildlife and an extensive network of mountains ecosystem and wetlands. Despite of income poverty challenges, the forests and environment sub-sector plays an important role in maintaining ecological balance, protect soils from erosion and conserve water and wildlife. For instance:- **Forests** (and the expansive woodlands, wooded grasslands and bush lands) are sources of domestic energy and also provide a range of goods and services, including timber for furniture, useful non-wood products mainly honey, bees wax and medicine and are habitats for a variety of flora and fauna. **Wetlands** produce important goods for rural communities such as raw material for handicrafts; Support for fisheries, grazing and agriculture and outdoor recreation bas well as ecosystem services, including buffering the negative effects of excess nutrient loads and sedimentation by absorbing nutrients and pollutants. **Unfortunately**, forests and woodlands are overexploited for production of charcoal, firewood and house construction materials. Likewise, forests in the area are threatened by illegal harvesting, fire wood, charcoal burning and destructive agricultural activities due to population growth and lack of alternative sources of income.

- The ongoing deforestation has reduced the coverage of forests and woodlands and the availability of associated goods including accelerating land degradation. Deforestation is undertaken largely to provide firewood, charcoal and timber. For example, over 97% of households use charcoal and firewood for cooking[6].
- Across the district, wetlands have been severely degraded as a result of *inter alia*: a) intensive cultivation of crops such as sweet potatoes and horticultural crops; b) excavation of sand and clay for brickworks; and c) grazing activities.
- Fish abundance in the has declined as a result of intensive fishing efforts and overfishing, changes in Lake Victoria's hydrology; iii) anthropogenic pollution; and iv) the invasion of exotic species[7]. Community and artisanal fishing efforts are showing decreased catch yields, despite intensified fishing efforts, increased number of fishers and improved fisheries' management[6].
- Natural and traditional water sources such as seasonal rivers and springs are no longer reliable. Drinking water quality and quantity has been impaired by both anthropogenic factors and environmental issues including climate change related factors.

1.3 Climate change context

1.3.1 Climate trends

Bunda district has complex climate with wide variations across the district, characterized by seasonality. The annual average temperature ranges from 21˚C to 30˚C. There are two rainy seasons, February –May and August to December with an annual average rainfall of 1100 mm. The highest monthly average rainfall, observed in April, is 110 mm. Recent analysis of rainfall trends shows that, rainy seasons are becoming shorter with higher intensity leading to decreases in agricultural production and events such as droughts and floods. From data analysis and trends and the UMFULA report, monthly and annual total rainfalls recorded between 2005 and 2015 were generally lower than the average recorded between 1961 and 1990. Moreover, rainfall in April, the month with the highest rainfall, has been dramatically reduced (27%, 48%, 88%, 70% and 52% of the average rainfall recorded for this month between 1961 and 1990 respectively in 2010, 2011, 2012, 2013 and 2014)[8]. The average number of rainfall days per year has also declined

[6] *Bunda District Council, 2014*

[7] *UNEP. 2006. Lake Victoria Basin environment outlook: environment and development. UNEP, Nairobi*

from 138 between 1971 and 1990 to 92 days between 1991-2015. Similarly, the monthly average rainfall totals decreased between1991 and 2015. This is also confirmed by the total annual mean rainfalls which have decreased from 980 mm to 720 mm. Despite the overall downward trend in annual rainfall, the recorded rainfall for September, November and December has been higher than normal. For example, the mean monthly total rainfall for September in 2012 was 108.7 mm compared with only 38.6 mm for the period 1961-1990. Most of this type of flushing rain usually falls in one day in the month and causes catastrophic and heavy floods. Nowadays rainfall in Bunda district has become increasingly erratic and unpredictable. Some areas are already undergoing gradual shift from bimodal to unimodal. Local experience indicates that, between 1981and 2016 most parts of the district are growing drier while extreme weather events especially droughts and floods are becoming more common.

Since late 1950s to date, Bunda district continued to experience rising temperatures, and warming trend is more pronounced in mean annual minimum temperature. Available climate information confirms that, mean annual temperature has increased by 1.0˚C since 1960, an average rate of 0.23˚C per decade. The rising rate is more rapid for periods/seasons covering January and February while display slowest rate for periods covering June, July, August and September[8, 9].

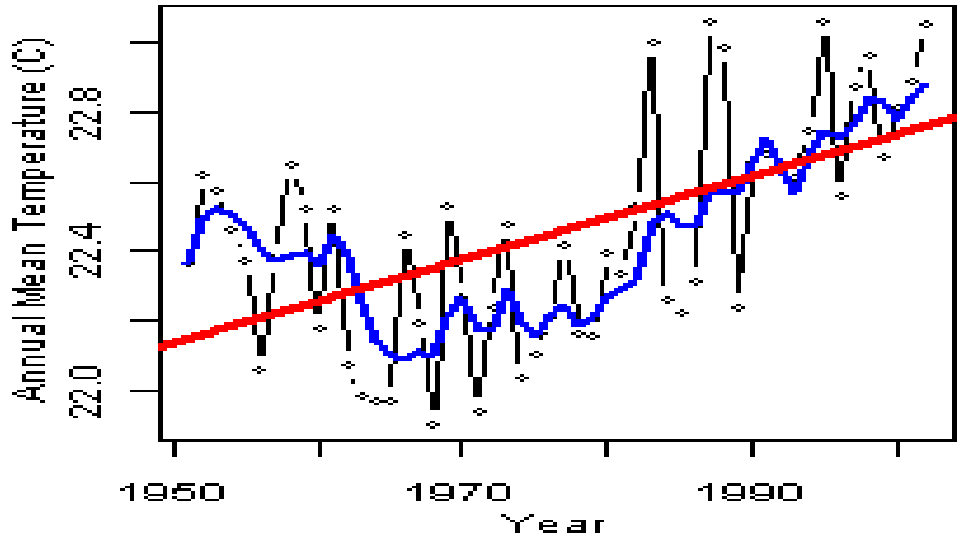


Figure 1: Historical average rate of change for temperature in Bunda district since 1951-2001(Source[10])

Daily temperature observations in Bunda district show only small increasing trends in the frequency hot days, but much larger increasing trends in the frequency of hot nights. The average number of 'hot' days in the United Republic of Tanzania has only increased significantly in December- January –February (DJF) when the average number of hot DJF days has increased by 2.5 days per month (an additional 8.2% of DJF days) between 1960 and 2003. The average number of 'hot' nights per year increased by 50 (an additional 13.6% of nights) between 1960 and 2003. The rate of increase is seen most strongly in DJF when the average number of hot DJF nights has increased by 6 days per month (an additional 19.8% of DJF nights) over this period.

[8] *Future Climate for Africa: Tanzania country brief 2017*

[9] *Tanzania dashboard. Available at: http://sdwebx.worldbank.org/climateportalb/home.cfm?page=country_profile&CCode=TZA&ThisTab=ClimateBaseline*

10 Draft stocktaking report of the National Adaptation Plan –NAP, 2018

The frequency of cold days has not changed discernibly, despite the observed increases in mean temperature. The frequency of cold nights has, however, decreased significantly in all seasons. The average number of 'cold' nights per year has decreased by 34 (9.3% of days). This rate of decrease is most rapid in DJF when the average number of cold DJF nights has decreased by 3.6 nights per month (11.5% of DJF nights) over this period

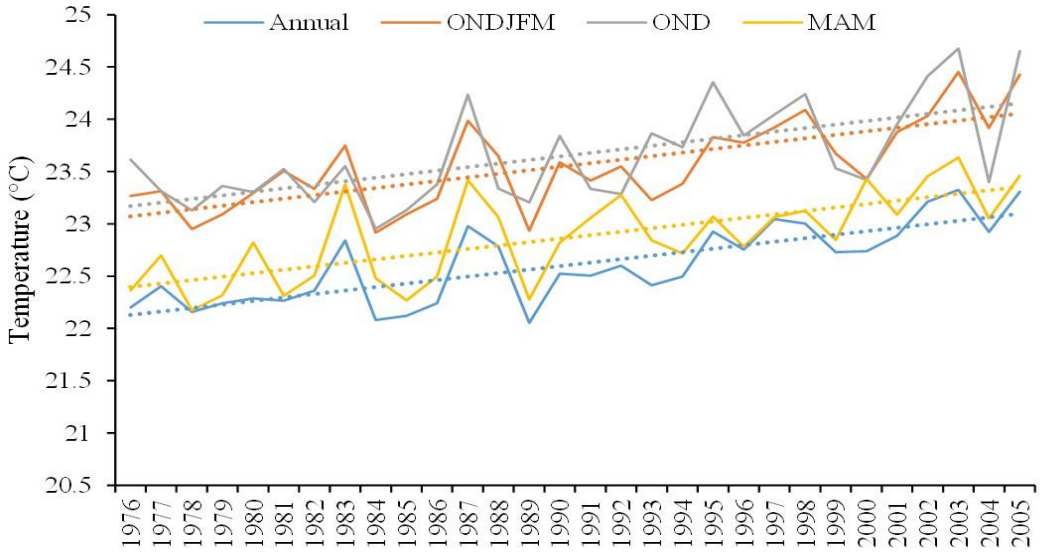


Figure 2: Observed annual and seasonal temperature (^{0}C) in Bunda for the period covering 1976 -2005. Seasons are March to May (MAM), October to December (OND) and October to the following March (ONDJFM) Source [11].

1.3.2 Future climate change/future climate projections

Most of available climate model projections indicate that Bunda District and all regions around Lake Victoria will have higher future rainfall amount[11]. Available climate information agree strongly for future decrease in the mean number of rainy days and increases in the amount of rainfall/rainfall insensity for each rainy day. All projections of future precipatation suggest more variability in rainfall with both likelihood of dry spells and higher likelihood of intense rainfall events, more often associated with flooding. Mean rainfall is projected to increase slightly in annual rainfall[12], and the increase is said to be similar throughout the District areas, but the seasonal patterns of change will be more complex[13]. However, many analyses and Observations of past rainfall data in Bunda district show significant decreasing trends in annual, June –July-August-September(JJAS) and March-April-May rainfall.

As explained earlier, all parts of Bunda District like in most districts and regions in the United Republic of Tanzania are growing hotter[14]. It is very likely that, throughout the District, temperature will increase by 1.0 to 2.7˚C by the 2060s, and 1.5 to 4.5˚C by the 2090s. However, the range of projections by 2090s under any one emissions scenario is 1.5-2.0˚C. All projections indicated that:- a) Hot' days will occur on 19-40% of days by the 2060s, and 19-65% of days by the 2090; b) Nights that are considered 'hot' for the annual climate of 1970-1999 are projected to increase more quickly that hot days, occurring on 30-68% of nights by the 2060s and 35-91% of

[11] URT,2014: *Agriculture Climate Resilience Plan 2014-2019*

[12] *TMA 2014, Climate change projection for Tanzania.*

13 UNDP 2010, Climate change country profiles: Improving the accessibility of observed and projected climate change information for studies of climate change in developing countries.

14 Wambura et al (2014). Projections based on Coupled Model Intercomparison Project phase 5 (CMIP5) model using Mid-Century Representative Concentration Pathway (RCP) 8.5. A total of twenty global circulation models (GCMs) were downscaled based on the eleven Tanzania climatological zones using thirteen synoptic weather stations.

nights by the 2090s; c)Nights that are considered hot for each season by1970-1999 standards are projected to increase particularly rapidly in December-January-February (DJF), occurring on47-99% of nights in the season by the 2090s; and d) Decrease in the frequency of days and nights that are considered 'cold' in the current climate. Events of cold days and nights are expected to become exceedingly rare, with cold days occurring on 0-4% of days and cold nights occurring on a maximum of 1% of days, and not at all under higher emission scenarios, by the 2090s[14, 15].

1.3.3 Future effects of climate change

Predicted increase in the frequency of intense rainfall events indicates that, flooding is expected to occur, particularly in low-lying areas of Bunda District. The frequency of droughts is also predicted to increase, by 40–70%. Floods are expected to increase in frequency and magnitude in the low-lying villages. As more 90% water sources are provided by direct rainfall, the predicted spatial variation in rainfall patterns is expected to cause in changes in water availability and serious water scarcity in various villages in the District. A predicted decline in rainfall volume per season, coupled with increased variability in rainfall patterns, is expected to cause serious crop failures and reduce the productivity of farming, for example more than 20% reduction of total food crop production in the District and other areas around Lake Victoria zone by 2090 is predicted[12,13,14,15]. In addition, the increased frequency and severity of extreme weather events is expected to increase livestock mortality, decreased wild fish catches and abundance. Therefore, under the likely future conditions of climate change, district food insecurity will be intensified and vulnerability of local communities to climate shocks will be increased as livelihoods underpinned by fishing and livestock activities including agriculture will strongly be marginalized. Because livelihoods and several economic, livelihood activities and social life if communities in Bunda are reliant on natural resources, climate change may indirectly result in negative socio-economic effects and failures of the existed community social systems.

1.3.4 Climate Change and gender issues in Bunda district

In Bunda district, climate shocks such as irregular rain and periods of drought and heavy rainfall are affecting everyone who relies on agricultural related sectors for survival. Moreover, the effects of climate change are particularly pronounced on vulnerable groups such as the poor and women in the district[15]. In most cases, data in the district indicate that, women are the most affected group by all climate related effects and disasters as their ability to adapt these event is poor. In addition, unequal access and control over assets mean that men and women do not have the same adaptive capacity and bear a disproportionate burden of climate change consequences due to their social roles, poverty and intra-household inequity[16]. Women are especially vulnerable to seasonal, episodic weather and natural disasters because of their responsibility for water procurement and household care, roles in securing food and fuel wood, reliance on low technology for agriculture and greater exposure to risk in crisis and severe weather events that may have been by climate by climate change. For instance, it is now common practices in the district for women to undertake more responsibilities during famine and reconstruction of homesteads while most men often emigrate and take refuge to other places away. Moreover, climate change induced water scarcity and food shortage in the district has been linked with the **increased conflict within households**, including incidents of gender-based violence and abandonment. Children especially school girls are also considered more at risk to climate change effects as they could more easily get sick or hurt due to the instability of the home and more often are pulled out of schools. The proposed project will take into consideration various gender roles in various activities and by using such information, develop gender sensitive and

[15] ***Bwire,M.K*** *(2018) Tackling "Climate Change" in Bunda district: Can Integration of Ecosystem-Based-Approach (EBA) and Community-Based- Approach (CBA) be more effective? Perspectives from grass-root communities, unpublished paper*

[16] *Bunda district Ciuncil,2018*

segregated adaptation mechanisms to combat adverse effects of climate change. For instance, representation of women members in COWSOs will be given more emphases, number of women groups and women stakeholders will be included in income generating activities including engaging in aquaculture activities, small- scale irrigation, bee keeping activities, ecological restoration activities and tree planting. The project will therefore ensure equal opportunity for both women and men to participate in stakeholders' meetings, implementation of project activities, and training for capacity building in order to build their climate resilience while addressing their differentiated vulnerability, and increase their adaptive capacity to adapt to climate change impacts. See Annex 3 Summary of gender analysis against project components for more details on gender issues considerations by the proposed project.

Figure 3: Evidences of gender poverty and vulnerability to climate change effects manifestations in terms of housing condition and farm implements (hand hoe) (source : Bunda District Council, 2018)

1.4 Scope of the project and location of project areas

The project will implement concrete resilience and adaptation measures in selected communities of Bunda District. The priority areas will include sustainable Socio-economic development and environmental management with key activities in the water, agriculture, fishery, livestock, forests and ecosystems management. The project areas cut across various Divisions, Wards and Villages of Bunda District as shown in Table 2: The project areas are spread across the district among communities with diverse cultures who derive their livelihoods from the environment and are most vulnerable to the effects of climate change. The selected project areas are more vulnerable to climate change effects and have significant water deficit and food shortage status that makes the inhabitants to suffer the most to climate shocks and bad weather events like drought and dry spells.

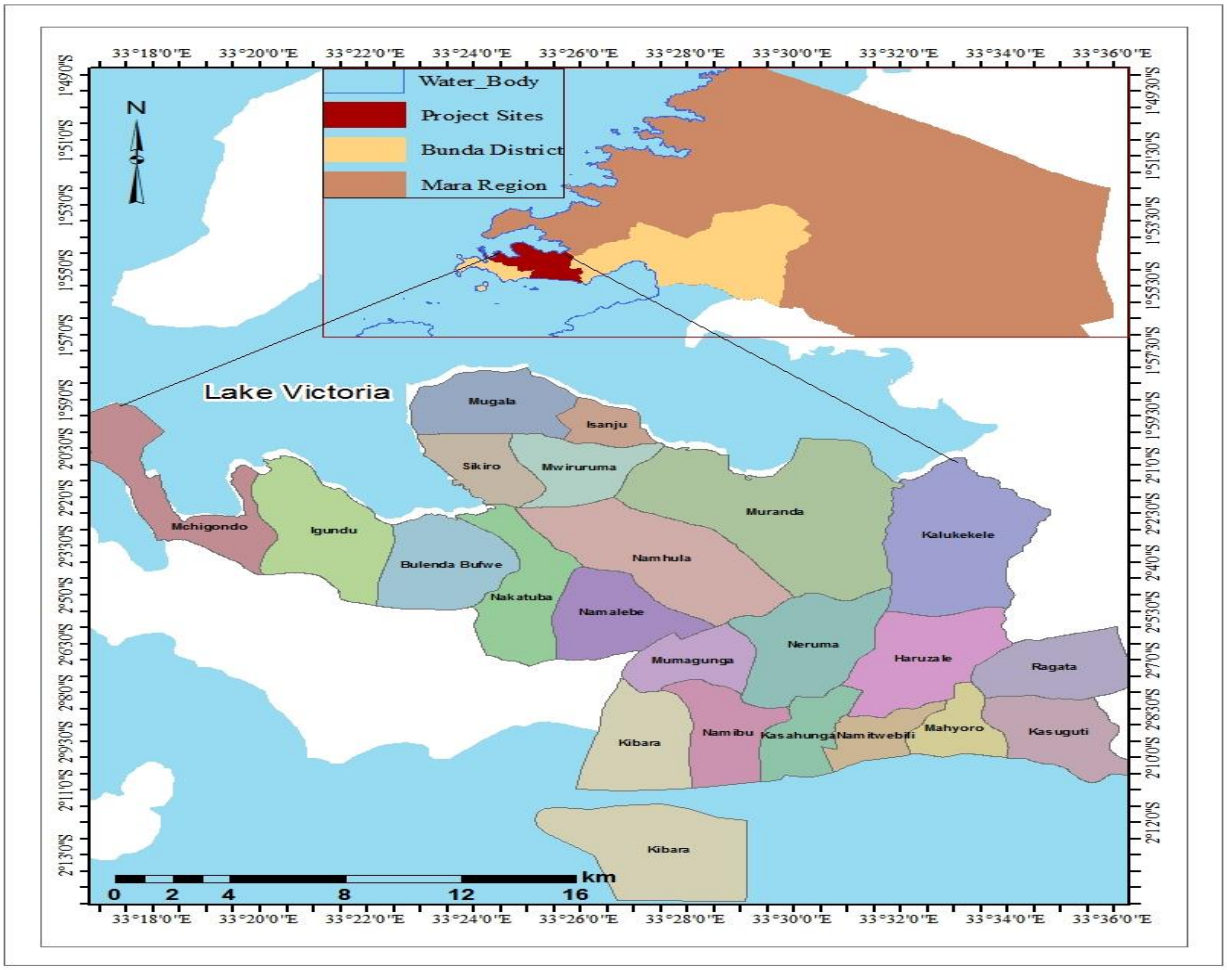


Figure 4: Map of Bunda district showing the project sites

1.5 Project objectives

The project will specifically target the most vulnerable groups who have less resource to adapt to climate change in Bunda and is built on the principles of local empowerment through engagement of vulnerable and grassroots communities such as farmer groups and village governments and community groups. Therefore, the overall objective of this project is to enhance resilience and adaptive capacity to effects of climate change while reduce vulnerability of selected communities in Bunda District. Specifically, the proposed project will be addressing through the following specific objectives;

i) Enhance climate resilience for improved access to rural water supply system in selected drought prone agro-pastoral communities of Bunda district;
ii) Improve agricultural productivity, livelihood and agro-ecosystem resilience through Climate Smart EVA practices;
iii) Promote paradigm change of small-scale fishers for sustainable income and climate resilient rural livelihood through aquaculture innovations in selected villages of Bunda district;
iv) Improve ecological and environmental services and functions to sustain climate sensitive rural livelihoods in selected rural communities of Bunda District;
v) Strengthening institutional capacity and knowledge management on climate change adaptation.

1.6. Project Components and Financing

Table 1: Logical framework for the proposed project including indicative activities and budget estimates per components

Project Components	Expected Concrete Outputs	Indicative activities	Expected Outcomes	Amount (US$)
1. Enhancing Climate resilience through water supply system of the drought prone agro-pastoral communities	*1.1: Climate resilient rural water supply system established in selected drought prone agro-pastoral communities of Bunda district*	*1.1.1 Rehabilitation of pump houses and installation of submersible water pump at Kasahunga, Mumagunga and Isanju water sources. The rehabilitation and installation of submersible water pumps will support and create climate resilient water system for rural communities over 36,519 water users in 2021 to over 78,000 water users in 2050 by producing a total of 3,179.6 meter cubic per day for the coming 25 to 30 years*	Enhanced climate resilient water management and supply system in vulnerable agro-pastoral communities of Bunda District	501,360.00
		1.1.2 Rehabilitation and improve water storage tanks at Isanju, Namhura, Mumagunga and Kasahunga villages and construct sump tank at Namhura village. Five water storage tanks will be improved through scrapping and plastering with water proof materials i.e FIT bond materials (internal and outside of the tank) to provide 2 ladder, man hole cover, buck meter 6",Sluice valve 6'' and fencing		
		1.1.3 *Rehabilitate water network system (about 11.5 kilometers) in Iramba, Neruma, Namhura and Nyamihoro Wards covering Nyamitwebili, Neruma, ,Kasahunga, ,Namhura, Isanju and Mwiruruma villages and make them more climate resilient.*		
		1.1.4 Extension of water network system (10.297 kilometers) for Kasahunga and Isanju water sources to cover drought prone communities of Mumagunga, Chamakapo and Mulanda villages in Namhura and Neruma Wards.		
		1.1.5 Drill boreholes in drought prone villages (Namalebe – Nakatuba, Igundu Nasululi and Lagata) villages uncovered with water systems from Kasahunga and Iramba surface water sources and Install solar energy driven water pumps		
		1.1.6 Construct storage tanks and Water Kiosk/Network for the drilled boreholes		

Project Components	Expected Concrete Outputs	Indicative activities	Expected Outcomes	Amount (US$)
	1.2: Water troughs for cattle constructed in selected agro-pastoral communities in Bunda district to improved water availability during drought and dry periods	1.2.1 Establish and/or strengthen water governance structures/arrangements (COWSOs by considering gender balance for selection of members of the management team) to better manage water source, equitable and gender sensitive water allocation for human and other uses, and revenue collection and develop by-laws for regulating effective use of water resources and protection of rural water infrastructures		
		1.2.2 Train selected members from COWSOs on operation and maintenance of their climate resilient rural water supply schemes to ensure sustainability.		
2. *Improving agricultural productivity, livelihood and enhancing agro-ecosystem resilience through Climate Smart EVA practices*	2.1 Climate Smart EVA practices to improve food security through small scale and micro-irrigation schemes enhanced in selected villages of Bunda district	2.1.1 Construct and establish drip irrigation structures/facilities Poly/sim tanks, PVCs, solar pumps and net houses) for intensified horticultural crops and relevant food crops at Mchingondo (Buguma) and Mumagunga villages of Bunda District Council	Improved agricultural productivity, livelihood and agro-ecosystem resilience through Climate Smart EVA practices in selected village communities	330,250.00
		2.1.2 Construct and establish irrigation structures/facilities of (water tank, PVCs, canals, motorized pump, and electrical transformer) for enhanced field crop (paddy) production at Mchigondo (Buguma) village of Bunda District Council.		
		2.2.3 Facilitate construction of two post-harvest management centers/warehouses for paddy and sunflower at Mchigondo (Buguma) and Kasuguti villages of Bunda District Council using force account modality.		
		2.1.4 Facilitate increased use of EVA practices and drought tolerant and early maturing crops by farmers in Bunda district council		
		2.1.5 Facilitate availability of crop value addition technologies (modern paddy hulling machine, sunflower seed pressing & oil refinery machine, cassava graters and horticultural drying micro technologies) for the farmer groups particularly for Mchingondo, Mumagunga and Kasuguti in Bunda District Council.		
		2.1.6 Capacity Building to farmers through training programs on good agronomic practices through farmers field schools, Female Farmers Field Schools, Demo plots, Agroforestry of the selected crops (Cassava, sweet potatoes, paddy, sunflower, horticultural crops, agroforestry crops), operations and maintenance of the constructed/installed irrigation facilities, crop post-harvest management practices and value addition.		

Project Components	Expected Concrete Outputs	Indicative activities	Expected Outcomes	Amount (US$)
		2.1.7 Facilitate improved local chicken keeping practices for Neruma, Mumagunga, Chingulubhila and Namhura Villages as potential enterprises to generate income and building resilience for the poor households and women groups		
3. Promoting paradigm shift of small scale fishers for sustainable income and climate resilience livelihood through fish farming innovations in selected villages of Bunda District	3.1 Traditional fishing practices transformed for improved climate resilient livelihood and sustainable income generating activities in selected villages of Bunda District.	3.1.1 Construction of 10 earthen ponds sized 20 x 40 Meters for vulnerable small-scale fishing communities (Women and youth groups inclusively) at Buguma and Isanju villages	Traditional fishing practices of small-scale fishers transformed and' income improved through climate sensitive aquaculture innovation	143,779.00
		3.1.2 Introduction of an effective and efficient fish culture techniques using Tilapia cages by Establishing 10 Cages (Sized 5x5x2.5m. each) for vulnerable small-scale fishing communities (Women and Youth groups) at Buguma and Isanju villages		
		3.1.3 Procure and introduce 107,000 fingerlings in 10 ponds and 20 cages		
		3.1.4 Purchase two Wooden Outboard Engine Boats for the farmers at Both Buguma and Isanju Villages		
		3.1.5 Purchase of Feed for pre-nursery, Nursery, Grow outs/Brooders and Hatchery feeders		
		3.1.6 Train community on Fish culture Techniques and fishing skills at Cage sites in Lake Victoria		
		3.1.7 Facilitate establishment of one fish hatchery for tilapia species at Buguma village		
		3.1.8 Facilitate construction of a two-room building for feed preparation for the established fish hatchery, purchase and enable installation of a pelletizer and Feed mixing machine at Buguma village		
		3.1.9 Facilitate introduction of modern techniques for improved fish feeds formulation through use of powder and pallets to promote sustainability.		
		3.1.10 Facilitate study Visit of selected fish farmers on Tilapia Cage farming in Kisumu-Kenya to appreciate livelihood transformation and available climate sensitive fish farming techniques in the region		
		3.1.11 Provide fish security management in ponds and Cages at Buguma and Isanju villages		
4. *Improve ecological and environmental services and functions to*	4.1.Improve ecological and environmental services and functions to sustain	4.1.1 Establish and implement ecological restoration and rehabilitation plans (hills, mountainous and woodland restored and conserved) in selected Wards (Iramba, Neruma, Namhura, Kitengule and Igundu wards)	Improved ecological and environmenta	149,256.00

Project Components	Expected Concrete Outputs	Indicative activities	Expected Outcomes	Amount (US$)
sustain climate sensitive rural livelihoods in selected rural communities of Bunda District	climate sensitive rural livelihoods in selected rural communities of Bunda District Integrated management of environmental and ecological systems implanted to sustain climate sensitive rural livelihood	4.1.2 Promote improved ecosystem-based income generating activities at Mwiruruma, Isanju, Mumagunga, Kenkombyo, Buguma, Igundu, Namhura, Kasahunga, Sikiro, Nyamitwebili and Namalebe through (a) improved bee keeping activities in woodland, hills and mountainous systems and (b) fruit plants farming 4.1.3 Mobilize enclosure systems in degraded ecosystems to promote natural regeneration and recovery of ecological functions and explore the use of local/traditional institutions to strengthen management of sensitive ecological systems. 4.1.4 Engage farmers in tree planting on surrounding residential areas, along streets and roadsides and degraded landscapes and establish ecological schools (3 secondary and 3 primary schools) and villages (4 villages) in selected wards of Bunda district.	l services and functions to sustain climate sensitive rural livelihoods in Bunda District	
5. S*trengthening institutional capacity and knowledge management on climate change adaptation*	5.1.Capacity of the district and communities in Bunda is strengthened to respond to extreme weather events	5.1.1 Facilitate training to government stakeholders, technical staffs, community groups and civil society in climate risk management and project measures for further scaling up 5.1.2 Communicate and share knowledge generated through project implementation in Bunda District, National and International communities 5.1.3 Sharing project results and lessons learned 5.1.4 Facilitate provisional of project monitoring and evaluation activities	Strengthened institutional capacity to reduce risks associated with climate-induced socio-economic losses and livelihood failures in Bunda district	48,355.00
1.	Project execution cost			120,000.00
2.	Total Project cost			1,293,000.00
3.	Project cycle Management Fee charged by the Implementing Entity			107,000.00
4.	**Amount of financing requested**			**1,400,000.00**

1.7 Projected Calendar

Table 3: Projected milestone dates of the proposed project

Milestones	Expected Dates
Start of Project Implementation	June 2021
Terminal Evaluation	March 2024
Project Closing (4 months after project completion)	September 2024

PART II: PROJECT JUSTIFICATION

PARTII A: *Describe the project / programme components, particularly focusing on the concrete adaptation activities, how these activities would contribute to climate resilience, and how they would build added value through the regional approach, compared to implementing similar activities in each country individually. For the case of a programme, show how the combination of individual projects would contribute to the overall increase in resilience*

Bunda district is part of the Serengeti ecosystem, largely with a semi-arid weather system. Although agriculture is the major livelihood activity, it depends on rainfall patterns of the region. However, the district rainfall pattern is not reliable, it is erratic and less than most crop requirements. Thus, communities are highly exposed to climate change impacts. This necessitates for alternative district resilience plan that will ensure communities' livelihood support water supply, agriculture and fisheries systems. More efforts will be needed for strengthening the implementation of various resilience plans. These will necessitate the inclusion of improvement of ecological and environmental services, market value chain improvements and institutional capacity enhancements.

In order to achieve the set objectives, the project will focus on both implementation of concrete on-ground adaptation activities in the selected sites vulnerable rural communities and strengthening institutional capacity across the Departments in the district. The project implementation approach will include five components, detailed below:

Component 1: Enhancing Climate resilience through water supply system of the drought prone agro-pastoral communities

Outcome 1: Resilient rural water supply system in selected drought prone agro-pastoral communities of Bunda District

Output 1.1: Enhanced climate resilience for improved access to rural water supply system in selected drought prone agro-pastoral communities of Bunda District

Rural communities in Bunda district rely on climate-sensitive water sources for their water supply and improvement of livelihoods. The recent and future projections for climate change indicate enormous potential disruption of almost all-natural springs and seasonal rivers which has been their traditional water sources. Such substantial climatic change will further increase water scarcity, to detrimental effect of almost all rural communities in drought prone villages. Due to this, the proposed output is designed to put climate resilient rural water supply and pumped scheme through rehabilitation of previous water system, establish and extend new networks to cover new 5 villages in the project site. The old system was built in early 1970s, and was grounded in the late 1980s. However, some few important structures like pump houses, storage tanks still exist. A number of reasons contributed to poor state of the old system. These factors include operation cost was too high for rural communities to afford as water pumps were driven by Diesel, poor operation and management structure as the government through ministry of water failed to put important operation structure. Operations were managed from Dar es Salaam about 1, 500 kilometers way. Other reasons include existence of alternative traditional water streams and wells which appeared to be better options during those days as the climate was still favorable and rains seasons were predictable and available almost throughout the year. Drought conditions and dry spell events were not commonly pronounced. These factors together with the outdated and expensive technology deployed for operations were major drivers to abandonment. In recent past there are some efforts being done by the district council to rehabilitate and recommence operations. But these efforts have been pulled back by poor state of these old and outdated system/infrastructures. The poor state of these structures makes them more risk and to climate related shocks. For instance,

all pump houses have faults such that, they need major rehabilitation to with stand strong - whirled winds which are commonly in the area nowadays and projected to intensfy in future.Water levels has also changed. The quantification requires deployment of submersible pumps at a depth of not less than 10 meters to make the system to function under the current and projected water demand in the coming 30 years, and in special consideration of the on-going climate change effects to the lake levels. The submersible pumps will be connected to the national electric grid. The average day demand for the design year until project lifetime (2050) has been recalculated and forecasted as the basis of the hydraulic network analysis. The demand condition has been varified by adjusting the demand factor; that is 1 for the average day demand condition, 1.3 for the maximum day demand and 2.5 – 3 for the peak-hour demand as stipulated in the Water Supply Design Manual, 2020. Water network configuration has been redesigned to make the new system under this project be more climate -resilient.

Under this project output, climate-resilient water supply infrastructures will be built by considering all conditions and guidelines provided by the g: Design, Construction Supervision, Operation and Maintenance (DCOM) Manual. Informed by the Designing Manual of Water Supply Projects, 2020 in the United Republic of Tanzania, the recent-past and future climate indices, climate change trends and its residual impacts has been assessed and analysed, to ensure the proposed water supply infrastructures are designed to withstand negative climate change impacts. Three scenarios were considered based to the four representative carbon pathways ('RCPs'), RCPs 2.6, 4.5, and 8.5, in which the numbers indicate the range of radiative forcing values by the year 2100. In terms of socio-economic developments only the impacts of population growth on water demand were considered. Static assumptions were made on socio-economic developments to capture the overall daily and annual water demand from 2021 until 2050.

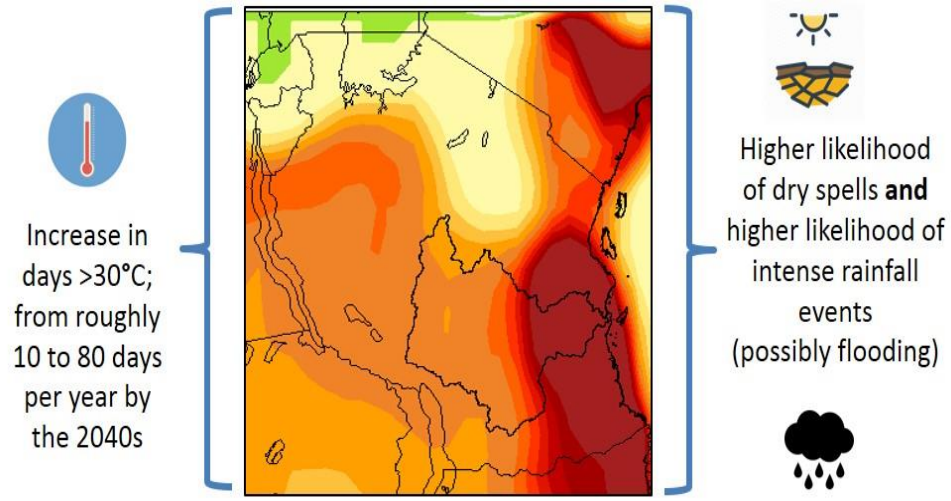


Figure 5: Observed and predicted trends of dry spells and flooding events in Tanzania and in Bunda District. Source [11]

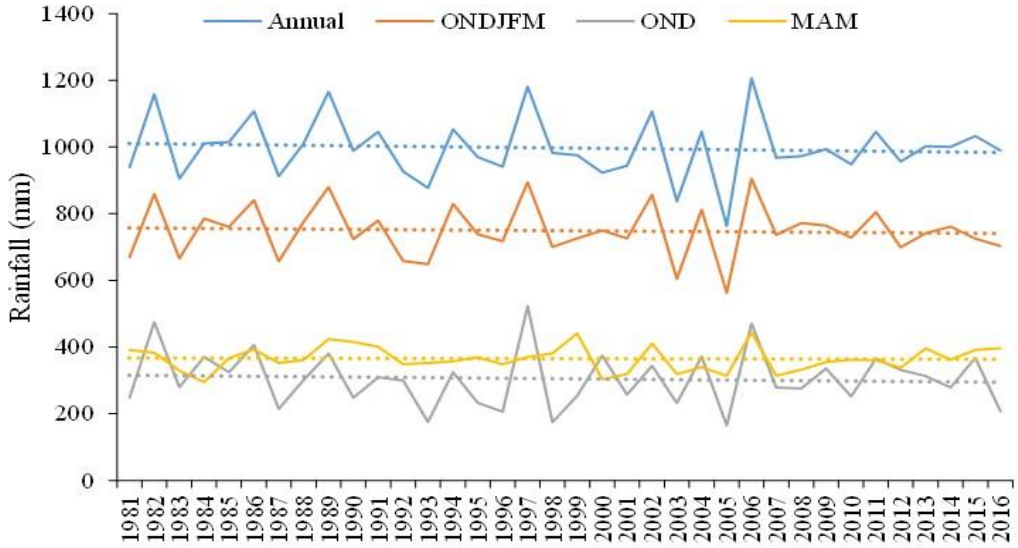


Figure 6a: Observed annual and seasonal rainfall trends in Tanzania including Bunda for the period covering 1981 -2016. Seasons are October to March (ONDJFM), October to December (OND) and March to May (MAM). Many analyses and Observations of past rainfall data in Bunda district show significant decreasing trends in annual, and March-April-May rainfall. Source [11]

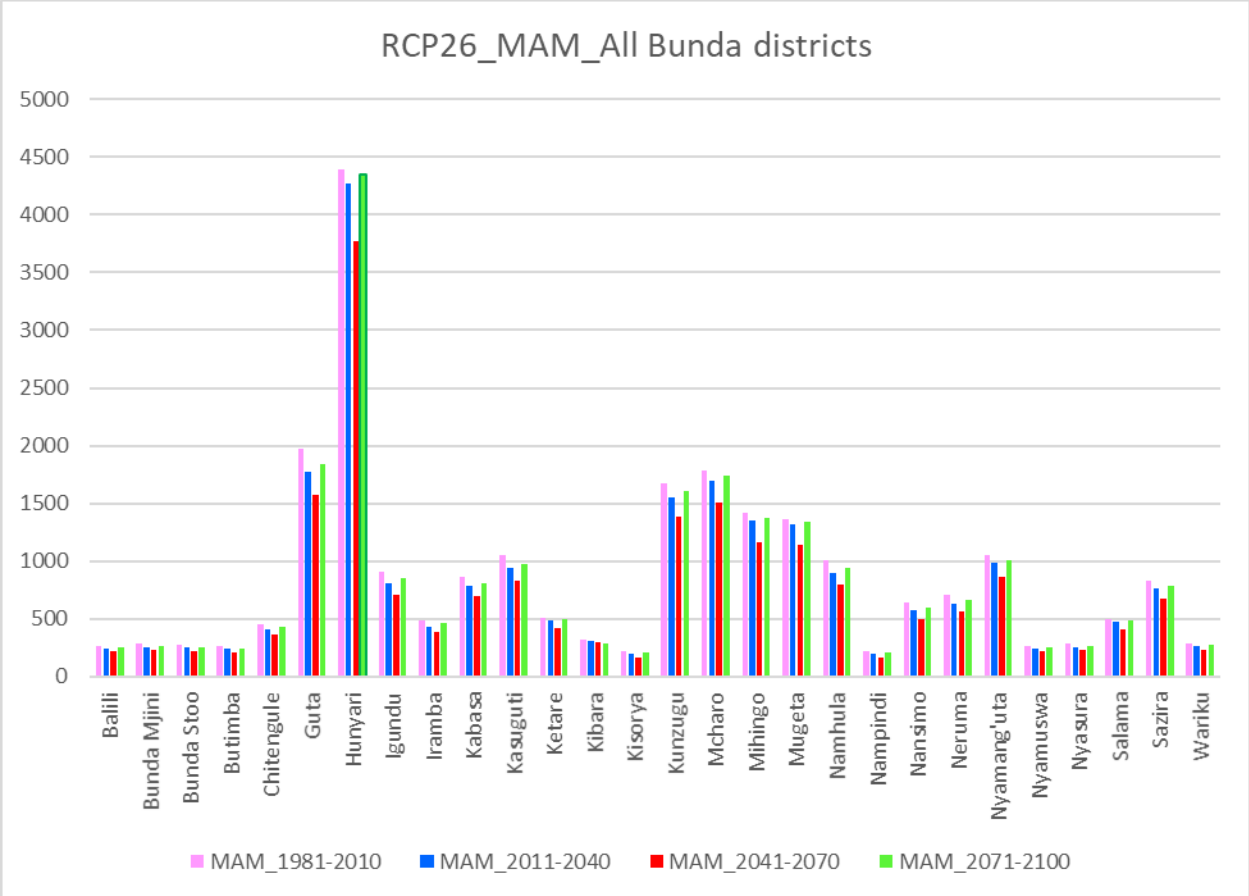


Figure 6b: Spatial historical and projected rainfall behavior in the project site for the longer rains' (March-April-May) for the period covering 1981-2100, under RPC 2.6 scenario.

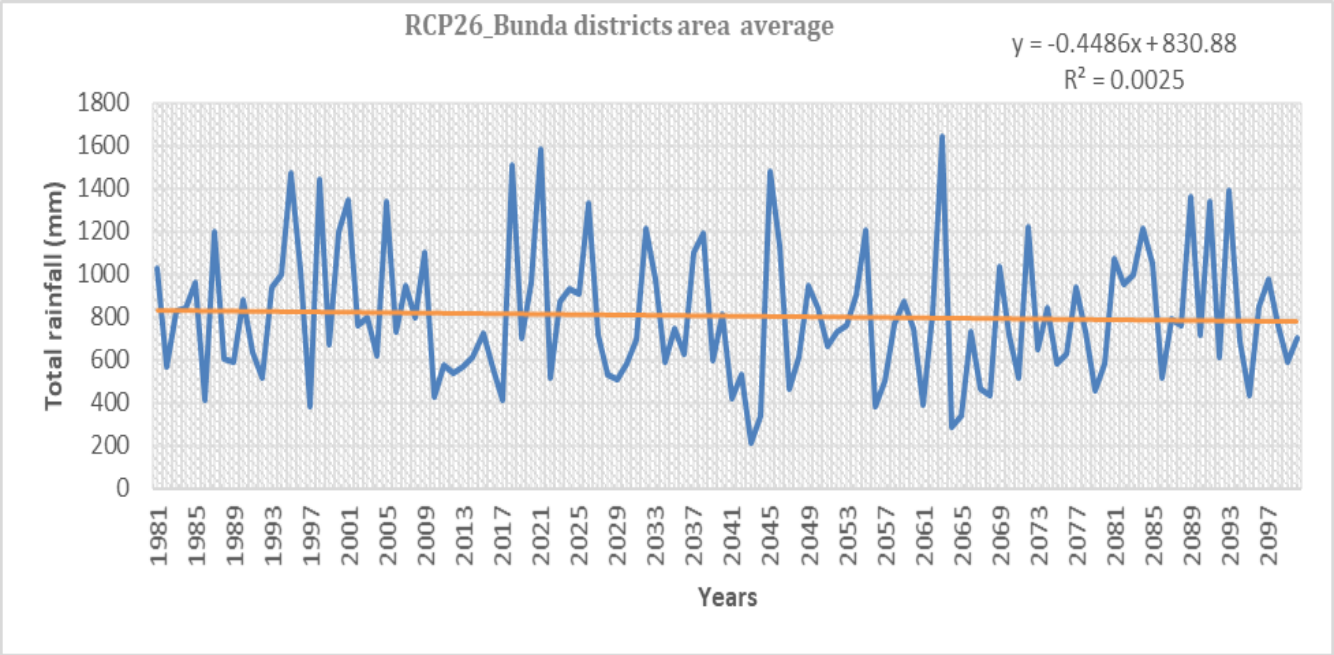


Figure 6c: Historical and projected total rainfall trend in Bunda district under RPC 2.6 scenario.

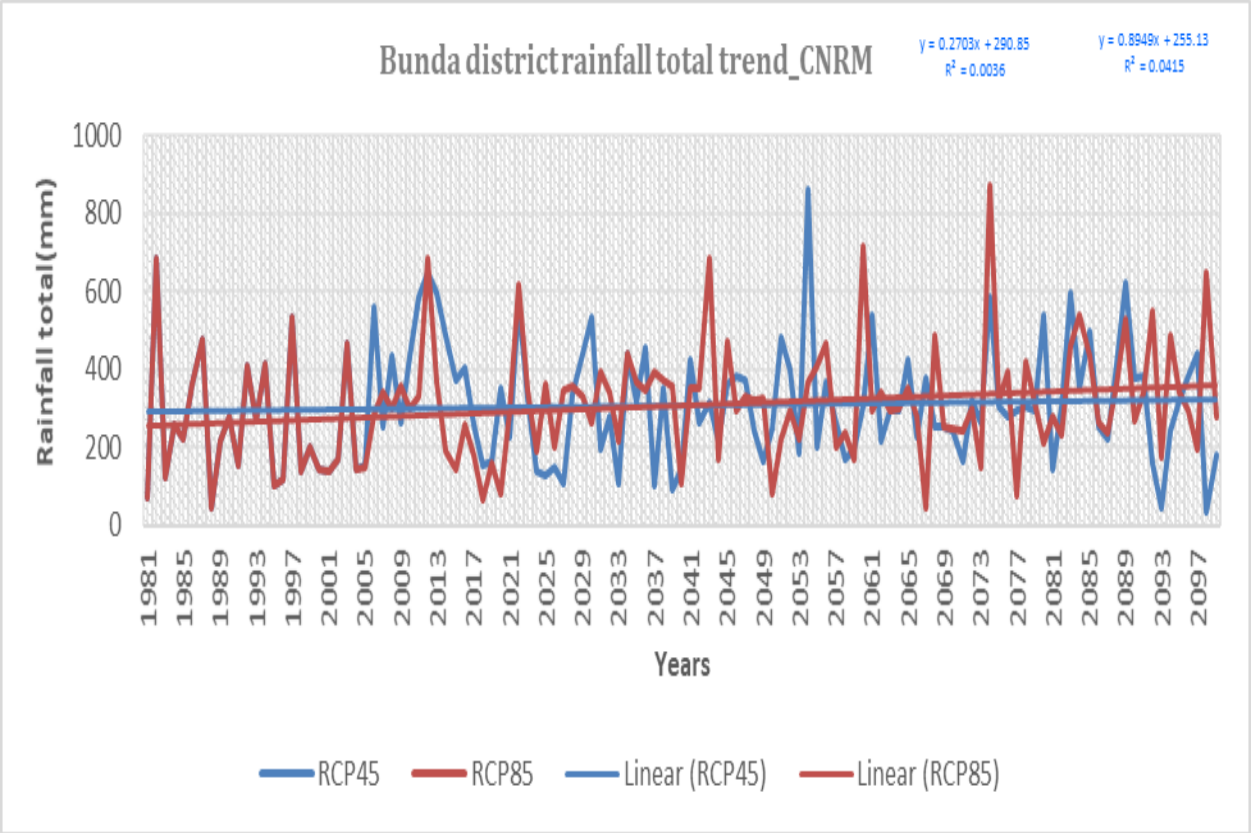


Figure 6d: Historical and projected total rainfall trend in Bunda district under RPC 4.5 and 8.5 scenario.

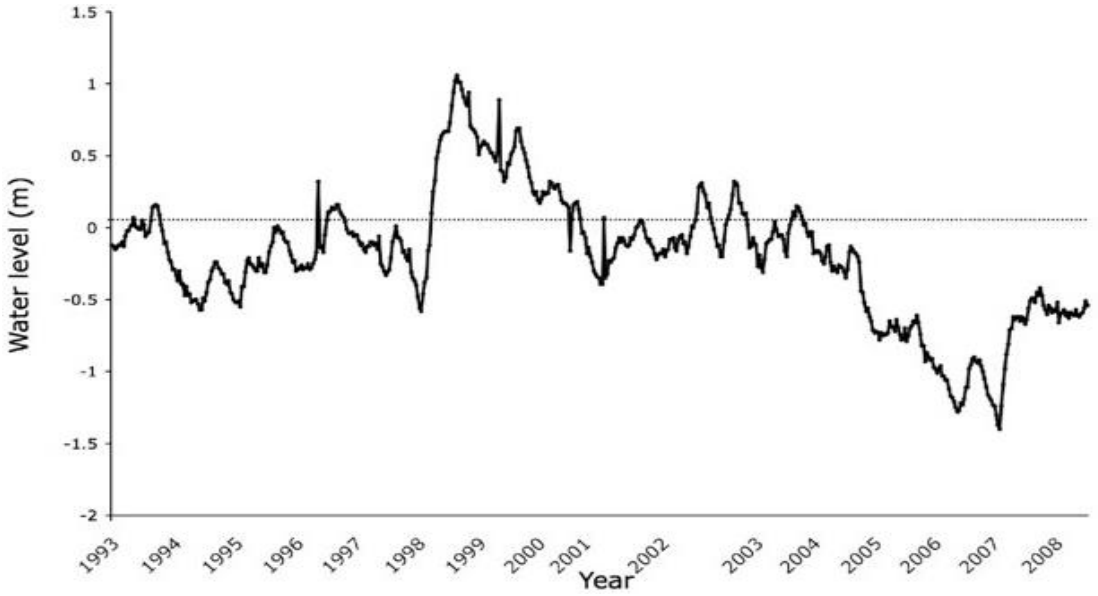


Figure 7: Fluctuation of water levels in the Lake Victoria 1993-2008

This project is in-line with the Government of Tanzania and Bunda district plans to ensure water availability to rural communities, under the continued climate change effects. Based on the recent-past and predicted climate impacts in Bunda, and in Tanzania (as described above and at at sub-sections 1.3.1, 1.3.2 and 1.3.3), key climate change induced threats to security of the proposed water supply system have been identified to be floods due to extreme precipitation events and droughts. Remedial actions have been integrated in the design. For instance, the recent-past and predicted future precipatation suggest more variability in rainfall with both dry spells and higher likelihood of intense rainfall events, more often associated with flooding (figure 5). This has already been evidenced by fluctuation of water levels in Lake Victoria. Since 1998 water level has been undergoing declining trend (figure 7), but from October, 2019, water level has consistently gone up/rising. This is a rise of 1.32 meters attained in only 6 months and the **level** is only 0.08 meters away from the highest level ever recorded. Similar sharpest rise in the lake water level occurred during the El'Nino rains of early 60s and 1997/1998, in those episodes reports the lake level rose by 2.5m due to floods and over-lake precipitation. However, between 2004 to 2008 Lake Victoria water levels dropped drastically, more than 1.1 m below the 10-year average.

In order to ensure water supply infrastructures are designed to withstand the observed and anticipated negative climate change impacts while maintain the current and future water demand; the following designed considerations will be observed during implementation.

a) Pipelines design: The quantity of water to be supplied has to be conveyed from source to consumers. Normally, through pipelines. The quality, quantity, size and calculation of pipelines hydraulics and associated design approaches will be in accordance to the Design manual for Water Supply Projects, 2020.
b) Selection of pipe material and size: During implementation, pipe materials will be selected to withstand the highest possible pressure that can occur in the pipeline and other environmental vagaries. During implementation, factors such as flow characteristics, pipe strength, durability, type of soil, cost of pipes and availability in the local/international market will be considered and followed.
c) Pipe network analysis: Pipe network analysis involves a detailed and careful scrutiny of the fluid flow through a hydraulic network containing several interconnected branches and loops. In the design of a distribution system, a pipe network, land scape,

soil type and including factors such as flooding events and soil erosion will be has been analyzed. The proposed water network avoids areas with serious soil erosion and strong storm flows.

d) Pumping system design and pump selection: In this project, factors which has been considered in the selection and sizing of a pump include i) Depth to the water level and its seasonal variations; ii) Pressure ranges needed for adequate water supply; iii) Heights through which water has to be lifted, both below and above the pump; iv) Pump location; v) Pump durability and efficiency.

Therefore, the investment requested for climate-resilient water supply infrastructures, is expected to improve drinking water supply to meet the current demand and for the future water users. About 36,519 people, currently available in the project site will be able to access safe and quality drinking water supplied by the proposed investments under output 1.1. Moreover, this investment will adequately continue to maintain water supply needs for future users, who are expected to be over 78,000 people in coming the 30 years (by 2050), see table 4 and Figure 8There will be five (5) major storage water tanks, of which the four (4) water storage tanks each has storage capacity of 300 meter cubic each, and one (1) tank has relatively small water storage capacity, of 90 meter cubic. Thus, pumping hours per day will range from 4 to 8 hours per day. COWSOs will be formulated to manage and operate the water system and affordable utility charges of not exceeding US $ 0.022 per 20litres. The price has been proved to be sustainable and will create/ generate revenue amounting to US $ 711,066 in the first three years of operations, while the operation cost will range between US $ 389,000 to 520,00.The proposed water yield is therefore sustainable and considers well the need of the current and future water users in the project area. .

Table 4: Projected water demand over time

S/N	Description	Water demand (m^3/d)			
		2020	**2021**	**2041**	**2051**
1	Domestic Water Demand (A)	949.5	974.2	1,627.7	2,104.0
2	Livestock Water demand (B)	45.6	46.3	61.4	71.3
2	Institutional Water Demand (C)	26.1	8.6	8.6	8.6
3	Commercial Water Demand (D)	5.8	5.8	10.9	16.1
4	Industrial Water demand (E)	12.0	8.0	8.0	8.0
	Average Daily Demand (ADD)	**1,039.0**	**1,042.9**	**1,716.7**	**2,208.0**
5	Losses (20% of ADD- Non-revenue and physical losses)	207.8	208.6	343.3	441.6
6	Fire fighting demand (2% of ADD)		-	-	-
7	**Gross Water Demand (m3/d)**	**1,246.8**	**1,251.5**	**2,060.0**	**2,649.6**
	Peak Day Factor	1.2	1.2	1.2	1.2
8	Maximum Day Demand (m3/d)	**1,496.1**	**1,501.8**	**2,472.0**	**3,179.6**
9	Pumping Hours per day	18.0	18.0	18.0	18.0
10	Maximum Day Demand (m3/h)	83.1	83.4	137.3	176.6

11	Maximum Day Demand (l/s)	**23.1**	**23.2**	**38.1**	**49.1**
13	**Hourly Peak Factor**	1.5	1.5	1.5	1.5
14	Peak Hour Demand (m3/hr)	124.7	125.1	206.0	265.0
15	Peak Hour Demand (l/s)	**34.6**	**34.8**	**57.2**	**73.6**

Table 5: Projected population of water users/beneficiaries including gender segregation

Year	2021	2025	2030	2035	2040	2045	2050
Number of beneficiaries	37,468	41,519	47,205	53,669	61,019	69,374	78,875
Number of male beneficiaries	18,359	20,344	23,130	26,298	29,899	33,993	38,649
Number of female beneficiaries	19,108	21,174	24,074	27,371	31,120	35,381	40,226
Number of households	6,351	7,037	8,001	9,096	10,342	11,758	13,369
Female headed households	2,096	2,322	2,640	3,002	3,413	3,880	4,412

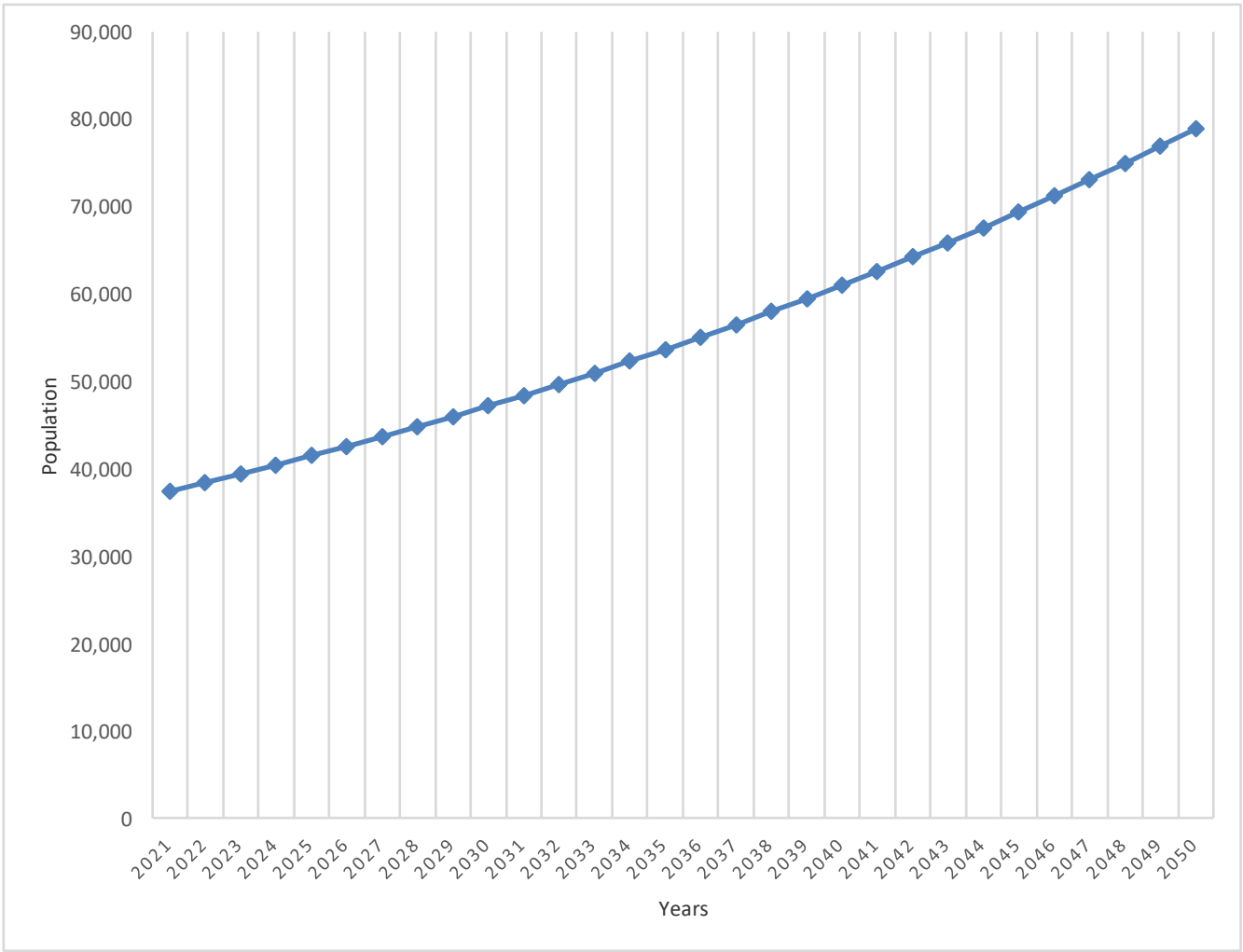


Figure 8: Projected population of water users/beneficiaries

Figure 9: The observed effect the recent rise in Lake Victoria water kevels to the pump houses at Kasahunga,, water sources. The sources were designed in 1970s without integration of climate change issues in during the design. The proposed intervention under output 1.1 avoids such mistake, and considers projected /future climate events under various scenarios including optimistic ones. The photo on the left-hand side was taken in July 2019 before the rise of lake water levels while the photo on the right hand was taken in February 2020 after the rise of Lake water levels due to floods and extreme precipitation events.

Figure 10: Effects of water level rise in Lake Victoria on social livelihoods and water quality due to floods and increased rainfall events.

Figure 11: Photos showing effects of drought on water sources and in rural area of Bunda. The projected future climate predict increased such drought evets and incidences of floods at the same time. The proposed design for interventions under output 1.1 considers well all these climate scenarios.

The analysis of climate indices was able to inform, the investment proposed under output 1.1 for rehabilitation and constructions of all systems. The proposed new and rehabilitation of the old system is now designed by integrating all necessary measures of social and environmental/climate factors. As opposed to the old design, the new water supply infrastructures in the project are designed to withstand the observed and projected negative climate change impacts such as particularly floods and drought events and fluctuation of water levels in the lake due to excessive rains and drought episodes. The The identified interventions under this output, target to strengthen control measures at the source as well as to the distribution system so that the infrastructures could withstand any threats likely to be presented by the climate change such as floods and drought. The siting of the submersed pumps are informed by water balance models, pipes in the distribution networks are designed to be strengthened to withstand stream run-off and floods, were networks cross such streams, strong dyke/water barrier will be constructed to protect the pump house at Kasahunga with the any future rise of water levels. This is vital for sustainability aspects. Therefore, all constructions activities will be designed built in accordance to the standard guideline for the preparation of Water Safety Plan – Resilient to Climate Change for Rural Water Supply Services (WSP-RCC-RWS) in the United Republic of Tanzania, prepared in 2015 by the Ministry of Water. The WSP-RCC-RWS requires designs for rural water supply to consider climate indices such as drought, floods, temperatures and rainfall trends, wind behaviors and climate related diseases such as water borne diseases. Thus, the proposed project considered key climate indices to address water scarcity due to prolonged drought and prevent water borne diseases through supplying treated water for domestic uses. CBWSOs through, supervision will develop the specific monitoring plan for compliance to WSP-RCC-RWS of the improved water supply system.

Figure 12: Proposed rehabilitation of water sources and pump house at Isanju, Iramba ward to pump water from Lake Victoria for up-country villages (Namhura, Mwiruruma, Mumaguma, Sikiro, Chingulubhila, Karukekere and Mukanda villages)

Figure 13: Proposed rehabilitation of water sources and pump house at Kasahunga, Neruma ward to pump water from Lake Victoria for up-country villages (Haruzale, Kemkombyo/Neruma, Chamakapo, Nyamitwebili and Namibu villages)

The climate resilient rural water supply being proposed here will pump water from Lake Victoria as it is considered stable to climate shocks when compared to natural springs and seasonal rivers which dries in every dry season. Some bore holes will also be drilled in some selected water scarce villages located very far from the previous build water supply systems.

The indicative activities to be implemented under Output 1.1 are:

1.1.1 Rehabilitation of pump houses and installation of submersible water pump at Kasahunga, Mumagunga and Isanju water sources. *The rehabilitation and installation of submersible water pumps will support and create climate resilient water system for rural communities over 36,519 water users in 2021 to over 78,000 water users in 2050 by producing a total of* **3,179.6** *meter cubic per day for the coming 25 to 30 years*

1.1.2 Rehabilitation and improve water storage tanks at Isanju, Namhura, Mumagunga and Kasahunga villages and construct sump tank at Namhura village. Five water storage tanks will be improved through scrapping and plastering with water proof materials i.e FIT bond materials (internal and outside of the tank) to provide 2 ladder, man hole cover, buck meter 6",Sluice valve 6'' and fencing

1.1.3 Rehabilitate water network system (about 11.5 kilometers) in Iramba, Neruma, Namhura and Nyamihoro Wards covering Nyamitwebili, Neruma, ,Kasahunga, ,Namhura, Isanju and Mwiruruma villages and make them more climate resilient.

1.1.4 Extension of water network system (10.297 kilometers) for Kasahunga and Isanju water sources to cover drought prone communities of Mumagunga, Chamakapo and Mulanda villages in Namhura and Neruma Wards.

1.1.5 Drill four boreholes in drought prone villages (Namalebe – Nakatuba, Igundu Nasululi and Lagata) villages uncovered with water systems from Kasahunga and Iramba surface water sources and Install solar energy driven water pumps

1.1.6 Construct storage tanks and Water Kiosk/Network for the drilled boreholes

Output 1.2: Community Owned Water Supply Organization (COWSOs) established and their functional committee members trained on management, operational and maintenance in Bunda District.

This output is proposed to put good and sustainable institutional structure to manage community and village climate resilient water supply system in the project sites. The output suggests establishment of Community Owned Water Supply Organization (CBWSOss), which will be trained on group management and dynamics, maintenance and operations of the rural water systems. CBWSOss are being recognized by the new Water and sanitation Act No.5 of 2019 which established "Rural Water Supply and Sanitation Agency – RUWASA" with responsibility to manage rural water supply. Under this the new Water and sanitation Act, 2019, the Village water schemes are CBWSOs. These CBWSOs s are required to operate rural water supply in the communities in a professional way where technical managers and Accountants will be employed be employed and paid by the Government and will work with the community representatives (Village water Boards) to sustain the water services. These CBWSOs will be backstopped by RUWASA District Managers' Office in Bunda district for technical technical and management issues. All CBWSOss to be formed will be responsible to set water tarrifs, collect revenues from water

users, carry out maintenance of the water scheme, manage new connections to households and extension of water supply in collaboration with RUWASA District office. During planning CBWSOss member were involved in proposing location of water points. Formulation of financial and procurement systems in relation to CBWSOss will also be facilitated under this output. The indicative activities to be implemented under Output 1.3 are:

1.2.1 Establish and/or strengthen water governance structures/arrangements (CBWSOss by considering gender balance for selection of members of the management team) to better manage water source, equitable and gender sensitive water allocation for human and other uses, and revenue collection and develop by-laws for regulating effective use of water resources and protection of rural water infrastructures

1.2.2 Train selected members from CBWSOsOs on operation and maintenance of their climate resilient rural water supply schemes to ensure sustainability.

Like many places in the United Republic of Tanzania, rural areas water tariffs in Bunda is mostly priced at US$ 0.02 per 20 litres at water point and for the metered house connections charges at US $ 0.65 per $1m^3$ of water (1,000litres). The charged tariff is meant to carter for operational cost including electrical bills. Diesel run water project in rural areas of the United Republic of Tanzania has relatively higher prices of US $ 0.04 per 20 litres while house connections is charged at US $ 1.08 per $1m^3$ (1,000 litres). These tariffs were set to meet operational and Maintenance (O&M) costs which including electricity/diesel, labour, general scheme repairs and allowances for scheme attendants. Thus, this project is designed with consensus from village communities, who are water users, to charge US $ 0.02 per 20 litres at water point and for the metered house connections at US $ 0.65 per $1m^3$ of water (1,000litres) as rehabilitation will enhance more connections and improve water availability. CBWSOss and RUWASA will ensure water quality be maintained through providing treatment system/chlorine dosage, and water samples will be taken to be tested in water laboratory, available in Musoma Municipality after every three months. Test results of water samples will be communicated to Water Users, District Authorities and general public in the villages by publishing results in public institutions such as primary and secondary schools, church premises and CBWSOs offices.

However, for every water scheme the CBWSOss and village identified homes of elders and disabled including in HIV & orphans who are unable to afford the set water tariffs, COWSOs will ensure provision of free water with volume of 100 litres per day per person. The proposed project will benefit 36,218 men and women at the beginning including 51 HIV/AIDS, 200 orphans and at more than 78,000 people later by 2050.

Component 2: Improving agricultural productivity, livelihood and enhancing agro-ecosystem resilience through Climate Smart EVA practices

Outcome 2: Improved agricultural productivity, livelihood and agro-ecosystem resilience through Climate Smart EVA practices in selected village communities of Bunda District

Output 2.1 Climate Smart EVA practices to improve food security through small scale and micro-irrigation schemes enhanced in selected villages of Bunda district

The agricultural sector in Bunda district and Tanzania at large is facing many challenges including poor farming practices and reliance on erratic rainfall patterns. Climate change and variability has exacerbated these challenges rendering the agriculture sector more vulnerable thus heightened food insecurity in the district. Some of climate change impacts affecting agriculture include droughts, decline an unpredictable in rainfall patterns, increased crop pests and diseases among others. The selected sites experience prolonged droughts and erratic rainfall resulting in serious crop failures. This makes individuals in these areas more vulnerable to food insecurity, and hence, less resilient to climate change. To enhance the viability and success of food production, the component and the output will promote climate sensitive-irrigation system in selected areas based on the existing traditional structures, previous irrigation activities and introducing new ones. All design of small-scale irrigation schemes will follow measures identified in the Agriculture Climate Resilience Plan 2014-2019 and will be in accordance to the National Irrigation Act, 2013 and the National Environmental Management Act, 2004. Therefore, this output intends to increase resilience of farmers to climate change by improving infrastructures, crop diversification, innovations and production by enhancing small and micro irrigation schemes in the selected villages. The details of the selected sites will be provided during development of the full proposal. The indicative activities to be implemented under Output 2.1 are:

2.2.1 Construct and establish drip irrigation structures/facilities Poly/sim tanks, PVCs, solar pumps and net houses) for intensified horticultural crops and relevant food crops at Mchingondo (Buguma) and Mumagunga villages of Bunda District Council.

2.2.2 Construct and establish irrigation structures/facilities of (water tank, PVCs, canals, motorized pump, and electrical transformer) for enhanced field crop (paddy) production at Mchigondo (Buguma) village of Bunda District Council.

2.2.3 Facilitate construction of two post-harvest management centers/warehouses for paddy and sunflower at Mchigondo (Buguma) and Kasuguti villages of Bunda District Council using force account modality.

2.2.4 Facilitate increased use of EVA practices, drought tolerant and early maturing crops (Cassava and Sunflower) by farmers from Namhula, Mumagunga, Kasuguti,Butimba, Neruma, Chitengule, Nakatuba, Namalebe, Buguma and Igundu villages of Bunda District Council.

2.2.5 Facilitate availability of crop value addition technologies (modern paddy hulling machine, sunflower seed pressing & oil refinery machine, cassava graters and horticultural drying micro technologies) for the farmer groups particularly for Mchingondo, Mumagunga and Kasuguti in Bunda District Council.

2.2.6 Capacity Building to farmers through training programs on good agronomic practices through farmers field schools, Female Farmers Field Schools, Demo plots, Agroforestry

of the selected crops (Cassava, sweet potatoes, paddy, sunflower, horticultural crops, agroforestry crops), operations and maintenance of the constructed/installed irrigation facilities, crop post-harvest management practices and value addition.

2.2.7 Facilitate improved local chicken keeping practices for Neruma, Mumagunga, Chingulubhila and Namhura Villages as potential enterprises to generate income and building resilience for the poor households and women groups

Component 3: Promoting paradigm shift of small scale fishers for sustainable income and climate resilience livelihood through fish farming innovations in selected villages of Bunda District

Outcome 3: Traditional fishing practices of small scale fishers transformed and fishers' income improved through climate sensitive aquaculture innovations in selected fishing communities of Bunda District

Output 3.1: Traditional fishing practices transformed for improved climate livelihood and sustainable income generating activities resilient in selected villages of Bunda District.

The decrease in wild fish catches in Lake Victoria were reported as early as 1970s. The records show that, number of native fish species has disappeared or have decreased to very low levels and the lake's ecosystem and food web also have changed and indeed are still in the process of changing, thus affecting the fisheries and the lake resources in general. The low seasonal rainfall, prolonged drought, dry weather and pollution along lakes contributes much on stock decrease while clearing of the peripheral wetlands, which served as fish nursery grounds are seriously affecting the fisheries and the lake resources in general. The decline in fish stock around Bunda areas as part of the Lake Victoria is projected to intensify by the current and future climate trajectories. It is apparent that poor and susceptible rural and small scale fishing communities in Bunda are even forced deeper into poverty and face further livelihood problems, predominantly driven by climate change. There have always been dry and wet seasons in the District with the general declining rainfall trend and with high magnitude effects on fish abundance and availability in-terms of catch. Small fishers have managed to deal with seasonal variations; however rainfall fluctuation has been a continuous stressing factor and an important reason for the low overall fish catches linked to market failures, high poverty rates and poor standard of living among small scale fishers.

In order to ensure that small scale fishers and vulnerable fishing communities and their fishery systems are climate resilient in the District, this output and component 3, proposes the following indicative activities.

3.1.1 Construction of 10 earthen ponds sized 20 x 40 Meters for vulnerable small scale fishing communities (Women and youth groups inclusively) at Buguma and Isanju villages

3.1.2 Introduction of an effective and efficient fish culture techniques using Tilapia cages by Establishing 10 Cages (Sized 5x5x2.5m. each) for vulnerable small scale fishing communities (Women and Youth groups) at Buguma and Isanju villages

3.1.3 Procure and introduce 107,000 fingerlings in 10 ponds and 20 cages

3.1.4 Purchase two Wooden Outboard Engine Boats for the farmers at both Buguma and Isanju Villages

3.1.5 Purchase of Feed for pre-nursery, Nursery, Grow outs/Brooders and Hatchery feeders

3.1.6 Train community on Fish culture Techniques and fishing skills at Cage sites in Lake Victoria

3.1.7 Facilitate establishment of one fish hatchery for tilapia species at Buguma village

3.1.8 Facilitate construction of a two room building for feed preparation for the established fish hatchery, purchase and enable installation of a pelletizer and Feed mixing machine at Buguma village

3.1.9 Facilitate introduction of modern techniques for improved fish feeds formulation through use of powder and pallets to promote sustainability

3.1.10 Facilitate study Visit of selected fish farmers on Tilapia Cage farming in Kisumu-Kenya to appreciate livelihood transformation and available climate sensitive fish farming techniques in the region

3.1.11 Provide fish security management in ponds and Cages at Buguma and Isanju villages

Component 4: Improve ecological and environmental services and functions to sustain climate sensitive rural livelihoods in selected rural communities of Bunda District

Outcome 4: Improvement of ecological and environmental services functioning to sustain climate sensitive rural livelihoods in Bunda District

Output4.1: Integrated management of environmental and ecological systems to sustain climate sensitive rural livelihood and energy source diversification in selected villages of Bunda District implemented

The ongoing degradation of environmental and ecological systems coupled with climate change issues has reduced the coverage of forests and woodlands and the availability of associated goods including accelerating land degradation and water catchments in Bunda. Across the district, wetlands have been severely degraded as a result of inter alia: a) use of forestry as a source of energy b) intensive cultivation of crops such as sweet potatoes and horticultural crops; c) excavation of sand and clay for brickworks; and d) grazing activities. This component and the proposed output activities seek to establish and implement ecological restoration and rehabilitation plans and restoration activities of hills, observed bare land, mountainous and woodland systems. Figure 4 and Figure 5 indicates areas proposed for interventions under component 4. The villages detailed in the land cover maps (Figure 12 and 13) will be engaged for restoration and rehabilitation activities

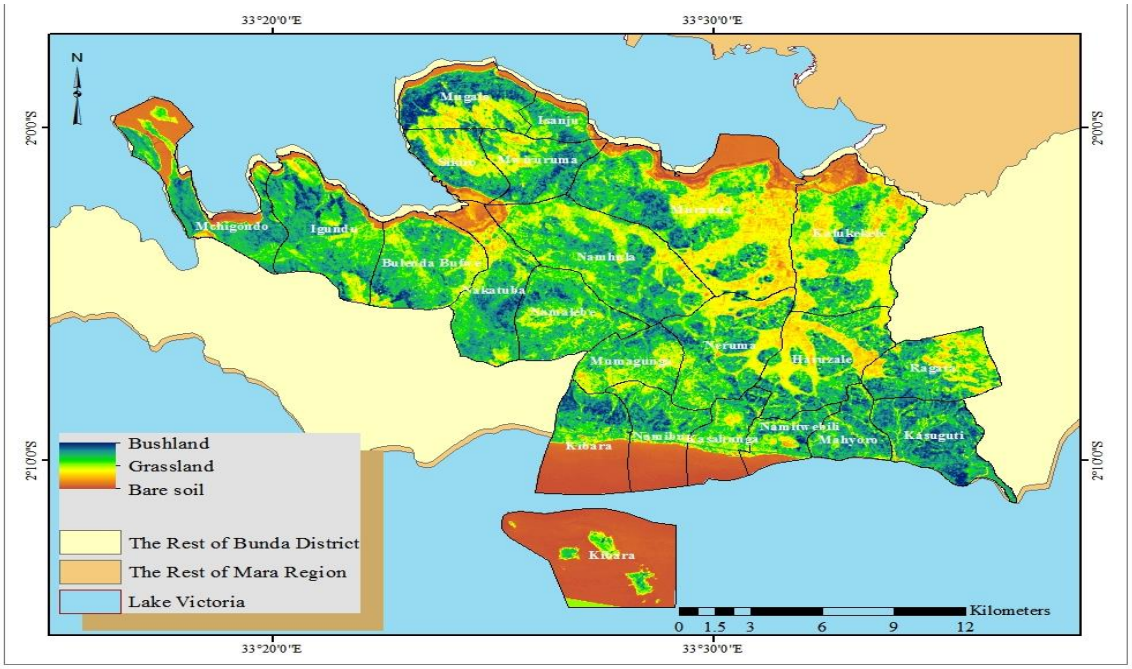


Figure 13: The map indicating areas for tree planting activities and restoration/rehabilitation of bare lands

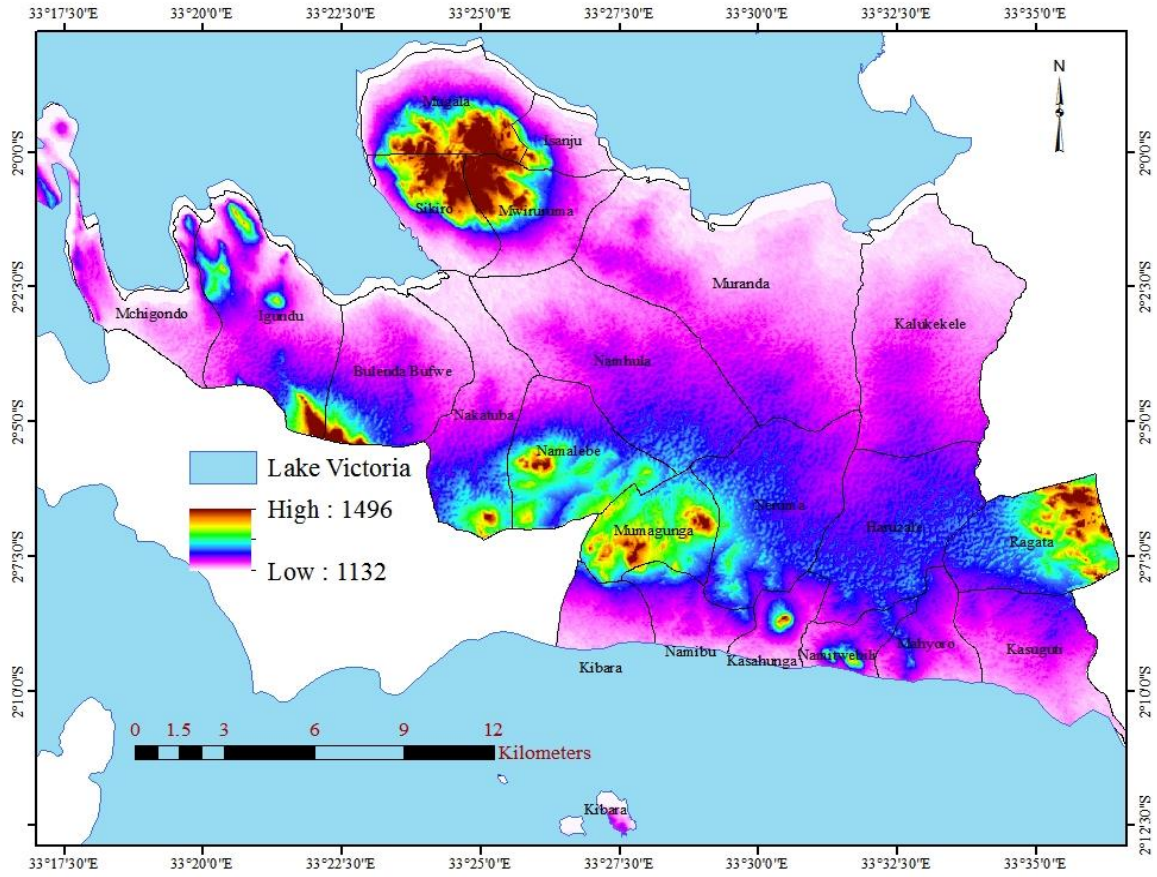


Figure 14: Hills and mountainous systems to be rehabilitated and restored

The output will implement Ecosystem-based Adaptation (EbA) activities such as Promote bee keeping activities in woodland land and mountainous systems and fruit plants as income generating activities. The indicative activities to be implemented under Output 4.1are:

4.1.1 Establish and implement ecological restoration and rehabilitation plans (hills, mountainous and woodland restored and conserved) in selected Wards (Iramba, Neruma, Namhura, Kitengule and Igundu wards)

4.1.2 Promote improved ecosystem based income generating activities at Mwiruruma, Isanju, Mumagunga, Kenkombyo, Buguma, Igundu, Namhura, Kasahunga, Sikiro, Nyamitwebili and Namalebe through (a) improved bee keeping activities in woodland, hills and mountainous systems and (b) fruit plants farming

4.1.3 Mobilize enclosure systems in degraded ecosystems to promote natural regeneration and recovery of ecological functions and explore the use of local/traditional institutions to strengthen management of sensitive ecological systems.

4.1.4 Engage farmers in tree planting on surrounding residential areas, along streets and roadsides and degraded landscapes and establish ecological schools (3 secondary and 3 primary schools) and villages (4 villages) in selected wards of Bunda district.

Component 5: Strengthening institutional capacity and knowledge management on climate change adaptation

Outcome 5: Strengthened institutional capacity to reduce risks associated with climate-induced Socio-economic losses and livelihood failures in Bunda district

Output 5.1: Capacity of the district and communities in Bunda is strengthened to respond to extreme weather events

The outcome and output activities of this component are designed to strengthen the foundational capacities required by the implementers by improving their absorption of new measures. This will support the communities to continue implementing measures that are necessary for success of resilience capacity building and for the ongoing replication of adaptation strategies in the district; hence this component, when implemented is expected to make a lasting contribution to the sustainability of all climate change adaptation measures in the district and beyond. The output will facilitate integration of good adaptation practices into existing development planning at community levels, village and ward development plans. Enhancing knowledge management system and capacities for planning, coordination and implementation at the local level is critical to guarantee effective climate adaptation in the district.

The indicative activities to be implemented under Output 5.1are:

5.1.1 Facilitate training to government stakeholders, technical staffs, community groups and civil society in climate risk management and project measures for further scaling up

5.1.2 Communicate and share knowledge generated through project implementation in Bund district, National and International communities

5.1.3 Sharing project results and lessons learned

5.1.4 Facilitate provisional of project monitoring and evaluation activities

PART IIB. *Describe how the project / programme provides economic, social and environmental benefits, with particular reference to the most vulnerable communities, and vulnerable groups within communities, including gender considerations. Describe how the project / programme will avoid or mitigate negative impacts, in compliance with the* ***Environmental and Social Policy of the Adaptation Fund.*** *(Refer Annex I)*

Each of the project components will significantly contribute to economic, social and environmental development of selected vulnerable communities in Bunda. The interventions identified for implementation will improve adaptive capacity of the most vulnerable community members which will result in both environmental and economic gains. Through these economic gains, the project will also deliver significant social benefits.

i) Environmental benefits

This project will have environmental benefits, including contribution to climate change mitigation, biodiversity conservation and behavioral change. This project have special component on improving functions and services of ecological and environmental systems and it aims to increase availability of forest cover through trees planting by establishing community owned nurseries and invest in reforestation and restoration of degraded terrestrial systems including hills and mountains. A need for cooking fuel is a major cause of mass tree felling to produce firewood and charcoal. It will also introduce pilot installation of biogas digester which will reduce wood and wood product dependence.. Reversing the ongoing degradation of environmental and ecological systems and enhancing adaptation activities through EVA practices, is expected to contribute over 50% of forest regeneration and cover including woodlands and water resources availability, compared to the baseline scenario. The proposed restoration and tree planting activities under component will contribute to climate resilient of rural communities directly and indirectly through improved ecological functions and services such as weather amelioration, protect soils from erosion, control land degradation and as well as forest products. Promotion of planting activities for fruit plants and wood plants for timber including beekeeping activities in pilot villages may yield excellent reduction of income poverty and will contribute significantly to climate resilience of vulnerable communities specially women and girls. In addition, these activities will also play a pivotal role in mitigating some of the effects of anthropogenic climate change and will increase the ability of biotic communities and ecosystems to gradually adapt to climate change and other global changes. Under component 2 and 4, the project proposes to implement ecological restoration and rehabilitation plans and restoration activities of hills, mountainous and land cover systems. Restoration and rehabilitation activities will be conducted in Iramba, Neruma and Igundu wards, which are the already known and prioritized by the district council as the most degraded hills and mountainous ecological systems. However, this project will facilitate establishment and implementation of comprehensive district ecological restoration and rehabilitation plan to accelerate the scaling up of environmental benefits to other areas in the district. Overall environmental benefits of implementing the project will therefore be over 50% from the current baseline data and it is sustainable, it can be going beyond the project and district borders.

ii) Economic benefits

The project components will ensure sustainable utilization of the natural resources for the communities' development of the district. Thus, contributing to the economy, social and environment of Bunda district. The suggested interventions strategies are for improving adaptive capacity of most vulnerable disadvantaged community members such as women in order to provide them with economic gains. In particular, the activities outlined in each output of the component on enhancing climate resilience agricultural, fishery, and livestock production systems to improve food security among selected most vulnerable communities will benefit them as follows: The project will lead to increased agriculture and livestock production and move vulnerable communities beyond subsistence farming to selling excess crops and stock for income. This project will also aim at building on impressive gains from agriculture, fishery and livestock production by organising the communities into sustainable marketing and credit cooperatives known as SACCOs. This is because the livelihoods of smallholder farmers are often constrained by poor access to markets and limited entrepreneurial skills, which hinders the economic development by limiting the economic base of the most vulnerable communities. The business cooperative approach has proven in various parts of the country to be the strongest driver of income

generation. By increasing the scale of their combined outputs, the social-cooperative model will maximize their bargaining power and gain better access to markets and credit. The cooperative will also benefit their members through skills training in agricultural techniques and business practices.

iii) Social benefits

With improved economic and generally livelihood activities, the interventions are expected to provide social solution to vulnerable community members and most disadvantaged groups. The social benefits from this project are multifold, mostly related to economic empowerment. All components offer social benefits to marginalize and poor vulnerable rural communities including Women and school girls and youth. The project inspires to improve water systems and food security, thus solving existing social conflicts at household levels due to water scarcity, famine and food insecurity. School dropout will also be solved as well including improving sanitation issues at household and public institutions. The observed malnutrition challenges will also be tackled through various output activities of this project especially activities at component 2, 3 and 4. Protein availability will be also enhanced as well. Families and communities will be better able to invest in their own healthcare and education for their children as most of interventions will improve social livelihood systems in the project areas.

PART IIC. *Describe or provide an analysis of the cost-effectiveness of the proposed project / programme.*

a) Cost effectiveness from a technical perspective

The project aims to enhance climate resilience and adaptive capacity of rural communities in Bunda district under significant water scarcity, food shortage status, poor income and livelihood failure. These have led to communities suffering myriad climate shocks and bad weather events like drought and dry spells. This project focuses on reducing their vulnerability to seasonal and long-term weather and climate variation, through implementation of concrete climate resilient activities and boost rural water supply systems, crop and fishery productions and alternative income generation, supporting livelihood diversification and capacity building to scale up successful climate adaptation actions. This contrasts with the current approach to climate related risk management and poverty reduction projects in Bunda District and in the United Republic of Tanzania, which are largely reactive, based on time events and top down approach. Interventions has been focusing on costly responses, which are in most cases not sustainable. Investment in improved and integrated community-based and ecosystem-based adaptation as applied to this project is viewed to be cost-effective, and provides a longer-term solution to managing climate related effects as opposed to the costly traditional measures in the district. For instance, the previous water supply system built in 1970s was not sustainable and failed due to limited involvement of local communities and top down management approach. In contrast, this project proposes cost effective, gender based - climate resilient-rural water supply in Bunda district council, through creation of Community Owned Water Supply Organizations (CBWSOss), implemented through Force Account and Self-reliance (Ujamaa) Modalities. This create the sense of in-kind cost contribution by the community and project ownership, lasting project impacts and outcomes for improved community's livelihood systems and increased adaptive capacity. The cost-effectiveness of the project's on-the-ground adaptation interventions proposed under Component 1, 2, 3 and 3) will be greatly enhanced by the principles of local peoples' empowerment through engagement of vulnerable and grassroots communities such as socio-economic groups (women groups, farmer groups, small scale fishers, credit and savings (VIKOBA), livestock keepers) and village governments. Analysis done by the study on Economics of Climate Change in the United Republic of Tanzania (2011), highlighted that, empowerment and strong engagement of local people/communities who actually feel the pinch of climate change effects to implement adaptation measures always results in a greater ratio of benefit: cost compared to the costly tradition top-down implementation approaches. For example, preliminary socio-economic analysis on the proposed project activities (rural water supply, fish farming, small scale irrigation, bee keeping, restoration and rehabilitation of ecosystems), when implemented using Force Account and Self-reliance (Ujamaa) Modalities estimate internal rates of return of 35–70% and higher benefit: cost ratios of up to 30:1200 for the actions under components 1, 2, 3 and 4. In addition, this project will promote collective actions and opportunities for adaptation best practices, knowledge-

sharing and communicating project outputs among departments, across sectors and village communities in the district. In this way, the project's investment will accrue a disproportionately large benefit for life and livelihood quality improvement under the current and the expected future climate change effects, vis-à-vis the traditional and existing way of implementing development/adaptation projects using un-integrated and isolated projects in the district.

Table 4: The cost of each component against the number of beneficiaries and alternatives

Project component	***Cost in US$ Interventions***	**Beneficiaries and alternatives**
Component 1: Enhancing Climate resilience through water supply system of the drought prone agro-pastoral communities	501,360.00	Improving the existing rural water supply system, which is not in use over the past 25 years and make the system more resilient to climate effects will benefits approximately more than over 36,519 people in 2021 to 71,655 people in 2050 by producing a total of 1,694.8 meter cubic per day in the in 25 to 30 years. The investment and cost for rehabilitation of the tanks, improving the old network system and extending new networks to rural villages is viewed to be more cost effect, as force account implementation modality will be used. Alternative standard contractual works for constructions of water storage tanks, distribution network systems, community water points/ community water Kiosks and constructions of cattle troughs for livestock water system would be costly for laborers and salaries. Investing to improve supplementary water sources, traditionally used by community members could not result cost effectiveness and viable solution. These are traditional wells and seasonal streams which dry few days after the rain season, mainly from July – November. They provide contaminated water with biological pathogens, thus exposing people to water borne diseases (e.g. cholera, dysentery), which occurs almost every year.

Project component	*Cost in US$ Interventions*	**Beneficiaries and alternatives**
Component 2: Improving agricultural productivity, livelihood and enhancing agro-ecosystem resilience through Climate Smart EVA practices	330,250.00	The proposed interventions intend to increase resilience of farmers and vulnerable communities to effects of climate change and variability by improving farming and livelihood systems in selected villages. A major part of this component will enhance best agricultural –climate smart practices to improve food security, enhance adaptive capacity and value-chain of agro-pastoral products-on farm and off farm and diversify livelihoods of vulnerable groups (women, youth and school children). Benefit for 24, 000 rural farmers in the district through establishment drought resistant crops, capacity building on farm management, increased use of climate smart crops and promoting intercropping with drought resistant varieties like sorghum, sunflower, simsim, pigeon peas, cassava, cereals, sweet potatoes and early maturing crops to increase resilience farming systems, improve knowledge on best farming practices and transform traditional farming system through solid farmers tailored trainings using Farmer Field School Approach, stablish women based gardens and poultry houses and trainings on FFFS (Female Farmer Field School) – provision of seeds and tools to diversity gender based livelihood systems including drip irrigation will yield a lot of benefits compared to 420, 000 invested as compared to the cost of doing nothing and continue to support communities with food aid during bad weather seasons and droughts. Continue to keep the traditional farming system without support for alternative livelihoods and build climate resilience of farmers and livestock keepers by improving farming and livestock keeping systems. This option would lead to increased levels of poverty and vulnerability to climate change. Many vulnerable people, particularly women and youth will continue to witness increased food insecurity, malnutrition including deaths This is because, over the past three decades rain seasons have varied and shifted its trends such that droughts and dry spell periods are more common than wet spells. Without intervention individuals in these areas will continue to suffer the most and be more vulnerable to food insecurity.

Project component	*Cost in US$ Interventions*	**Beneficiaries and alternatives**
Component 3: Promoting paradigm shift of small scale fishers for sustainable income and climate resilience livelihood through fish farming innovations in selected villages of Bunda District	143,779.00	The proposed interventions under this component provide innovations to small scale fishers including women and your groups to build resilience livelihood systems through modern aquaculture techniques. The interventions will also provide excellent alternative income generating options, contributing to reduction of income poverty especially women and girls. Option of not supporting the intervention, will be costly as poor and susceptible rural and small scale fishing communities will even be forced deeper into poverty and face further livelihood problems, predominantly driven by climate change.
Component 4: Improve ecological and environmental services and functions to sustain climate sensitive rural livelihoods in selected rural communities of Bunda District	149,256.00	The proposed interventions under this component provide innovations which promote conservation measures linked to economic benefits to the people for tackling climate change effects. Interventions will contribute to multiple adaptation benefits and climate resilience of rural communities directly and indirectly through values and products of the improved ecological functions and services, reverse land degradation, improved soil fertility and crop yields, weather amelioration and control stronger winds and dusts in the restored sites. The interventions will also provide excellent alternative income generating options, contributing to reduction of income poverty especially women and girls through selling bee keeping products, timber, various fruits obtained from fruit plants and selling forest products obtained from woodlots (ngitili) and folders. Promotion of tree planting (trees with both environmental and socio economic values in mid-and long-term such as fruit plants and wood plants for timber) activities in residential areas, along streets and roadsides and in the degraded areas will stimulate sustainable income generating activities which are stable to climate effects. Establishment of ecological restoration and rehabilitation in pilot village lands and promote bee-keeping activities in the restored ecosystems, will be cost effected as these areas will be used for income generation by all groups. It is expected that, over 60,000, people will directly befits from interventions under component 4 of this project. However, it is expected that benefits from ecological and rehabilitation including bee keeping and tree planting activities will go far beyond the project areas and the district. Without tree planting (trees with both environmental and socio-economic values in mid-and long-term such as fruit plants and wood plants for timber) activities in residential areas, along streets and roadsides and in the degraded areas, future cost due to continued environmental and livelihood failure will be high and unaffordable to the district and village governments. This option, would be translated into leaving marginalized communities especially women and school children without sustainable income generating activities which are stable to climate effects.

Project component	*Cost in US$ Interventions*	**Beneficiaries and alternatives**
Component 5: Strengthening institutional capacity and knowledge management on climate change adaptation	48,355.00	This component builds the capacity of local institutions to plan and implement climate resilient interventions and scale up effective adaptation strategies in other villages beyond the project sites. Component 5 activities of this project will facilitate capacity building of district and village management officers, rural extension workers in the villages, famer groups and individuals, women and youth groups through workshops and trainings that will be provided through the project's established demonstration sites, Farmer Field Schools (FFS), Female Farmer Field School (FFFS), Eco-schools. This component will contribute to build sustainability of the projects' outcomes and impacts. It will also share project results and lessons learned. Over 90 people from communities' groups and stakeholders, district and project staff will be trained. Project results shared through mass media to more than 10 million people in the Lake Victoria zone areas and the nation at large through various social media and other communication means. Awareness raising and training will increase understanding of climate threats and how to manage these risks by communities in the villages and promote learning and cooperation among different sectors and communities. This will contribute to minimising damage and losses associated with hazard events through increased awareness and capacity at grass root levels. The training of farmers, women groups, CBWSOs Members, fisher forks and government officials at village and district level in addressing climate change will help to mainstream climate change and enable them to incorporate adaptation planning into future activities and will enable the replication of activities in other parts of Mara region and in the United Republic of Tanzania.

b) Cost effectiveness from a project management perspective

The cost effectives of this project is also built in its implementation arrangements and proposed interventions to tackle the specific climate driven challenges at grassroots and local levels with adverse impacts on livelihood systems, disruption of ecosystem and high incidence of poverty (especially income poverty). The Project Implementation Unit (PIU) will be established and hosted at the Headquarters of Bunda District Council. Project personnel will be recruited from the existing experienced and qualified staff of the district council. In this way, no new recruited is needed as project personnel will be remunerated by top-ups, no other personal benefits like health insurances, termination benefits, staff resettlement allowances as well as costs for utilities and bills. This will allow effective and the best use of financial resources and will reduce project management costs, including creating perfect environmental for the project team to make closer management and monitoring of project activities. The implementation approach of this project is considered to be among the best approach in the least developed countries as will use the Force Account Modality (FAM). Force Account Modality allow communities in all project sites to volunteer and to perform various earth work activities without any costs, provide construction materials available in their local areas, offers free local

expertise/knowledge including participating in tree planting and ecological restorations without monetary rewards. Employing new staffs, for example, the project coordinator and 1 project staff in each sector would have costed the project about US$ 160,000 for salaries in three years compared to less than US$ 35,000 for top-up allowances planned for the project team. The recruitment and participation of community volunteers will build local capacity, utilize local knowledge and deliver expected project outputs for a relatively small investment as well as enhance the sustainability of project interventions. Force Account Modality is geared to ensure that, most of resources go straight to the beneficiaries. Force Account Modality including Project Management Unit set-up and staff recruitment modalities are expected to leverage the project cost by almost 40%. These measures are the most cost effective and are also expected to raise project value/resources by almost over 40% on the ground above the requested AF resources. The implementation modalities proposed by this project are heavily embedded into the District's and Tanzania's Ujamaa (self-reliance) culture for poverty reduction and other livelihood improvement projects and programs. The cost-effectiveness of the project's on-the-ground adaptation interventions (components 1-4) will also be greatly enhanced by taking into account of the on-going interventions in Bunda district council and in the central government ministries, with a view to complement those investments by creating synergies. For instance, activities under Component 4, will complement and leverage national efforts for tree planning campaigns and presidential award for best district and villages for tree planting. The components will also complement the on-going efforts in the district to combat deforestation and climate change effects by using Ecosystem-based-Adaptation (EbA) through ecological restoration activities, tree planting and bee keeping activities. Being executed by the District Council, the project will also link with interventions related to agriculture, aquaculture and rural water supply. For instance, the project will link with Farmer Field Schools supported by the district budget, credit and savings groups existing in almost all villages in Bunda districts, Women Based Groups as well as fisheries and beach management rural groups to achieve expected outputs under Components 1, 2, 3 and 4. Therefore, the cost effectiveness of this project is clear and if implemented will provide the groundwork and build block for the Government of the United Republic of Tanzania to replicate and enhance interventions in other districts and regions.

c) Cost effectiveness from project sustainability perspectives

The investment underlying the proposed project entails a unique, new approach towards tackling the increasing climate change impacts in the vulnerable rural areas as the previous approaches have yet to delivered more benefit to people. As a result, the paradox of poverty and climate change amid all the advantages led to a number of initiatives being undertaken to improve the situation in the District. The project will be implemented through the existing stable district institutions and village government structures by implementing their respective activities. Conduct technical Trainings of Trainers (TOTs) on maintenance and operation to selected communities' members to ensure operations and maintenance of infrastructures beyond the project life lime. For instance, activities under Component 1 will also include Training of selected members of Water Users Associations (COWSOs) on operation and maintenance, revenue collections, group dynamics, accounting and financial management to ensure sustainability of the climate rural water to be established by the project. Activities under Component 2 and 5 will involve training of selected farmers on Operation and Maintenance (O&M) of improved irrigation facilities at Mchingondo/Buguma village and drip irrigation schemes at Buguma and Mumagunga Villages. Equally, selected fish farmers and bee keepers will be trained on their maintenance and operation issues. For instance, it is designed here that, no behalves will be purchased for villagers, rather experts and necessary workshop tools and equipment will be purchased and villagers will be equipped practical knowledge on modern behalves and honey processing techniques, including maintenance and operations. Activities under component 4 will also promote sustainable ecological and environmental management including tree planting. This will promote more cost effective and sustainable multi-purpose climate adaptation actions which increase climate resilience for vulnerable and marginalized people in rural areas when compared to the existing and traditional initiatives in the district. The investment matches with Government Priorities set out in key national policy documents including the Vision 2025, the Second Five Years Development Plan, Strategic Plan of Bunda District Council and the NAPA including the NDCs. Alignment with national priorities ensures Government commitment to project objectives during and beyond implementation. The

operation of the project through the District Authority Headquarters will also ensure Sectors at the district and village level play a central role in terms of project implementation and ensuring sustainability through the integration of adaptation plans into District Performance Contracts to institutionalize and sustain community interventions.

PART IID: *Describe how the project / programme is consistent with national or sub-national sustainable development strategies, including, where appropriate, national or sub- national development plans, poverty reduction strategies, national communications, or national adaptation programs of action, or other relevant instruments, where they exist.*

The proposed project is and will be implemented in line and consistent with various development policies, strategies and plans of the United Republic of Tanzania including the Development Vision 2025, Tanzania's second Five year development plan (2016/2021), the Intended Nationally Determined Contributions (INDCs, 2014), the National Climate Change Strategy (URT, 2012), the Tanzania National Adaptation Programme of Action (NAPA, 2007), the First and the Second national Communication to the UNFCCC, the Roadmap of the National Adaptation Plan, and the Bunda District Strategic Plan (2016/2021) which recognizes the growing negative impacts of climate change and sets initiatives of tackling its effects. In line with Sustainable Development Goals to take urgent action to combat climate change and its impacts, it is necessary to develop the project with concrete actions in solving such problems for Bunda district which are not necessarily similar to other parts of the Tanzania. Selected national policies, plans, strategies and development goals with which the project is aligned are presented in the Table 5 below. Alignment is indicated at component level.

Table 5: Alignment of the proposed project with national policies, plans, strategies and development strategies

S/No	Selected national policies, plans, strategies and development
1	***National Adaptation Programmes of Action (NAPA, 2007)*** Components 1, 2, 3, 4 and 6 of the project are aligned with NAPA Priorities 1, 2 and 3, Priority 1, focuses on improving food security in drought prone areas. The priority 3, focuses on improving water availability to drought-stricken communities, while the Priority 3 focuses on climate change adaptation through participatory reforestation and includes awareness on climate change adaptation through community participatory efforts.
2	***National Development Vision 2025*** The objective of the Vision is to build a globally-competitive and resilient economy and to increase the quality of life for all citizens. The Vision proposes transforming Tanzania from a LDC to a middle-income country by 2025. The vision will create the enabling environment for socio-economic development in Tanzania. The identified objectives of the Vision include tacking environmental and climate change challenges. Therefore, through its six Components, the interventions of the project are therefore strongly aligned with the Vision.
3	***National Strategy for Growth and Reduction of Poverty (2011)*** The objective of the National Strategy for Growth and Reduction of Poverty is to increase the economic growth and productivity to reduce poverty through the: i) efficient use and development of factors of production (including human capital); and ii) strengthening and establishing well-functioning institutions and markets. The National Strategy for Growth and Reduction of Poverty also recognizes that to promote food and nutrition security and water availability in Tanzania, water resources, fishery, crops and livestock need to be made resilient to the future effects of climate change. The project is therefore aligned with the National Strategy for Growth and Reduction of Poverty through the interventions of Components 1, 2, 3, 4 and 5.

S/No	Selected national policies, plans, strategies and development
4	***Country Strategy Paper (2011-2015)*** The Country Strategy Paper promotes the creation of an enabling environment to realise the 2025 national development vision. In collaboration with the Germany Government, the United Republic of Tanzania is developing a National Climate Change Adaptation Plan (NAP) to address the effects of climate change in the country. Therefore, through Components 1, 2, 3, 4 and 5 the project is aligned with Country Strategy Paper.
5	***National Climate Change Strategy 2012*** The goal of the Strategy is to enable Tanzania to effectively adapt to climate change and participate in global efforts to mitigate climate change with a view to achieving sustainable development. The strategy focuses on reduce vulnerability and enhance resilience to the impacts of climate change. The specific objectives of the Strategy are:- To enhance resilience of ecosystems to the challenges posed by climate change; To enable accessibility and utilization of the available climate change opportunities through implementation; To enhance participation in climate change mitigation activities that lead to sustainable development; To enhance public awareness on climate change; To enhance information management on climate change; and To put in place a better institutional arrangement to adequately address climate change. Components 1, 2, 3, 4 and 6 of this project are strongly in align with almost all objectives of the National Climate Change Strategy 2012.
6	***The Sustainable Development Goals (SDGs)*** take a broad approach on environmental sustainability and have been adopted and implemented in the United Republic of Tanzania and in Bunda District. This project will contribute to the following SDGs; SDG 5 – Achieve gender equality and empower all women and girls, by promoting gender equity throughout the project and targeting women in specific project activities. SDG 6 – Ensure availability and sustainable management of water and sanitation for all, by implementing interventions under Component 1. SDG 13 – Take urgent action to combat climate change and its impacts, all components are in line with the SDC 13. SDG 15 – Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss through the implementation of Components 2 and 4 and EVA practices
7	The project also is in coherence with **The 4th East African Community Development Strategy (EACDS), which** outlines broad strategic goals of the EAC as well as specific targets to promote infrastructure development and economic growth, including emphasis on reducing or mitigating the negative effects of climate change on agriculture and food security.

S/No	Selected national policies, plans, strategies and development
8	**National water policy, 2002 and the National Water Resources Management Act,2009** The national water policy, 2002 recognizes that, fresh water is basic natural resources to sustain both animal and human life, and that reliable and safe drinking water are fundamental needs for improved social livelihoods and life quality. The proposed project activities under Component 1 and 2 will largely be guided by this policy. Also the project activities under Component 1, 2 and 3 also are in coherence with the objectives of The national Water Resources Management Act,2009 specifically a) promoting equitable access to water and the principle that water is essential for life and that safe drinking water is a basic human right; (c) promoting the efficient, sustainable and beneficial use of water in the public interest; (d) facilitating social economic development; (e) promoting stakeholders' involvement in water resources management at all levels especially by ensuring decentralization to the lowest possible level of government, consistent with available capacity at such level; (1) protecting biological diversity especially the aquatic ecosystems; (g) providing for systems for managing the growing demand for water use through integrated planning and management of surface and groundwater resources, in ways which incorporate economic, environmental and social dimensions in the planning process; and (h) preventing and controlling pollution and degradation of water resources
9	**The National Water Supply and Sanitation Act, 2009** The objective of this Act is to promote and ensure the right every person in Tanzania to have access to efficient, effective sustainable water supply and sanitation services for all by taking into account the following fundamental principles relevant to activities under component1: b) which call delegation of management functions of water supply and sanitation services to the lowest appropriate levels taking into account the local government administrative systems; c) ensuring that water supply and sanitation authorities are financially and administratively autonomous and sustainable d) transfer ownership of water supply schemes in rural areas to the respective communities and enabling beneficiaries and stakeholders to participate effectively in the management of community water supply schemes. Activities under Component 1 are in consistence with the overall objective of this act, and will be generally guided by the National Water Supply and Sanitation Act, 2009.
10	**The National Irrigation Policy, 2009 and the National Irrigation Act, 2013.** Irrigation activities proposed under Component 2 well linked to objectives of the National Irrigation Policy of 2009 and will be its implementation will be guided by the National IrrigationAct,2013
11	**Guidelines for the implementation of water safety plans - resilient to climate change for rural water supply services 2015** These Guidelines are designed to provide guidance to rural community on the preparation of Climate Resilient Water Safety Plans. Specifically, the Guidelines will aim to: Provide guidance to rural communities in the steps involved in preparation of Climate Resilient-Water Safety Plans (CR – WSP) for all COWSOs in the United Republic of Tanzania; Provide guidance on how COWSOs should integrate climate issues into CR – WSP; Provide guidance to COWSOs in the implementation of CR – WSP; and Provide quick reference for authorities, academicians and all stakeholders in issues related to CR – WSPs**.** They, put in place measures to address issues of water safety with consideration of the impacts of climate changes such as effects of droughts and floods or heavy rainfall. The Guidelines assist COWSOs to identify hazard, hazardous events and the associated risks at every stage of the rural water supply system and thereafter put in place respective control measures.

S/No	Selected national policies, plans, strategies and development
12	***Bunda District Strategic Plan (2017/2018-2021/2022)*** Among other issues, the Strategic Plan of Bunda District focuses on:-Improving Environmental Conservation, Natural Resources and Land Management for sustainable development; Enhancing, Sustaining and Effective Implementation of the National Anti-corruption strategy; Improving Access to Quality and Equitable Social services; Increasing in Quantity and Quality of social service and infrastructures such as Water systems; and Improve social welfare, gender, participation and community empowerment in the district. The project Components, 1, 2, 3, 4 and 5 are therefore linked to these objectives of the District Strategic Plan

PART IIE. *Describe how the project / programme meets relevant national technical standards, where applicable, such as standards for environmental assessment, building codes, etc., and complies with the* ***Environmental and Social Policy of the Adaptation Fund***

Aligned with the requirements of the 2013 Environment and Social Policy of the Adaptation Fund (see Section K), the implementation of this project will be governed by several national guidelines, policies and regulations including National Environmental Policy, 1997, National Water Policy, 2002, Forestry Policy 2002, the National Environmental Management Act 2004, Water Resource Management Act, 2009, National Agriculture Policy 2013, Livestock policy 2004, The National Gender Policy, 2002, Community Development Policy, 1996, The Supply and Sanitation Act, 2009, The HIV and AIDs (Prevention and Control) Act of 2008, Occupational Health and Safety Act, 2003, National Climate Change Strategy 2012, National Biodiversity Strategy and Action Plan (NBSAP) 2015-2020, Water Safety Plan –Resilient to Climate Change for Rural Water Supply Services (WSP-RCC-RWS) 2015, Environmental Impact Assessment (EIA) and Environmental Audit (EA) Regulation (2005) and Water Quality Management Standards Regulations 2007.

The National Environmental Management Act 2004 have provisions that protect and enhance the quality of natural and cultural environment of Tanzania for the benefit of both present and future generations, and assures all citizens a sound and safe environment adequate for their health and wellbeing. It is the overall guiding document on administration and management of environment matters and social safeguards. It provides for legal and institutional framework for sustainable management of environment in Tanzania. It outline principles for management, impact and risk assessment, prevention and control of pollution, waste management, environmental quality standards, public participation, compliance and enforcement. Sections 82(1) and 230(2) (h) and (q) of EMA Cap.191 0f 2004 EIA and AE Regulations, 2005 provide for the procedures to conduct EIA and Audit; and identifies/categorizes projects which are mandatory and non – mandatory to conduct projects environment. According to the National Environmental Management Act (2004) and the Environmental Impact Assessment (EIA) and Environmental Audit (EA) Regulation (2005) and Sectorial Regulations and Guidelines of the United Republic of Tanzania, this project do not fall within the First Category of projects that require full EIA, as the proposed interventions of the project possess no significant negative impacts on the environment and to the community. There is no activity under any component which require full EIA as magnitude of impacts are small and location of the interventions to do not require further assessments. However, Impact Assessment (EIA) and Environmental Audit (EA) Regulation (2005) will guide implementation of ESMP during executions of project activities under component 1 to component 4.

The National Water Resource Management Act, 2009, National Environmental Management Act 2004, National Water Quality Management Standards and Regulations, 2007 and Water Safety Plan – Resilient to Climate Change for Rural Water Supply Services (WSP-RCC-RWS) 2015, which provide for "Water Use Rights and Permit Standards". The project shall comply with the relevant sections of the Acts, Standards and regulations to ensure sustainable utilization and conservation of water with regards to water supply and micro-irrigation related activities under component 1 and 2. As water supply activities will largely be dominated with rehabilitation and expansion of network systems including localized boreholes, it is not expected that, water user permits shall be required to be reprocessed as was this was granted since 1970s. Possibly, project micro-irrigation-related activities may require some letters and permits for water users, but this will easily processed by the Bunda District Authority through the Water and Agriculture Department. Irrigation interventions in Tanzania are required to adhere to the National Irrigation Act, 2013 (No. 5 of 2013). The Act provides detailed standards and guidelines for farmers and block farming groups to form "Water Harvesting and Irrigation Associations" stressing the need for farmers to work together and manage water resources sustainably. The project will abide to these standards and guidelines, although the same provision does not apply to the small scale/micro-irrigation of the project activities. In addition, the agricultural activities will be guided and abide to the standards provided under the National Land Act, 2002 which recognises the tradition land tenure systems for the proposed agricultural activities.

The project will also abide to Forest Act, 2002 (Act No. 7 of 2002) as well and the Environmental management Act 2004 which provide guidance for reforestation, tree planting restoration, reclamation and rehabilitation of ecosystems and all activities that involve planting of trees and environmental conservation. The fisheries act 2010 which provides guidelines for sustainable fishing activities and aquaculture in Tanzania. The project shall embrace relevant sections of the Fisheries Act, 2010 that are in alignment with Adaptation Fund guidelines. The project shall apply the standards under the National Strategy for Growth and Poverty Reduction (MKUKUTA The NSGRP, 2008, Community Development Policy 1996, National Water Policy 2002and Cooperative Development Policy, 2002 for establishment of community cooperative societies commonly known as SACCOS and Community Water Users Organizations (COWSOs), their operational procedures and relevant gender policies, as well as other standards that protect women, the elderly, children and most vulnerable households. The project will also align with financial planning, management and audit guidelines of the United Republic of Tanzania.

In that way, the proposed project will be fulfilling vital national policies, plans, strategies and programmes set by the United Republic of Tanzania including plans and bylaws formulated by the District Council. All activities under each component will facilitate social security of the riparian communities and veracity of the environment. However, the executing entity, Bunda district council has adequately screened the project components and placed this project at B category under classification criteria of Environmental and Social Safeguard Policy of the Adaptation Fund. This is because there is no any component of this project which indicates any serious risk to the environment or social systems and on the public health. Nevertheless, a detailed environmental and social risk assessment was conducted, see Annex 4 for the summary of ESMP.

PART IIF. *Describe if there is duplication of project with other funding sources, if any.*

There is no any duplication of this project with other funding sources. This project will rather complement any efforts geared to foster adaptation actions in the United Republic of Tanzania, in the related thematic areas. Preliminary meetings and discussions with various stakeholders at district and national levels, confirm the existence of potential synergies of proposed activities with various national development and climate action, which have suffered absence of funds. The AF resources will therefore build on district's ongoing development programming as operationalized through its investment and operational budgets. Bunda district council, like any other Local government authorities in the United Republic of Tanzania, receives funding from the national government and ministries through core programmes as well as through more targeted projects (including donor-supported projects). The proposed project will build on core operational funding delivered to the district through the departments of Agriculture, planning, environment, forestry and bee keeping, livestock development, water resources and irrigation. For instance, this activities under Component 1, proposed to invest on climate rural water supply will use lessons from operations and management of old systems, which had a number of poor management approach such as higher water tariffs and deployment of diesel water pumps which appeared expensive in operations including being managed by the central government from Dar es Salaam about 1, 500 kilometer way. The previous investment plan had also inadequate information compared to the cheap and almost free traditional water sources which had existed those days in the area. This project avoid duplication of such problems/mistakes and suggest management structures which favors community themselves/will be managed by community with technical back-ups from RUWASA available in the district. Force Account Modality for executions of activities will be deployed for effective community engagement and ownership. This raises ownership of infrastructures and avoid vandalization infrastructures. Affordable tariffs and electric water pumps connected to national grid will promote sustainability and avoid obvious mistakes as occurred in the 1970s

Activities under component 2,3 and 4 avoid mistakes observed under HADO and HASHI programs, which were among top environmental and livelihood programs engineered by the Central Government to communities in 1970to 1990. However, this project uses good lessons learned under NAPA projects, and other adaptation projects, being implemented in the Country and in the region This project a well-informed by the on-going projects on climate change adaptation being implemented in Tanzania like; the GEF/IFAD project – "Reversing Land Degradation trends and increasing Food Security in degraded ecosystems of semi-arid areas of Tanzania" which is being implemented in Kondoa, Mkalama, Magu and Nzega districts in Tanzania main land; and Micheweni district in Zanzibar; The GEF/UNEP project – "Supporting the implementation of integrated ecosystem management approach for landscape restoration and biodiversity conservation in Tanzania", and the LDCF/UNEP project, "Ecosystem-Based Adaptation for Rural Resilience", currently being implemented in Kishapu, Mpwapwa, Simanjiro, Mvomelo districts of Tanzania main land and in Kaskazini A in Zanzibar. The Dryland Development Project (DDP) for mainland Tanzania under the lead of the Ministries of Agriculture, Fishery and Livestock Development and in collaboration with IFAD which work with livestock keepers, agro-pastoralists and other land users in Tabora, Shinyanga Ruvuma regions to support integrated dryland-based livelihoods including linkages to markets and income generation while providing ecologically sound strategies for resolving conflicts between farmers and pastoralists. Other project like the project funded by the African Development Bank (AfDB)- Institutional Support for Climate And Seasonal Weather Information for Adaptation Planning in Mwanga and Same districts, Northern Tanzania, had concrete adaptation intervention which used Force Account to deliver activities at local levels. Therefore, AF resources under this project are expected to build synergies on the ground particularly for component 1, 2, 3 and 4 with activities related livelihood improvements and ecological restorations, rather than duplication of resources. However, there is no geographical duplications with the sited donor funded project. There is no fund which has been allocated to implement this project, except this application to the Adaptation Fund. See Annex 5 for additional analysis for complementarity to avoid duplications with other funding sources.

PART IIG. *If applicable, describe the learning and knowledge management component to capture and disseminate lessons learned.*

The requested Adaptation Fund (AF) resources will be used to strengthen knowledge management frameworks at the district and zonal level in the Lake Zone of the United Republic of Tanzania. One of the key activities built into every component of the Project is that of climate change education and awareness raising. Building awareness on the value of preserving ecosystem services and reducing the impacts of climate change through participatory implementation and direct involvement of communities in the project activities. Methods such as community field days, community trainings, tour and visits and on farm/site demonstrations will be conducted in a participatory way. Participatory monitoring and evaluation (M&E) focusing on outcomes and learning parameters to allow stakeholders control over content and processes. This will help measure the effectiveness of the project, build ownership, and promote accountability at various levels. Also the proposed project has set of activities under Component 6 which specifically focuses on sharing project results and lessons learned and mainstreaming new approaches in local and district planning. The lessons will be disseminated through community group-to-community fora (cross visits, community meetings etc.), enterprise development meetings, participatory videos made by farmers/fishers/COWSOs to showcase local experiences, techniques and achievements, and directly transmit messages to decision makers and donors, project reports and briefing notes, a project website, as well as mass media outlets (newspapers, radio etc.) to promote a wider understanding of the issues and the secondary uptake of successful approaches.

PARTII H. *Describe the consultative process, including the list of stakeholders consulted, undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the* ***Environmental and Social Policy of the Adaptation Fund.***

a) Consultation done at the concept note phase

A range of stakeholders, particularly various experts from technical departments at the district council and in local communities/rural areas of the District, were consulted. At the phase of the concept note, the project formulation team, conducted a three intra - and inter-departmental meetings in the district with senior officials and technical experts to share and exchange views on the concept, and to jointly identify and align priorities for the development of the project idea and the full proposal to available plans of Bunda district council. The district chairman and council leadership and head of departments were also key in site selection of the project. For instance, in the preliminary field visits, the District Chairman, joined the designing team for conducting villages meetings in 12 villages involved in the project implementations as project sites.

Relevant meetings at the district council at preliminary and advanced stage of the project formulation and the site selection processes involved, experts from fisheries, community development, marketing, accounting, procurement, planning, agriculture, water, forestry and beekeeping, land use and settlements, livestock, environment and cooperatives sections. The meeting also involved Tanzania Forest Services (TFS) Bunda district, Reginal Secretariat (RAS) –Mara region, village communities, Councilors respective wards and the Member of Parliament, a representative of Bundar Rural constituent, where specific climate-related impacts that need intervention were established together with respective priorities (the list of district experts and various stakeholders and village communities involved in the process is attached as Annex 2

This process was complemented by field visits in the villages in sSempember and November 2018 with a first visit in Neruma, Iramba, Igundu, Kitengule, Kibara, Nyamihyoro, Kabainja, Kasuguti and Namhura wards, where a total of 18 villages were visited and consultation with village and community leaders and representatives of community groups were made. In November 2018, a second two weeks visit took place, to discuss more in and around the selected villages of nine (9) Wards to get more physical observations and eye witness on the full picture of the landscape, socio-economic interactions and vulnerabilities, needs and challenges of the local communities. In these preliminary visit in the villages, the techniques used included meetings with village leaders/administrators and village executive committee (VEC) members, Women Groups, Focus Group Discussions, structured interviews and key informants. Also transect walks were carried out for observing environmental and ecological systems, vegetation cover, farming practices and livestock keeping systems in the villages. Meetings with women representatives, leaders of village and ward governments, representatives of farmers and livestock keepers and influential people and elders in these villages at the earlier stage of the concept note development assisted better to understand the problem, whereby they explained its root causes and proposed activities and project components. These meeting at early stages of the concept note development, assisted to perform quick analytical scanning of gender and environmental related issues as well as qualitative analysis and reviews on how climate change affects women and men differently to facilitate proposing gender sensitive actions. Then, the concept note was presented in the four days national workshop where it was evaluated and refined to align with development polices and plans and strategies of the united Republic of Tanzania and with that of the Adaptation Funds in October 2019 (see annex 3 for list of participants in the workshop).

Figure 15:Project formulation team, conducting consultation meetings with village communities in Bunda district during the project concept note development(Source: Field work 2018)

Figure 16: The project formulation experts and some villages discusing project inteventions in the project site at Mchingondo and Namhura village during field visists to enrich the concept development process (Source: Field work 2018)

b) Consultation undertaken during full proposal development stage

At the stage for full proposal formulation, further detailed consultations were conducted in aimed for: detailed involvement of stakeholder and direct beneficiaries for project planning and implementation; appraising interventions; conducting gender analysis including contribution of gender inequalities to observed vulnerability; and *Environmental assessment and complies with the* Environmental and Social Policy of the Adaptation Fund. During these consultations the roles and responsibilities of key stakeholders and the specific mechanisms and strategies for their direct involvement in project activities were identified. Considerations of vulnerability, participation and gender empowerment in the formulation of activities was a key focus area. integration of climate change adaptation into planning processes of the district. During implementation, this project will ensure that both men and women are able to participate meaningfully and equitably, have equitable access to project resources, and receive equal social and economic benefits.

The **stakeholder and beneficiaries consultation proceses** involved a wide range of village community groups, women, farmers, livestock keepers, bee keepers, orphans, traders, herders, teachers in the villages, people with disability, youth, elders and school girls and boys and individual people from Neruma, Iramba, Igundu, Kitengule, Kibara, Nyamihyoro, Kabainja, Kasuguti and Namhura wards and 18 villages as alrealdy mentioned, with an overall gender balance of almost 50% men and 50% women. Please see Annex 2 for list of groups and individuals consulted. Other groups involved in the exercise were planners and experts from Bunda district council, executives and officials of the wards and villages, women groups (see Figure 17, fishers and farmers. In this consultation process, issues related to socio-economic status,

livelihood activities for groups and individual stakeholders and beneficiaries, power relations, land tenure system, willingness of beneficiaries and other stakeholders to voluntary participate to project implementations under Force Account Modality(FAM), opportunities and challenges to the project were discussed, analysed and evaluated. See Annex 3 for the summary of Gender analysis in relation to the project components and Annex 4 for Environmental and Social Management Plan (ESMP)

Figure 17: Discussions with women group and farmers at Buguma/Mchigondo during designing of the project intervention and gender analysis meetings (Source: field work 2019)

Figure 18: Sessions of workshops and detailed discussions by villagers (Source: field survey 2019)

c) Summary of the key findings and concerns from stakeholders consultation processes

- The project must use a participatory approach such as interactive participation, participation in information giving, participation for material benefits and even functional participation in both design and implementation phases and apply best practices and techniques accrued by communities for increasing resiliency of vulnerable communities at grass-root level in villages.

- Force Account Modality was strongly recommended by communities and the Government at villages and district headquarters to be used during implementations as promote more ownership by communities is cost effective and through practical involvement of communities by making themselves available for physical works with modest payments or with no payment and in-kind contributions such as collection of gravels, sands and willingness for working in groups.

- Although the entire community at the project site is vulnerable to climate change impacts, the project was requested to include provisions for supporting vulnerable households who are most vulnerable than others such as families headed by widows, females, disabled and girls. Including special considerations of students and youth.

- Negative impacts of climate change and weather variability is more pronounced to affect water security, food and agriculture, livestock, crop productions, income as more money are being spent for food (currently one kilo of maize is almost US $ 1.5, from US $ 0.5. the cost which is very expensive to communities in all villages to afford), ecological and environmental systems disruption, disruption of livelihood and social system in the villages.

- Stakeholders agreed that, the project should implement concrete adaptation actions and not soft ones at grass root levels to increase community livelihood resilience to climate change effects and cover the following sectors; water resources and supply, agriculture, fisheries and aquaculture, livestock, forestry and ecosystems and gender in relation to climate change.

- Project components should be addressing climate change risks, particularly on issues related water security, food security, agriculture, livestock, soil and water resources management as well as environmental and ecosystem management as urgent needs and priorities. Therefore, they all agreed that:
    i) The proposed activities/interventions for the project components in the approved concept note are urgently needed and therefore reaffirmed the proposed project components, expected concrete outputs, indicated activities as well as the expected outcomes
    ii) For the interventions related to agricultural sectors, the stakeholders and direct beneficiaries advised this project to apply the implementation modality which supports irrigation technologies, both on-farm and off-farm livelihood activities.
    iii) Aquaculture and bee-keeping activities were highly appreciated for promoting ecological health of the fishery and forest respectively as well as promoting strong alternative income generating activities and adaptive capacity of vulnerable groups in village communities

Table 6: Summary of analysis of possible project partners

S/No	Stakeholders	Responsibilities
1	Vice President's Office(VPO)	The Vice President's Office and the NDA to the Adaptation Fund and is the Focal Point to the UNFCCC. The VPO is also responsible for coordination and overseer of all climate change activities in Tanzania. Thus this project will use the VPO to ensure its implementation contributes to the objectives articulated in the climate change strategy, NDCs, NAP and NAPA documents.
2	Ministry of Finance and Planning	MoF will be responsible to ensure that All project components and in-line with national development plans, visions and strategies
3	Ministry of Water and Irrigation (MWI)	MWI is responsible for Water supply, water resources management and irrigation issues. This project will utilize
4	Ministry of Agriculture and Food Security (MoAFS)	MoAFS is responsible for agriculture development issues in Tanzania. All Agricultural related activities will be implemented under MoAFS guidance
5	Ministry of Livestock and Fisheries	This project will utilize experiences and technical capacity of MoLF to implement fisheries related activities under component 3 of the

	Development (MoLF)	proposed project.
6	Tanzania Irrigation Commission (TIC)	This is a technical government institution with mandated to provide technical guidance for all irrigation intervention in Tanzania. The TIC, Zonal Office will be taken in board for implementation irrigation activities under Component 2.
7	Mara Regional Administration Secretariat (RAS) office	Mara Regional Administration Secretariat (RAS) office widely involved in project design and will be involved in the implementations and providing policy guidance to the management unit of the project. RAS will be part of the Project Steering Committee and various reports during the designing and implementations will be communicated to the RAS
7	Tanzania Meteorological Agency (TAM)	Responsible for weather and climate related information, and will be key stakeholder during implementation and post implementation stages of the project
8	Local NGOs, Social groups and CBOs	They are very few in number, and most of them are not active. Most NGOs initiatives are linked to national level organizations. WWF, PSI, Mwibara Community Trust Fund World Vision including CARE international in Tanzania appear to be the NGOs whose approaches align most with the project concept.
9	Private sector, parastatal and public company	Private sector in the project site is at very infancy stage. However, there exist private enterprises at small scale levels. This this project attempt to maximize linkages of villagers/farmers and livestock keepers/ Fishes and bee-keeping groups to markets and financial institutions and buyers of agricultural related products
10	Tanzania Forest Agency (TFA), Bunda Office	Tanzania forest agency is seen as a potential and strategic stakeholder for tree planting, afforestation and ecological rehabilitation and restoration activities
11	Rural Water Supply Agency (RUWASA)	This is National Authority responsible for water supply in rural areas. RUWASA is a technical harm of the Government for management and development of water supply infrastructures in rural areas. RUWASA will be responsible to implement activities related to Water supply and drip irrigation activities
13	Direct beneficiaries	Direct beneficiaries of the proposed project in Bunda are vulnerable and marginalized community groups in villages involved in the project sites. Therefore, these poor villager who are mostly farmers, livestock keepers, fishers, women and youth groups are key stakeholders and will be involved widely.

i) Gender analysis

At the stage of full proposal formulation, the project formulation team conducted a gender analysis study. Its findings were analyzed and discussed in the stakeholders workshop conducted in October 2019 at the new headquarters of Bunda district council, in Kibara. It was clearly observed that, inequality related to gender, exclusion of those with disabilities and income inequality are some of the factors that contribute significantly for vulnerability of women and disabled groups to the current and future climate change impacts. Such inequality predisposes women and other marginalized groups in communities especially widows, orphans and girls to poverty and severe insecurity and poor living conditions A visit to a villager, Mama Theresa Ngoso residing at Mumagunga village is a typical attestation. She is divorced, had four children who all died. She lives alone in a small hut, and depends on small scale farming rain-fed agriculture (see figure 3). In close proximity to her home there is a river but she has no facilities to utilize water from the river for irrigation. Therefore, Income and food poverty as well as poor living conditions, in return, subjects vulnerable women and

girls to negative, even harmful, coping strategies, including risky behaviors such as transactional sex and risk to HIV/AIDS and exploitative works with cheap payments.

Like in many places in the Mara region and many parts of Tanzania, results of the analysis indicated traditional gender roles in Bunda, confer more power to men over women. Mainly, due to prevailing social, economic and political barriers. As a result, women suffer the most on climate change effects, including taking more time for fetching water and food in drought periods, Women constitute the majority of poor people in the district, about 65 percent of rural people living in extreme poverty in the district. In addition, their heavy workload that combines exploitive agriculture, household and domestic works as well as non-farm earning activities such as intensive tasks of child-care, fetching water and fuel wood from far distances, as well as food processing in a context where these services are either inadequate or do not exist, are multiple gender disadvantages which trigger the intergenerational transfer of poverty among women groups in the district.

Lessons from the previous projects in the district suggest that participatory, inclusive approaches aimed at building adaptive capacity, such as farmer-to-farmer extension or farmer-led innovation, are scalable, but individual innovations - including some that are particularly attractive to women - are difficult to scale out, because they are suited to highly specific environments and contexts. Another observation found during the analysis is that it is valuable to recognize that women make an active and important contribution to climate adaptation based on their local knowledge and capacity, and that it is limiting and simplistic to view them as passive victims of climate change. Therefore, successful adaptation projects increase women's opportunities to add value to their agricultural activities - for example, through agricultural processing and marketing - and diversify their income-earning opportunities. In other words, they promote transformational change in agriculture and acknowledge women's role in that process

Therefore, the proposed project should ensure early sensitization of all key decision-makers and communities to the need for and benefits of women's equal participation in activities; specify targets for male/female participation at meetings and training events in order for the meeting/training to be quorate, the target for women/men ration should be encouraged to no less than 50%; and develop implementation plan which ensure targets for male/female participation in project activities be atleast 50% women. *See Annex 3 for summary on project component and gender analysis.*

PARTII I. *Provide justification for funding requested, focusing on the full cost of adaptation reasoning.*

The economy of Bunda district is mainly based on services and goods provided by well-functioning ecological and climate systems. Degradation of these ecosystems through poor farming practices and climate induced processes adversely affects the existing socio-ecological and livelihood systems and human well-being of local communities in the District. The current climate change trend and continued global change in the climate system have affected provisions and economic growth of key sectors like water, agriculture, fishery and livestock. The requested funds from Adaptation Fund, is viewed to support direct implementation of climate smart innovations for building resilient livelihood systems and facilitate transformation of traditional farming, fishing, grazing and water supply systems in vulnerable communities of Bunda District, Mara region, Tanzania.

Component 1: Enhancing Climate resilience for improved access to rural water supply system in selected drought prone agro-pastoral communities of Bunda district

Baseline scenario (without AF resources): Without the AF project, it is likely that the current trend of water interventions and investment continue, with adaptation gaps particularly in villages where climate threats present serious water scarcity.
Extreme climate and weather driven events such as droughts, and prolonged dry periods are more common across the district nowadays. Rainfall seasons and number of rainy days has greatly changed and declined, affecting the existed and traditional water sources such as seasonal rivers and natural springs and water wells. Communities are experiencing failures of their traditional water resources and with no replacement or alternative as the resources in District are limited. The climate driven water scarcity and the resulting socioeconomic consequences are now both pervasive and complex in almost all villages in Bunda District. There are sufficient evidences that, women in most rural areas are now forced to walk longer distances for searching water. Usually, they walk such longer distances with heavy burden of water buckets, at even night times. For instance, such practices are now more common in most villages in the district. Moreover, water scarcity driven by climate change related events like droughts in the district has also been linked with the increased social group (farmers and livestock keepers) conflicts as well as conflicts within households, including incidents of gender based violence and abandonment. Local communities in the project area have a low capacity to adapt such induced water scarcity due to poverty levels. In addition, Bunda District and Tanzania Government been in the list of Least Developed Countries have low adaptive capacity and inadequate financial resources to assist. **Additionality (with AF funding):** The AF funding will be used to enhance investments for climate resilient water management and supply system in vulnerable agro-pastoral communities of Bunda District. The AF resources will assist in building climate salient water supply systems which meets the current demand while avoiding future climate shocks to the water sector in the project areas. The improved management and retention of surface waters will increase natural drainage and increase storage capacity so that farming communities will have water to irrigate crops and women spend less time fetching water. The empowerment of community groups, capacity building and the adoption of COWSOs will provide a more secure water management structures as asset base and better to withstand the effects of climate change in future.

Component 2: Improve agricultural productivity, livelihood and agro-ecosystem resilience through Climate Smart EVA practices

Baseline scenario (without AF resources):Without the AF project, rural communities in Bunda Distrcit will be left with little choice except to continue with their way of farming traditional practices, which are already proven failures to every climate shocks each year. Food aid from the Sectral government has been common practices. As explained at Section 1.1 of this Concept Note, in most villages food insecurity has been the persistence problem. The under-developed markets for processed goods and non-agricultural goods are major barriers to moving people out of marginal agriculture. If left silent with no measures to improve agricultural productivity, livelihood and agro-ecosystem resilience through Climate Smart EVA practices, this situation and the projected future climate change will continue to push people into deeper poverty levels while disrupting long-term ecosystem resilience in the District. The Government has prioritized livelihood improvement through Climate Smart Agriculture Action and the Agriculture Sector Resilient Strategy and Action Plan and in its NAPA but lacks the necessary resources to provide support on the required scale. **Additionality (with AF funding):** The AF resources will be used to facilitate improvement of agricultural productivity, livelihood and agro-ecosystem resilience through Climate Smart EVA practices in Bunda, to avoid future effect of climate change (including increased mean annual temperatures and increased frequency and intensity of droughts) to the agriculture sector and increase food security in rural communities of Bunda Districts. The proposed interventions will support local communities particularly Women who currently depend on Rain fed farming to increase their agriculture productivity and food security.

Component 3: Promote paradigm shift of small scale fishers for sustainable income and climate resilience livelihood through aquaculture innovations.

Baseline scenario (without AF resources): Local communities in Bunda District are vulnerable to climate change, including increased frequency and intensity of droughts and an increased variability in rainfall patterns (see Brief background on what the project aims to solve for further details). In particular, vulnerable communities are exposed to several negative effects of climate change, including inter alia: i) reduced farming productivity; ii) reduced livestock productivity; and iii) decreased availability of fish catches and abundances. The productivity of livelihoods of local communities within the District particularly those underpinned by traditional wild fishing activities – will be reduced by these negative effects of climate change. In addition, non-climate-related challenges facing local fishers are expected to worsen under the future conditions of climate change. The District and the sector Ministry responsible have also failed to adequately address the challenges. As a result, climate induced effects coupled with other non-climatic factors have forced these vulnerable fishing communities into unpredictable and poor catches, and therefore poor life quality. Despite of this, no interventions exists in the district to transform these communities into climate smart fishing practices and facilitate paradigm change using integrated aquaculture innovations. **Additionality (with AF resources):** AF resources will be used to implement on-the-ground activities to promote alternative fishing practices using proven aquaculture techniques to local and poor fishers in Bunda District and transform them into to continue with climate proof fish farming systems. The requested resources from AF, will be used to establish climate resilient post- harvest/processing and storage systems for safe handling, landing sites and storage of both farmed and wild fish catches during extreme climate events (floods, rains). The resources will also assist to institute and implement effective and efficient methods (pond and cage faming) for fish culture techniques including facilitating availability and improvement of fish feeds formulation and disease management and construction of fish ponds in selected areas in Bunda Districts

Component4.Improving ecological and environmental services and functions to sustain climate sensitive rural livelihoods in Bunda District

Baseline scenario (without AF resources): Despite income poverty challenges which are being experienced in Bunda District, ecological and environmental services and functions which sustain climate sensitive rural livelihoods plays key role in maintaining life and food security. For instance:- Forest ecosystems such as woodlands, wooded grasslands and bush lands have been providing biomass energy for cooking at house levels. Unfortunately, the ongoing deforestation has reduced the coverage of forests and woodlands and the availability of associated goods including accelerating land degradation. Across the district, wetlands have been severely degraded as a result of inter alia: a) intensive cultivation of crops such as sweet potatoes and horticultural crops; b) excavation of sand and clay for brickworks; and c) grazing activities. Fish abundance in the lake has declined as a result of intensive fishing efforts and changes in Lake Victoria's hydrology. **Additionality (with AF resources):** AF resources will be used to implement concrete adaptation activities to enhance integrated management of environmental and ecological systems to sustain climate sensitive rural livelihood in Bunda District. The Requested will assist to establish and implement district, Divisions, Ward and village ecological restoration and rehabilitation plans and restoration activities of hills, mountainous and woodland systems. These resources will facilitate and promote implementation of Ecosystem-based Adaptation (EbA) activities such as Promote bee keeping activities in woodland land and mountainous systems and fruit plants as income generating activities including engaging farmers in tree planting on surrounding residential areas, along streets and roadsides and degraded landscapes. To reduce future degradation and induced climate change impacts activities geared to enhance increased access and use of efficient firewood and charcoal stoves and support commercialization of energy efficient stoves will funded under the AF financial resources.

Component 5. Strengthening institutional capacity and knowledge management and on climate change adaptation

Baseline: (without AF resources): Bund District Council currently lacks the capacity and expertise to support and scale up climate adaptation. Without the AF project, it is likely that the pace of adaptation planning will be slow, with limited development of community-based approaches and dissemination of

best practice. The most vulnerable community in villages are likely to continue unsustainable farming, fishing and livestock keeping practices with increasing exposure to climate change risks while economic opportunities remain limited. **Additionality (with AF resources):** With AF funding, community based adaptation planning and best practices piloted during project implementation can be effectively shared and communicated with key decision makers so that they can be replicated in other parts of the country. Finally, building capacity of local institutions to plan and implement climate resilient and cost effective interventions already identified capacity shortfalls in the District and at local communities. The requested resources from the AF will also facilitated sharing project results and lessons learned and mainstreaming new approaches in district planning.

PARTII J. *Describe how the sustainability of the project/programme outcomes has been taken into account when designing the project / programme.*

The project's sustainability will be supported by emphasizing the active participation of community and other stakeholders in decision-making and implementation of the project's activities and strengthening the institutional and technical capacity at community and district levels to ensure that stakeholders have adequate knowledge and skill to maintain the benefits of the project's interventions. The participatory approach will root ownership of the project interventions firmly in the local communities. By engaging communities in the design and implementation of the project and creating COWSOs and Farmer/Fishers/Livestock Groups and community based agricultural enterprise, the project will empower and build capacity of local people to continue adapting to climate change risks. Community ownership will also ensure that the environmental gains are not reversed. The proposed investment matches with Government Priorities set out in key national policy documents including the Vision 2025, the Second Five Years Development Plan, Strategic Plan of Bund District Council and the NAPA. Alignment with national priorities ensures Government commitment to project objectives during and beyond implementation. The operation of the project at the District Authority Headquarters will also ensure that District, Sectors and village level governments play a central role in terms of project implementation and ensuring sustainability through the integration of adaptation plans into District Performance Contracts to institutionalize and sustain community interventions.

The use of Community Animators to deliver project interventions will demonstrate the project's commitment to investing in local people and recognition that community members are best placed to lead project implementation at the community level. The proposed project components and interventions are rooted in the sectors that touch everyday life of communities in Bunda. By supporting adaptation measures to improve resilience to long-term climate change risks, the proposed project provides a longer-term and more sustainable solution to rural and vulnerable communities.

Community-based participatory planning (CBPP) approaches are key planning tools paving the way for community ownership and sustainable benefits. Related discussions on asset maintenance and tenure aspects are essential to ensure the sustainability of asset creation schemes, cultivate community empowerment, ignite active community participation and create ownership of the project investments. In this way, community members fully embraced their roles, not only as beneficiaries, but as stewards and custodians of the project. This project also aim at building on impressive gains from agriculture, fishery and livestock production by organizing the communities into sustainable marketing and credit cooperatives known as SACCOs. This is because the livelihoods of smallholder farmers are often constrained by poor access to markets and limited entrepreneurial skills, which hinders the economic development by limiting the economic base of the most vulnerable communities. The business cooperative approach has proven in various parts of the country to be the strongest driver of income generation. By increasing the scale of their combined outputs, the social-cooperative model will maximize their bargaining power and gain better access to markets and credit. The cooperative will also benefit their members through skills training in agricultural techniques and business practices and make the project sustainable beyond its life time. For instance, all rural water supply will be managed and operated by COWSOs at affordable utility charges of not exceeding US $ 0.022 per 20litres. The price has been proved to be sustainable and will create/ generate revenue amounting to US $ 711,066 in the first three years of operations, while the operation cost will range between US $ 389,000 to 520,000 in the same period of operations. For instance, the previous water supply system built in 1970s failed due to limited involvement of local communities and top down management approach. In contrast, this project proposes sustainable cost effective, gender based - climate resilient-rural water supply, through creation of Community Owned Water Supply Organizations (COWSOs), implemented through Force Account and Self-reliance (Ujamaa) Modalities. This create the sense of in-kind cost contribution by the community and project ownership, lasting project impacts and outcomes for improved community's livelihood systems and increased adaptive capacity under Component 1. Generally, project activities (rural water supply, fish farming, small scale irrigation, bee keeping, restoration and rehabilitation of ecosystems), which will be implemented using Force Account and Self-reliance (Ujamaa) Modalities estimate internal rates of return of 35–70% and higher benefit: cost ratios of up to 30:1200. The proposed collective actions

and opportunities best practices, knowledge-sharing and communicating project outputs among departments, across sectors and village communities in the district is viewed to accrue a disproportionately large benefit for life and livelihood quality improvement under the current and the expected future climate change effects, vis-à-vis the traditional and existing way of implementing development/adaptation projects using un-integrated and isolated projects in the district.

The project will be implemented through the existing stable district institutions and village government structures by implementing their respective activities. Conduct technical Trainings of Trainers (TOTs) on maintenance and operation to selected communities members to ensure operations and maintenance of infrastructures beyond the project life lime. For instance, activities under Component 1 will also include Training of selected members of Water Users Associations (COWSOs) on operation and maintenance, revenue collections, group dynamics, accounting and financial management to ensure sustainability. Activities under Component 2 and 5 will involve training of selected farmers on Operation and Maintenance (O&M) of improved irrigation facilities at Mchingondo/Buguma village and drip irrigation schemes at Buguma and Mumagunga Villages. Equally, selected fish farmers and bee keepers will be trained on their maintenance and operation issues. For instance, it is designed here that, no behalves will be purchased for villagers, rather experts and necessary workshop tools and equipment will be purchased and villagers will be equipped practical knowledge on modern behalves and honey processing techniques, including maintenance and operations. Activities under component 4 will also promote sustainable ecological and environmental management including tree planting. The proposed investment corresponds with Government Priorities set out in the District Strategic Development Plan for Bunda district, Mara Region Secretariat Strategic Development Plan (2016/2021) being implemented 5 District Authorities including Bunda, key national policy documents including the Vision 2025, the Second Five Years Development Plan (2016/2021), Climate Change Strategy 2012, INDCs 2014and the NAPA 2017. Alignment with national priorities ensures Government commitment to project objectives during and beyond implementation. The operation of the project through the District Authority Headquarters will also ensure that District, sector users at the district and village level and the Regional governments play a central role in terms of project implementation and ensuring sustainability through the integration of adaptation plans into District and village plans to institutionalize and sustain community interventions. This provides greater opportunity for the Regional Government in Mara region and central government to scale-up the project outcomes after phasing out of the AF funding and interventions, through sharing and communications of the lessons learned

PARTII K. *Provide an overview of the environmental and social impacts and risks identified as being relevant to the project.*

The project will align with the Adaptation Fund's Environmental and Social Policy as well as national and international standards and guidelines for safeguarding the environment and social settings. The project interventions were designed in consultation with district stakeholders as well as targeted communities is such a way that they would generate positive environmental and social impacts. An Environmental and Social Management Plan (ESMP) was carried out for the project to identify potential environmental and social risks. The assessment was informed by the 15 principles of the Adaptation Fund's Environmental and Social Policy. The Environmental and Social screening checklist and the detailed results for the ESMP are shown in Annex 4. The results – potential risks identified and preventive or mitigation measures planned – are presented in the below.

Checklist of environmental and social principles	**No further assessment required for compliance**	Potential impacts and risks – further assessment and management required for compliance
Principle 1: Compliance with the Law	Compliance Assessment may be required.	**Low Risk**: During implementation the Executing Entity may need further to assess project activity that may require prior permission such as construction permits or permits for water extraction. But all relevant domestic laws as been assessed. The assessment results revealed that, the proposed project strongly comply with all relevant national laws including international standard). All proposed activities under the four components do not conflict with any domestic laws and policies, but they strongly support implementations of those laws and policies as indicated at Part II E above. In addition, all relevant authorities, district and national stakeholders have been consulted to ensure reflection of relevant legal requirements. However, the Environmental and Social Impacts and Risks management Plan has been prepared and is attached as Annex 4.
Principle 2: Access and Equity	Compliance Assessment during implementation may be required	**Low Risk:** While every household/ individual under the project area will have equal opportunity/access to project interventions, there is a very low risk that priority setting which will be done by the village institutions and interventions using the local and district developmental plans and stakeholders and wealth analysis might not be done in an adequate manner hence preventing some households/individuals from benefiting project resources. But design of this project is participatory and all relevant community groups including women, youth, the elderly, and community leaders. These groups have participated in project design and will be engaged in implementation. In this way access and equity will be maximized. However continued assessment and monitoring is essential to ensure all social groups are able to participate fully and equitably so as to receive comparable social and economic benefits from the project.
Principle3: Marginalized and Vulnerable Groups	Compliance Assessment during implementation may be required	**Low Risk:** While marginalized and poor vulnerable village groups especially women have been widely consulted, some marginalized and vulnerable individuals / households may not have any means/ assets/ skills to enable them adopt the project activities. Although, the project design has ensured that benefits accruing from the project interventions – including technology transfer and awareness-raising activities – reach marginalized and vulnerable groups in rural villages, but few stronger communities may try to get access to more benefits and suppress support flow to the marginalized and vulnerable households and thus low risks are predicted
Principle 4: Human Rights	No further assessment required for compliance	**Low Risk:** The risk of the project negatively impacting on the human rights of the target groups is very low or even nonexistent. The project is designed to respect and adhere to the requirements of all relevant conventions on human rights. The project does not foresee any violation of human rights. Thus implementation of the project by the Executing Entity shall respect and adhere to all relevant conventions on human rights, national and local laws in relation to human rights.
Principle 5: Gender Equity and	Compliance Assessment during	**Low Risk:** There might be a low risk of inequitable representation of women in decision making process and implementation of activities. Also, existing

Women's Empowerment	implementation may be required	tradition norms may prevent women and girls to fully participate in implementation of project activities. Thus, the project team will ensure that gender and women empowerment is central to all interventions. All project components have capacity building activities which among others will ensure the capacity of women to participate and benefit from the project is enhanced. Project activities have been designed to be gender sensitive. The project will promote and empower women leadership in public spaces and decision making. In addition, this project project has ensured inclusion of gender equality and women empowerment issues with activities sensitive to gender equality particularly equal rights, responsibilities, opportunities and access of women and youth to resources allocated to improve their resilience to the current and future climate change effects. All consultative and participatory processes strived to include representation of women groups of the community and analyze relevant gender-disaggregated data. The ministry and department responsible for gender issues including gender experts and NGOs actively involved in gender issues in Tanzania were invited to participate in appraising the final document of this project.
Principle 6: Core Labor Rights	No further assessment required for compliance	**Low Risk:** Activities under component 1,2, 3 and 4 will involve labor works for implementations of concrete adaptation actions through the popular implementation modality known as Force Account where community members and beneficiaries provide the labor force. However, in doing so local communities might be exposed to low risk of minor accidents while executing some constructions and tree planting and ecological restoration activities. Thus, the project will ensure respect for international and national Labour laws as prescribed by the International Labour Organization
Principle7: Indigenous Peoples	No further assessment required for compliance	**No Risk:** There is no specific national legislation on this aspect. However, there is no record of presence of indigenous people in the project areas but just local people with certain traditions that are largely influenced by other cultures. Nevertheless, the existing traditions, religious and tribal cultures in the project areas will be respected and incorporated in implementation. All project interventions ensure equitable access to project benefits and resources by local peoples and to most extent communities at grass-root and relevant marginalized community groups are included in community consultation and during participatory planning of activities.
Principle 8: Involuntary Resettlement	No further assessment required for compliance	**No Risk:** The project design does not include voluntary or any involuntary resettlement. All land to be used for project activities including ecological restoration and rehabilitation will come from village land reserve
Principle 9: Protection of Natural Habitats	No further assessment required for compliance	**Low Risk:** Interventions will include planting of tree species, bee-keeping, improved ecosystem and environmental quality and services and functions provide water access and improved food security through drip irrigation interventions. However, there is a low risk that activities such as of concrete adaptation actions could result in destruction of small areas of natural habitat.
Principle 10: Conservation of Biological Diversity	Compliance Assessment during implementation may be required	**Low Risk:** Although the assessment study on environmental and social impacts and risks didn't identify significant impacts of biological diversity, but, without careful planning and mapping of project site, on-the-ground adaptation interventions might cause low risk by adversely impact on local biodiversity. For example, planting exotic, invasive species might outcompete indigenous species and impact negatively on both indigenous species richness and on the ecosystem services, this is might be associated with low risk level tolocal biodiversity. Thus, site specific assessment might be needed during implementation to ensure that the project's activities do not result into significant loss of biological diversity or introduction of known invasive and alien species.
Principle 11: Climate Change	No further assessment required for compliance	**No Risk:** The project will contribute to climate change adaptation and mitigation, thus will complement the national and global efforts to combat detrimental effects of climate change. Thus, through the Four (5) components, this project is designed to improve climate resilience of agro-pastoral rural communities in Bunda district, facilitate transfer of climate adaptation technologies to local communities in rural villages, and promote innovations

		development for climate solutions in rural villages and communities. In this way, this project is design to enhance adaptive capacity of local communities and marginalized community groups. None of project activities will enhance emissions of greenhouse gases.
Principle 12: Pollution Prevention and Resource	No further assessment required for compliance	**Low Risk:** The proposed project is visualized to cause no any harm or pollution.
Principle 13: Public Health	No further assessment required for compliance	**No Risk:** The proposed project enhances the quality of public health. Indeed, through components 1, 2 3 and 4, contribution of this project to the general public health is clear. No adverse impact on public health related issues is envisaged.
Principle 14: Physical and Cultural Heritage	No further assessment required for compliance	**No Risk:** Evidence gathered during consultative meetings and field visit assessments indicate that there are no physical or cultural heritage sites in the project areas. Interventions of this project do not utilize tangible or intangible forms of cultural heritage. Stakeholder indicated that ALL project sites are not located in or near sites officially designated or proposed as cultural heritage sites. Project activities will not impact any cultural resources. Community members and traditional leadership within targeted sites will be engaged to ensure that the project implementation does not affect cultural resources like burial sites.
Principle 15: Lands and Soil Conservation	No further assessment required for compliance	**No Risk:** This project is design to enhance and promote conservation of soil and land resources. The continued degradation of the land resources will be reversed through smart interventions for components 1, 2, 3 and 4. The proposed activities under those components will result into increased soil stability and improved soil fertility and productivity. Generally, restoration activities are envisaged to help in land and soil conservation and will not create any damage to land and soil resources.

Although the AF's Environmental and Social Policy, a project can be categorized as either A, B or C, it has been revealed by the ESMP that, this project is unlikely to pose any significant adverse social and environment impacts. The already identified social and environmental risks are expected to be localized, few in number, small in scale, very limited, reversible and easily mitigatable as most of proposed interventions are largely considered "green". Thus, this project is classified to be under Category B in the classification of the AF's Environmental and Social Policy. Generally, low risks are identified in following principles: Principle 1: Compliance with the Law; Principle 2: Access and Equity; Principle3: Marginalized and Vulnerable Groups; Principle 4: Human Rights; Principle 5: Gender Equity and Women's Empowerment; Principle 6: Core Labor Rights; Principle 9: Protection of Natural Habitats; Principle 10: Conservation of Biological Diversity; and Principle 12: Pollution Prevention and Resource. Therefore, an Environmental & Social Management Plan (ESMP) is proposed in Annex 4 and Part III C, reinforces the mitigation measures. Similarly, funds have been allocated to ensure implementation and monitoring of the ESMP.

PART III: IMPLEMENTATION ARRANGEMENTS

PART III A. *Describe the arrangements for project / programme implementation.*

A: Approach

This project is designed to provide a bottom up approach to planning and agreeing on specific interventions, within the broader framework of the intended objective and project components. For example, setting up of inter-village committees, women groups, farmers and fishers groups and COWSOs will help in creating long-lasting frameworks for improved decision making at village and district levels. These committees and groups will also act as a forum for agenda setting and for determining project priorities and actions in a collegial manner.

The organizational framework is designed around the implementation capacity available in the district, while establishing strong operational linkages with relevant line ministries and other stakeholders. Communities in the villages will have a crucial role in selecting, planning and implementing activities through their Village Plans, thereby ensuring the success and sustainability of the project expected impacts. The project will seek to maximize inter-village exchanges to reinforce the common learning and problem-solving capacity.

Furthermore, using the community based approach allowed the project to design its interventions in a way that is more responsive to the real needs of all marginalized groups and communities in the project sites. This approach will allow a low-risk, learning-by-doing approach, which will also enable individual farmers/fishers and other community groups to become facilitators and leaders within their communities. All physical interventions supported by the project, such as improvements in water, aquaculture and irrigation infrastructure, increase in production of selected commodities and crop products, or reforestation, will be implemented through a community based-type of arrangement. This will help maximize learning and ownership of the results.

B: Organizational framework

The project implementation period will be of 3 years. NEMC is the **AF's Implementing Entity** for this project. The project will be coordinated by Bunda District Council as **Executing Entity** for the project. The project will therefore be hosted at the new headquarters of the district in Kibara.

A **Project Steering Committee (PSC)** chaired by the District Executive Director, with representation of the relevant sector departments in the District, the RAS in Mara region and the VPO offices will be responsible for overseeing project implementation. The Project Implementation Unit will act as the secretariat of the PSC. The PSC will meet twice a year to provide strategic direction to project implementation, monitor progress and approve Annual Work Plans and Budget (AWPBs.). Day-to-day project management and implementation will be the responsibility of the **Project Implementation Unit (PIU)** housed under the DED office at the district headquarters. The PIU will consist of a Project Coordinator, Assistant Project Coordinator, Monitoring and evaluation expert, an Accountant, Community Development Officer, Procurement Officer, Marketing and Business Officer a Driver Office and an administrative assistant, all PIU staff will be sources from Bunda District Council, and no new employment contract is required as all staff will be paid allowances like DSAs when on duty and monthly top-up salaries as indicated in table 14. The PCU will be responsible for the overall planning and management of project activities; guiding, supporting and supervising project implementation; procuring goods and services; financial management of the project resources; and monitoring and reporting on implementation and financial progress. It will work in collaboration with line ministries and government services including the Regional Secretariat and District Facilitation Teams available in various departments of the district to define performance-based MoUs based on district AWPB and determine backstopping arrangements according to the needs and priorities of the districts.

Prior to the Project start-up workshop, the VPO and the target Districts will jointly develop the **Project Implementation Manual (PIM)**, which will guide implementation the project, and a draft AWPB. The PIM and the AWPB will be submitted to the PSC and NEMC for non-objection. When an activity or item has not been captured in the AWPB, authority to incur expenditure should be sought from the Project Steering Committee and NEMC, explaining which activities will be dropped or reduced to provide the funding for the unplanned activity/item.

A start-up package will include a series of launch workshops to be conducted to ensure buy in of all stakeholders. At the district-level launch workshops will bring together the District Council and technical departments, NGOs, development partner-funded projects and representatives of farmer, livestock keepers, fishers, and water user groups /organizations. At village level sensitization workshops will also be conducted. Gender balance will be sought among participants at all levels.

In preparation to implementation readiness, attention must be given to:

- Selection of the Project Coordinator and Project Accountant and mobilisation of other PIU staff;
- Revision of draft Project Implementation Manual (PIM), Financial Management Manual (FMM) and Procurement Manual (PM) and formal adoption and submission to NEMC;
- Revision of draft AWPB and 18-month Procurement Plan (available in the Project Life File) and formal submission of the same.
- Establishment of the PSC.

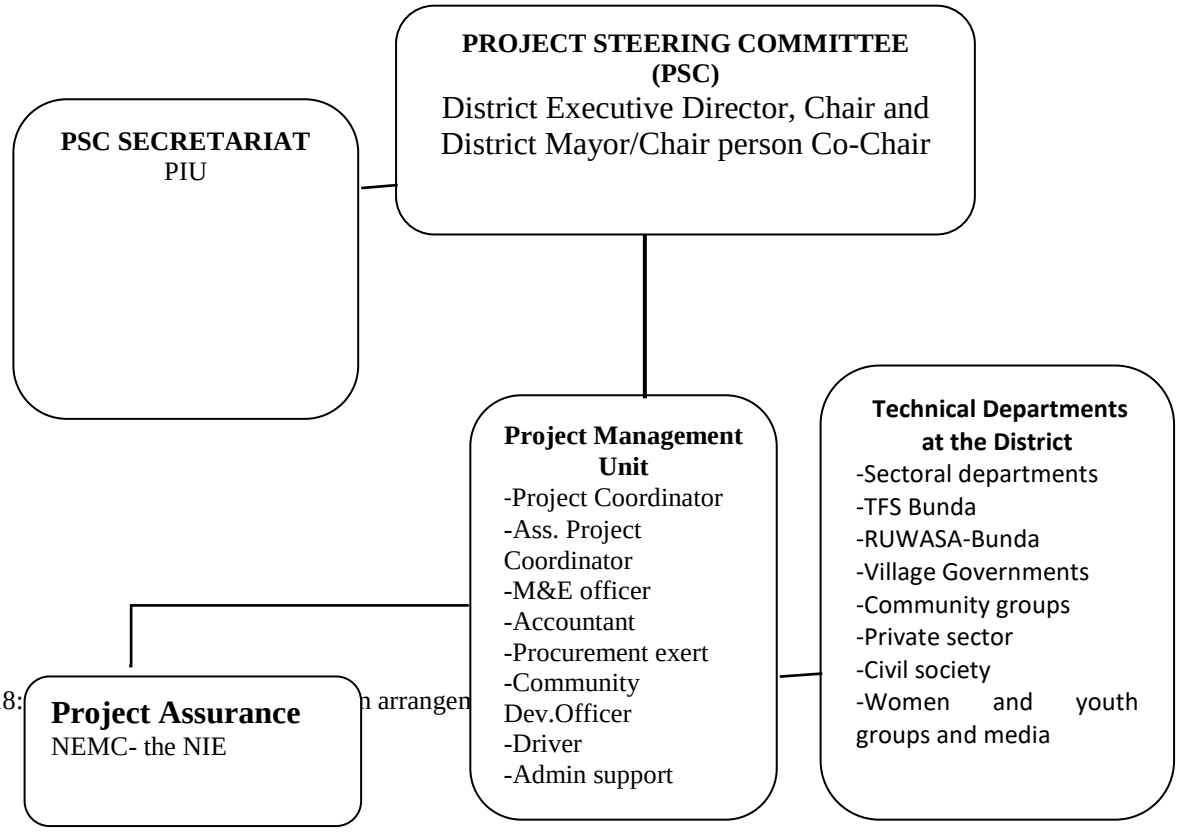


Figure 18: n arrangen

PARTIII B. Describe the measures for financial and project risk management.
B. Financial and project risk management

Describe the measures for financial and project / programme risk management

The project anticipates various risks during the implementation phase as summarized in Table 8. Strict precautionary measures for the identified financial and project risk management have been formulated to foresee those risks before they happen. The risk categories are related to delayed time for project implementations and conflict management are pertinent risks of the proposed project. These are rated low, but those risks related with limited stakeholders' involvement and natural and environmental hazards are rated low to medium.

Table 8: Risks and risk management measures

S/No	Identified Risks	Level of Risk (Low - L; Medium - M; and High-H)	Mitigation Measures
1	Competing interests between different stakeholders regarding accessing and use of project benefits and related resources	L	Establish multi-stakeholders' forum
2	Local communities with limited participation and willingness to promote project initiatives	L	Increase awareness campaign about the importance of communities at village community levels to actively participate and own the project , working with available set up of village government and community structures, active involvement of community organizations in project implementation
3	High expectations for quick investments on the ground and resources beyond the available project resources	M	Continue with awareness raising campaign to foster more understanding about the project objectives and activities under the components and implementation arrangements
4	Project financial management	L	The project will have clear separation of roles and strengthen accountability and auditing
5	Delay in project implementation due to government bureaucracy, long and inefficient procurement processes	L	Detailed Implementation Plans (DIPs) and Project Annual Plans (PAP) will be developed and be approved by both the Project Steering Committee (PSC) and National Implementing Entity (NIE). The project monitoring and evaluation plan will also be developed and implemented effectively. Developing a procurement plan and use flexible procedures under FECE and Negotiate with Government at Kongwa district to get special treatment that can fast-truck implementation

6	Limited Stakeholders Involvement	L	All stakeholders were widely involved in all phases of the project from early stages of the project design, and will continue to be involved during implementation, monitoring and evaluation. Involvement of key stakeholders at community level and inclusion of marginalized communities and groups such as women, local leaders, and community beneficiaries, local district government in Kongwa and public service organizations will facilitate to mitigating any risks related to stakeholders' involvement.
7	Low adoption rate of proposed innovations and adaptation technologies by communities	M	Promotion and demonstration of new technologies and practices
8	Financial Risk	L	There are clear financial management structures in the district that will be followed. These structures follow national laws and regulations governing public financial expenditures and transactions. Therefore, this project will adhere to all Generally Acceptable Accounting Principles (GAAP) regarding control, transparency and documentation, and have procedures and necessary infrastructure in place for an appropriate audit system by the Office of Auditor General or any other internationally accepted auditing firm. Approved regulations, procedures and guidelines on costs for services & goods of the United Republic of Tanzania including the Adaptation Fund Standards will be strictly followed
9	Conflict Management	L	Although it is not expected that any conflict will rise during implementation of this project, the NIE management and conflict resolution structure/mechanism and its oversight and support role will be followed and respected to management any unforeseen conflict which may rise during lifetime of the project phases. Additionally, the PSC and the PIU will put strong early warning structure to foresee and management both financial and management risks before they happen

PART III C. Environmental and social risk management measures

Describe the measures for environmental and social risk management, in line with the Environmental and Social Policy of the Adaptation Fund.

Environmental and social impacts and risks have been identified for the proposed project (Section II K). Following this, a broader view of Environmental and Social Management Plan (ESMP) for the proposed project has been developed in collaboration with relevant stakeholders and authorities including NEMC (see Annex 5).

Table 9: Environmental and Social impacts and risks management

Environmental and Social Principles	Identified potential impacts and Risks	Level (H, M, L)	Mitigation Measures
Compliance with the Law	Some activities under component 1 and 2 which are currently not fully itemized/designed there might be a risk that such activities will not comply with certain laws	L	Environmental and Social Management Plan (ESMP) has been prepared and will be adhered to monitor implementations of on-the ground concrete activities such as water supply and micro-irrigation
Access and Equity	Given that the beneficiaries are rural people and marginalized poor families who are not often integrated in the villages politics and decision-making processes, there could be a risk of insufficient access of the project resources by these people.	L	Clear and transparent criteria have been put in place including selection of participants the trainings and workshops. Measures have been put in place to able this project to closely monitor all targeted beneficiaries to assure equal access of men, women, youth and the most vulnerable groups. Indicators in this regard will be included in the Monitoring and Evaluation Plan
Marginalized and Vulnerable Groups	It is probable that project activities may exclude marginalized/ and vulnerable groups at various project sites or may have insufficient access to project resources and total involvement to execute project activities during implementations thus preventing them from accessing benefits – both in terms of resources and trainings	L	The prepared ESMP will be followed and monitored strongly during the implementation of all interventions to ensure all marginalized and vulnerable groups have adequate access to and benefit from the project interventions. In addition, the project design has ensured that benefits accruing from the project interventions – including technology transfer and awareness-raising activities – reach marginalized and vulnerable groups in the rural villages. The design of this project ensures that all components enhance the adaptive capacity of marginalized and vulnerable groups including transforming their social life to better levels especially for women and girls
Human Rights	Project objectives promote basic human rights for equitable access to service and clean and safe drinking water, access to food, information,	L	The proposed project respect and adhere to all relevant conventions on human rights, national and local laws in relation to human rights.

	and quality and health environment		
Gender Equity and Women's Empowerment	It is likely that women will be inadequately represented during implementation of this project, thus making the project not benefiting men and women equally	L	This project has put measures to include a 50% ratio for gender consideration during implementation of all project activities under the four components. Fair and equitable selection of beneficiaries will be done and a list of all beneficiaries to each project activities will be maintained and monitored by the PIU and NIE on quarterly basis
Core Labor Rights	There is a possibilities of communities/beneficiaries who will be involved to implemented activities using Force Account Modality under components 1, 2 and 3 be exposed to the risk of minor and unforeseen accidents	L	The PIU will ensure compliance with the national and international labor laws and standards and required relevant protection gears will be adequately provided.
Indigenous Peoples	According to Tanzania laws, there are no indigenous people identified in the proposed project sites.	N/A	EMSP prepared will be monitored to ensure equitable access to project benefits and resources by local peoples and to most extent communities at grass-root and relevant marginalized community groups are included in community consultation and during participatory planning of activities
Involuntary Resettlement	No identified risk	N/A	The project design does not include voluntary or any involuntary resettlement.
Protection of Natural Habitats	There is a low risk that the interventions of concrete adaptation actions such as boreholes, rural water supply network, water tanks, and micro-irrigation system could result in destruction of small areas of natural habitat.	L	ESMP has been prepared to monitor executions of such interventions. Activity based re-assessment will be conducted during implementation phase
Conservation of Biological Diversity	Execution of concrete adaptation actions under components 1,2 and 3 may result in negative impacts on biodiversity	L	ESMP has been prepared to guide and monitor executions of such interventions. Activity based mitigation measures has also been development under the ESMP to be followed during implementation phase
Climate Change	No identified risk	N/A	None of project activities will enhance significant emissions of greenhouse gases.
Pollution Prevention and Resource	No identified risk	L	The proposed project is visualized to cause no any harm or pollution.
Public Health	No identified risk	N/A	The proposed project enhances the quality of public health. Indeed, through components 1, 2 and 3, contribution of this project to the general public health is clear. During the implementation of the project awareness raising activities will be

			undertaken on malnutrition related diseases, malaria and water related diseases including cholera and promote WASH issues through implementation of activities under Component 1, 2, 3, 4and 5.
Physical and Cultural Heritage	None anticipated.	N/A	No physical and cultural heritage sites which exists in the project sites
Lands and Soil Conservation	None anticipated.	L	The ESMP recognized that, most of activities of this project is designed to enhance and promote conservation of soil and land resources. The continued degradation of the land resources will be reversed through smart interventions for components 2 and 3.

NB: This is project is designed in consistence with Environmental and Social Policy of the Adaptation Fund. However, the proposed activities will be reassessed and monitored as per the ESMP at every stage for potential social and environmental risks to ensure that potential adverse impacts are avoided, or where avoidance is not possible, minimized, mitigated, and managed. Funds to ensure ESMP is implemented has been included in the budget. Although the AF's Environmental and Social Policy, a project can be categorized as either A, B or C, it has been revealed by the ESMP that, this project is unlikely to pose any significant adverse social and environment impacts. The already identified social and environmental risks are expected to be localized and minimal as most of proposed interventions are largely considered "green". Thus, this project is classified to be under Category B in the classification of the AF's Environmental and Social Policy.

Grievance and redress mechanism

The proposed project will utilize the existing grievance mechanism in the United Republic of Tanzania to allow affected to raise concerns that the proposed project is not complying with its social and environmental policies or commitments. The United Republic of Tanzania has established grievance mechanism through the Employment and Labor Relation Act, 2004 and the Environmental Management Act, 2004 through the Environmental Impact Assessment (EIA) and Environmental Audit (EA) Regulation (2005*)* for all climate change related projects. Environmental Impact Assessment (EIA) and Environmental Audit (EA) Regulation (2005*)* inform and guide all actors and persons affected by any projects to bring forward the concerns, and task project proponents to be responsible to stakeholder concerns. This project, conducted consultative process with the community and beneficiaries to ensure prevention of grievances that might arise from the project activities. However, if at all, there are any grievances, the below redressal mechanism is proposed:

It will be the responsibility of the Project Manager, PMU and the Executive Director at Bunda District Council to ensure that all relevant stakeholders are adequately informed about the grievance mechanism. Thus, grievance redressal mechanism would be shared with the community during the project inception workshop and subsequent meetings with the beneficiaries

In this regard, the Project Manager and other Project Staff at the District Headquarters and in the Villages are usually the first point of contact for any project-related complaints from stakeholders. The Project Manager and project team should respond promptly and appropriately to a complaint with the goal of avoiding escalation of the concerns. As part of the grievance redressal mechanism, the contact details of the Project Staff including the Project Coordinator/Project Manager would be made available to stakeholders including project beneficiaries and the community. Contact numbers would be displayed at common or predominant places along–with the project details. This is expected to promote social auditing

of project implementation. The grievance mechanism will be available to the entire project intervention sites in the villages. However, the functionality of the mechanism rests with the beneficiaries considering that the project including the grievance mechanism is envisaged to be a bottom up approach. The Project Manager can direct the complainants to write a letter explaining through relevant organs established from the village levels. The concerns can be submitted to the District Executive Director' Office for Stakeholder Safeguard-related Response, if the issues cannot be resolved at the project level. The Project Manager should advise complainants to provide complete information, so that the DED's Office can properly assess and address the complaint. If the DED's Office for Stakeholder Safeguard-related Response finds that the complaint is eligible, S/he will establish a team composed of internal/external experts to investigate the case and propose options for the complainant to consider and bring the matter to the Project Steering Committee for decisions before submitting the report to the NIE.

Generally, the established grievance and redress mechanism of this project aim to address all grievances at the field level by the project team which will be the first level of redressal mechanism. If the grievance is not resolved at the field level, it will be escalated to the PMU and then to District Executive Director (DED) who will be responsible for addressing grievances related to violation of any of the provisions of Environmental and Social Policy of the Adaptation Fund and National Laws. All grievances received and action taken on them will be put up before the PMU and Steering committee meetings and will also be included in the progress reports to the NIE for reporting and monitoring purposes.

PARTIII D. *Describe the monitoring and evaluation arrangements and provide a budgeted M&E plan.*

The monitoring and evaluating system will be based on the indicators and means of verification defined in the Results Framework. Overall responsibility for monitoring and evaluation will be the responsibility of the executing agency, Bund District Council. Outcomes and outputs will be monitored during project implementation by the Project Implementation Unit with data collected, compiled and analysed by the Project Implementation Unit (PIU) on a regular basis. The monitoring and evaluation system will be linked to the results framework, annual work plans and budgets and impact assessments. The timely provision of results from Monitoring and Evaluation activities will enable the team to take corrective or enhancing measures accordingly, or report the new and an expected project risks before they occur. The project will employ a variety of means for data collection including surveys, participatory methods and case studies with project beneficiaries. The data will be disaggregated by socio- economic group and gender. Monitoring results will be disseminated in a user-friendly format and timely manner to project stakeholders by the Communications Officer to enable a responsive approach to implementation and allow for troubleshooting of any problems to ensure smooth implementation of project activities.

Six monthly Progress Reports will describe progress on implementation as well as lesson learning, a risk update and management and an ongoing assessment of sustainability and acceptance of project interventions by the stakeholders particularly the beneficiaries. The report will also include the expenditure report and a work plan and budget for the following reporting period. The bi-annual progress reports will be submitted to the Project Steering Committee for regular review and approval. Quarterly Progress Reports will also be prepared by the Project coordinator and be submitted to the District Executive Director to ensure continuous monitoring of project activities and to allow for corrective measures in due time. These reports will provide an update on progress on the delivery of outputs, a quarterly expenditure report and a work plan for the next quarter. At the end of each year an Annual Impact Assessment will be carried out by the Monitoring and Evaluation Officer to collect and collate indicator data and measure performance against the baseline and targets in the Results Framework. S(he) will work closely with the Communications Officer to ensure timely and effective communication of the results to all the key stakeholders. The assessment will include a field survey and case studies and will report on the progress made against the indicators and targets, delivery of project outputs, and lessons learned. The project will also establish a Participatory Monitoring and Evaluation system with beneficiary groups to enable beneficiaries to measure progress of project interventions. In terms of financial monitoring, the PIU via the District Executive Director will provide the NIE (NEMC) with certified periodic financial statements. In addition, the project will commission an annual audit (be conducted by an accredited auditor) of project accounts to ensure compliance with the AF and Government rules and procedures. Moreover, an external Mid-Term Evaluation will be conducted in the mid-way during the project implementation. The evaluation will review progress against milestones and assess progress made towards the delivery of outputs and achievement of objectives as well as identify corrective actions if needed. It will focus on the effectiveness of delivery, timelines and efficiency of implementation, and risk management. It will present the initial lessons of project design, implementation and management. The findings will be used to enhance implementation during the final half of the project phase. A Final Evaluation will be conducted 6 months before project closure and will focus on the impact and sustainability of project results. The report will summarise the results achieved (objectives, outcomes, outputs), lessons learned, and make recommendations on any actions needed to ensure sustainability, replicability and scaling up.

Table 10: Project Monitoring and Evaluation Work Plan and Budge

Activity	Sex- disaggregated indicators	Responsibility	Budget in US $	Timeframe											
				2020	2021				2022				2023		
				Quarters	Quarters				Quarters				Quarter		
				Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	
Inception and annual work plans Annual Work Plans and Budget (AWPBs.)	At least 50% of workshop participants are female, to maintain 50:50 gender ration	Project Coordinator M& E Officer /Project Implementation Unit(PIU)	8,000												
Initial studies to improve baseline, gender analyses, environmental and social impact assessment	Procurement process of the consultant to consider gender at least 40% female available for evaluation process	National consultant, Project Manager and M&E Officer	8,000												
Monitoring Project outputs by Project Management Team and reporting	At least 50% of female benefits from the project in each village. The PMU to Consider 40% female	PIU and Monitoring and Evaluation Officer	8,000												
Visits to field sites for joint review of status and project progress and reporting	At-least 50:50 male-female ration is maintained in execution of activities and benefits from each project activities under each component as per gender analysis study	Project team	8,000												
Monitoring implementation of the Environmental and Social Management Plan (ESMP) to address Environmental and Social impacts and risks	At least 50% of females are included in the monitoring of the ESMP	Project Coordinator M& E Officer /Project Implementation Unit(PIU)	8,000												
Independent Final Evaluation	Final evaluation report to check if atleast 50% of project beneficiaries in village communities were female and girls	National Consultant	13,000												
Audits and Final Project Audit	Audits and Final Project Audit report must indicate if least 50% of beneficiaries in village communities were female and girls	Audit Unit	8,000												
Total M & E costs			61,000												

PARTIII D: Results Framework including milestones, targets and indicators

The Results Framework of the project defines success indicators for project implementation and the respective means of verification. A Monitoring and Evaluation (M&E) system for the project will be established, based on the indicators and means of verification. It is important to note that the Results Framework in Section E, including its indicators, targets and means of verification, will be reconfirmed during the launching event expected in July 2021..

Any changes to be done to the Results Framework will require approval by the Project Steering Committee. The inception workshop is crucial to building ownership for project results and agreeing on modalities of project execution, documenting mutual agreement for the proposed executive arrangements amongst stakeholders and beneficiaries.

Table 11: The results framework with indicators to output level, baseline, targets, sources of verification and assumptions

Project Component	***Project Outcome***	***Project Output***	***Output Activities***	***Baseline Indicators***	***Baseline Levels***	***Project Outcome Indicator***	***Results/Targets***
Project goal: Contribute to institutional capacity to manage climate related risks and reduce vulnerability of rural communities in drought prone areas of Bunda District							
1 Enhancing Climate resilience for improved access to rural water supply system in selected drought prone agro-pastoral communities of Bunda district	1.Enhanced climate resilience for improved access to rural water supply system in selected drought prone agro-pastoral communities of Bunda District	1.1: Climate resilient rural water supply system established in selected drought prone agro-pastoral communities of Bunda district	1.1.1 Rehabilitation of pump houses and installation of submersible water pump at Kasahunga, Mumagunga and Isanju water sources	1. Number of pump houses rehabilitated 2.Number of purchased water pumping machines	1. Existence of two old building for fixing pumping machines; 0 -water pumping machine	Increased resilience and adaptive capacity of at least 37,000 people by 2021 and 70,000 by 2050 (as direct beneficiaries, of which over 19,000 are females and 18,000 are males) to climate induced water scarcity in the selected agro-pastoral communities of Bunda District At least 13,369 households of which at least 4,412 are female headed household have access to clean water as direct beneficiaries At least 8 COWSOs established and well managed with members at least 50% being females At least 10 troughs of water for cattle constructed	Atleast 37,468 people (of which 18,108 are female and 18,359 are male)from drought prone agro-pastoral communities in the project sites of Bunda District have access to rural water at the beginning of the project About 78,875 people of which 40,226 are female and 38,649 are male benefits water supply from the proposed investment by 2050 ; About 13,369 households of which at least 4,412 are female headed household have access to clean water 8 COWSOs established and well managed with members at least 50% being females 10 troughs of water for cattle constructed
			1.1.2 Rehabilitation and improve water storage tanks at Isanju, Namhura, Mumagunga and Kasahunga villages and construct sump tank at Namhura village	1.Number of water storage structures constructed and rehabilitated	Existence of 3 malfunctions water tanks		
			1.1.3 Rehabilitate water network system in Iramba, Neruma, Namhura and Nyamihoro Wards covering Nyamitwebili, Neruma, ,Kasahunga, ,Namhura, Isanju and Mwiruruma villages and make them more climate resilient	1.Number of water network constructed and rehabilitated in the project site 2. % coverage of pumped water network (kilometers of pumped water network from lake Lake Victoria)	Existence of 60% of un-functional water network		
			1.1.4 Extension of water network system for Kasahunga and Isanju water sources to cover drought prone communities of Mumagunga, Chamakapo and Mulanda villages in Namhura and Neruma Wards.	Number of water network constructed and rehabilitated in the project site 2. % coverage of pumped water network (kilometers of pumped water network from lake Lake Victoria)	Existence of 0% of un-functional water network		

Project Component	*Project Outcome*	*Project Output*	*Output Activities*	*Baseline Indicators*	*Baseline Levels*	*Project Outcome Indicator*	*Results/Targets*
			1.1.5 Drill boreholes in drought prone villages (Namalebe – Nakatuba, Igundu Nasululi and Lagata) villages uncovered with water systems from Kasahunga and Iramba surface water sources and Install solar energy driven water pumps	Number of boreholes drilled	0 boreholes exist in the proposed sites/villages		
			1.1.6 Construct storage tanks and Water Kiosk/Network for the drilled boreholes	1. Number of storage water tanks constructed 2. Number of Kiosks constructed 3. % coverage of boreholes water network (kilometers of drilled boreholes water networks)	0 % of water kiosk network		
		1.2 Establishment of Community Owned Water Supply Organization(COWSOs) facilitated and their functional committee members trained on operational and maintenance in Bunda District.	1.2.1 Establish and/or strengthen water governance structures/arrangements (COWSOs by considering gender balance for selection of members of the management team) to better manage water source, equitable and gender sensitive water allocation for human and other uses, and revenue collection and develop by-laws for regulating effective use of water resources and protection of rural water infrastructures	1.Number of COWSOs established 2.Training reports 3. Number of committees	0% of established COWSOs		
			1.2.2 Train selected members from Water Users on operation and	1.Number of people trained 2.Training reports	Availability of communities communities		

Project Component	*Project Outcome*	*Project Output*	*Output Activities*	*Baseline Indicators*	*Baseline Levels*	*Project Outcome Indicator*	*Results/Targets*
			maintenance of their climate resilient rural water supply schemes to ensure sustainability				
2. Improve agricultural productivity, livelihood and agro-ecosystem resilience through climate smart EVA practices	2.Improved agricultural productivity, livelihood and agro-ecosystem resilience through climate smart EVA practices in the selected communities of Bunda District	2.1Climate Smart EVA practices to improve food security through small scale and micro-irrigation schemes enhanced in selected villages of Bunda district	2.1.1 Construct and establish drip irrigation structures/facilities Poly/sim tanks, PVCs, solar pumps and net houses) for intensified horticultural crops and relevant food crops at Mchingondo (Buguma) and Mumagunga villages of Bunda District Council	Number of improved climate sensitive irrigation schemes established	Availability of communities and agricultural lands and water sources	% agricultural infrastructure improved to withstand climate change and variability- induced stresses in selected communities of Bunda District At least 2 small irrigation schemes established in Bunda district, of which at least 1,000 people are direct beneficiaries and 80,000 people are indirect beneficiaries, and 50% of beneficiaries are female Increase food security in Bunda district by 30% benefitting about 60% females and 40% males to befits more than 80,000 people as direct and indirect beneficiaries At least 300 farmers trained of which 50% are women and	Establish 2 irrigation schemes in Bunda district, of which at least 50% of beneficiaries are female and Increase food security in Bunda district by 30% benefitting about 60% females and 40% males 300 farmers trained of which 50% are women and 50% are men
			2.1.2 Construct and establish irrigation structures/facilities of (water tank, PVCs, canals, motorized pump, and electrical transformer) for enhanced field crop (paddy) production at Mchigondo (Buguma) village of Bunda District Council.	Number of improved climate sensitive irrigation schemes % increase in the command area % increase of women farmers involved in irrigation activities at Mchigondo	Existence of tow inactive traditional irrigation schemes 10% area is under production		
			2.2.3 Facilitate construction of two post-harvest management centers/warehouses for paddy and sunflower at Mchigondo (Buguma) and Kasuguti villages of Bunda District Council using force account modality.	Number of post harvesting structures constructed	0 post harvesting structure exist		
			2.1.4 Facilitate increased use of EVA practices, drought tolerant and early maturing crops (Cassava and Sunflower) by farmers from Namhula,	100% of farmers of which 50% are women groups in the project sites adopted drought and early maturing crop varieties	Availability of drought tolerant and early maturing seeds		

Project Component	*Project Outcome*	*Project Output*	*Output Activities*	*Baseline Indicators*	*Baseline Levels*	*Project Outcome Indicator*	*Results/Targets*
			Mumagunga, Kasuguti, Butimba, Neruma, Chitengule, Nakatuba, Namalebe, Buguma and Igundu villages of Bunda District Council.			50% are men	
			2.1.5 Facilitate availability of crop value addition technologies (modern paddy hulling machine, sunflower seed pressing & oil refinery machine, cassava graters and horticultural drying micro technologies) for the farmer groups particularly for Mchingondo, Mumagunga and Kasuguti in Bunda District Council.	Number of modern paddy hulling machine, sunflower seed pressing & oil refinery machine, cassava graters and horticultural drying devices for the farmer groups	No modern paddy hulling machine, sunflower seed pressing & oil refinery machine, cassava graters and horticultural drying devices are available		
			2.1.6 Capacity Building to farmers through training programs on good agronomic practices through farmers field schools, Female Farmers Field Schools, Demo plots, Agroforestry0 of the selected crops (Cassava, sweet potatoes, paddy, sunflower, horticultural crops, agroforestry crops), operations and maintenance of the constructed/installed irrigation facilities, crop post-harvest management practices and value addition.	% of farmers and Women groups using drought tolerant and early maturing seed Number of people trained of which 50% are females	Availability of farmers and women groups Availability of people willing for training		
			2.1.7 Facilitate improved local chicken keeping practices for Neruma, Mumagunga,	1 (one) modern hatchery and one transformer to be installed at	0 hatchery is available		

Project Component	*Project Outcome*	*Project Output*	*Output Activities*	*Baseline Indicators*	*Baseline Levels*	*Project Outcome Indicator*	*Results/Targets*
			Chingulubhila and Namhura Villages as potential enterprises to generate income and building resilience for the poor households and women groups	Mumagunga village, two incubators, three banners, 20-50 trays, chicken feeds, 10 chicken shelters, and 10001local breed chickens 1000			
3. Promote paradigm shift of small scale fishers for sustainable income and climate resilience livelihood through aquaculture innovations	3.Traditional fishing practices of small scale fishers transformed and fishers' income improved through climate sensitive aquaculture innovations	3.1. Traditional fishing practices transformed for improved climate resilient livelihood and sustainable income generating activities in selected villages of Bunda District.	3.1.1 Construction of 10 earthen ponds sized 20X40 Meters for vulnerable small scale fishing communities (Women and youth groups inclusively) at Buguma and Isanju villages	Number of ponds for aquaculture activates established	0 ponds are available	Paradigm shift of small-scale fishers for sustainable income and climate resilience livelihood through aquaculture innovations in fishing communities strengthened in response to climate change and variability induced stress. At least 200 small scale fishers of which at least 40% are females are benefited and trained on climate resilient aquaculture innovations; A least10 fishing ponds and 10 cages for aquaculture constructed in the pilot villages and at least200 people	200 small scale fishers of which at least 40% are females trained on climate resilient aquaculture innovations; 10 Fishing ponds for aquaculture constructed in the pilot villages 10 tilapia cages 107,000 fingerings 2 Wooden Outboard Engine Boats
			3.1.2 Introduction of an effective and efficient fish culture techniques using Tilapia cages by Establishing 10 Cages (Sized 5x5x2.5m. each) for vulnerable small scale fishing communities (Women and Youth groups) at Buguma and Isanju villages	Number of tilapia cages established at Buguma and Isanju	0 tilapia cages are available in the sites		
			3.1.3 Procure/produce and introduce 107,000 fingerlings in 10 ponds and 20 cages	Number of fingering produced/procured	Availability of markets in Tanzania for procuring fingering		
			3.1.4 Purchase two Wooden Outboard Engine Boats for the farmers at Both Buguma and Isanju Villages	Number of Wooden Outboard Engine Boats	O Wooden Outboard Engine Boats available in the sites		
			3.1.5 Purchase of Feed for pre-nursery, Nursery, Grow outs/Brooders and Hatchery feeders	Number of pre-nursery and 2 Grow outs/Brooders and Hatchery feeders	O availability of pre-nursery, Nursery, Grow outs/Brooders and Hatchery feeders		
			3.1.6 Train community on	Number of people			

Project Component	*Project Outcome*	*Project Output*	*Output Activities*	*Baseline Indicators*	*Baseline Levels*	*Project Outcome Indicator*	*Results/Targets*
			Fish culture Techniques and fishing skills at Cage sites in Lake Victoria	trained of which 50% are women Training reports		benefited as direct beneficiaries and 300,000 people as indirect beneficiaries	
			3.1.7 Facilitate establishment of one fish hatchery for tilapia species at Buguma village	Number of Hatchery for mass production of Fingerlings established Number of Feed preparation building constructed Number of Pelletizer and Feed mixer Machine purchsed	No hatchery and Feed preparation Buildings in place and Feed preparation building for installation of Pelletizer and Feed mixer Machine available in the project sistes		
			3.1.8 Facilitate construction of a two room building for feed preparation for the established fish hatchery, purchase and enable installation of a pelletizer and Feed mixing machine at Buguma village	Number of building for feed preparation established at Buguma	Availability of construction site at Buguma		
			3.1.9 Facilitate introduction of modern techniques for improved fish feeds formulation through use of powder and pallets to promote sustainability.	Number of people trained of which at least 40% are women and training reports	Availability of small scale fishers		
			3.1.10 Facilitate t study Visit of selected fish farmers on Tilapia Cage farming in Kisumu-Kenya	Study visits reports	Availability of small scale fishers		
			3.1.11 Provide fish security management in ponds and Cages at Buguma and Isanju villages	Number of security guards employed	0 Availability of fisher groups willing to be involved in security of ponds and cages		

Project Component	*Project Outcome*	*Project Output*	*Output Activities*	*Baseline Indicators*	*Baseline Levels*	*Project Outcome Indicator*	*Results/Targets*
4. Improve ecological and environmental services and functions to sustain climate sensitive rural livelihoods in selected rural communities of Bunda District	4.Improved ecological and environmental services and functions to sustain climate sensitive rural livelihoods in Bunda District	4.1.Integrated management of environmental and ecological systems implemented to sustain climate sensitive rural livelihood in selected villages of Bunda District Improve ecological and environmental services and functions to sustain climate sensitive rural livelihoods in selected rural communities of Bunda District	4.1.1 Establish and implement ecological restoration and rehabilitation plans (hills, mountainous and woodland restored and conserved) in selected Wards (Iramba, Neruma, Namhura, Kitengule and Igundu wards)	Number of restored and rehabilitation ecosystems(hills, mountainous and woodlands), Number of tree planted Number of tree nurseries esttblished	30% hills, mountainous and woodland restored and rehabilitated in Bunda district, 1 Functional district environmental committee for law enforcement	Number and type of ecosystems maintained and improved to enhance their functions and services under climate change and variability- induced stress. At least more than 500 people benefited as direct beneficiaries and 4,000 benefited as indirect beneficiaries from restoration and rehabilitation of at least 100 acres of the degraded ecosystems in the project sites, At least 20 community groups involved in tree planting activities of which 50% are women groups At least 20,000 houses benefited from planting as direct beneficiaries in 5 Wards of Bunda district	Restore and Rehabilitate at least 100 acres of the degraded ecosystems in the project sites At least 20 community groups involved in tree planting activities of which 50% are women groups Planting 1, 000,000 tree seedlings in 5 Wards
			4.1.2 Promote improved ecosystem based income generating activities at Mwiruruma, Isanju, Mumagunga, Kenkombyo, Buguma, Igundu, Namhura, Kasahunga, Sikiro, Nyamitwebili and Namalebe through (a) improved bee keeping activities in woodland, hills and mountainous systems and (b) fruit plants farming	Number of modern beehives purchased and used by farmers Number of trees including fruit trees planted by farmers	0% of modern bee hives in the selected project sites 2 tree nurseries available in the district		
			4.1.3 Mobilize enclosure systems in degraded ecosystems to promote natural regeneration and recovery of ecological functions and explore the use of local/traditional institutions to strengthen management of sensitive ecological systems.	Number of degraded ecosystems under community driven closure system to restore ecological functions and services	0% degraded ecosystem under community closure system to restore ecological functions and services		
			4.1.4 Engage farmers in tree planting on surrounding residential areas, along streets and roadsides and degraded landscapes and establish	Number of school and village nurseries Number of cattle purchased and distributed			

Project Component	*Project Outcome*	*Project Output*	*Output Activities*	*Baseline Indicators*	*Baseline Levels*	*Project Outcome Indicator*	*Results/Targets*
			ecological schools (3 secondary and 3 primary schools) and villages (4 villages) in selected wards of Bunda district.	Number of tree grown Number of ecological schools (secondary and primary schools) and villages (villages) established			
5.Strengthening institutional capacity and knowledge management on climate change adaptation	5.Strengthened institutional capacity to reduce risks associated with climate- induced Socio-economic losses and livelihood failures in Bunda district	5.1Capacity of the district and communities in Bunda is strengthened to respond to extreme weather events	5.1.1Training of government stakeholders: technical staff, community groups and civil society in climate risk management and project measures for further scaling up 5.1.2.Communicate and share knowledge generated through project implementation in Bund district, National and International communities 5.1.3Sharing project results and lessons learned	Number of communities and district staff (atleast 40% are women) trained on climate risk management No of capacity building training workshops and short courses facilitated by the project Number of workshop participants with at least 40% women Number of project papers, knowledge sharing material plan, materials on popular versions in Kiswahili and English Number of knowledge products (IEC) developed and distributed Number of plans at district level with mainstreamed climate change and variability issues	Number .and type of knowledge products developed and disseminated Number of district staff and community population for effective project and adaptation initiative implementations	Number .and type of knowledge products developed and disseminated Number of district staff and community population for effective project and adaptation initiative implementations	Over 2000 knowledge products (IEC) developed and distributed 12 Radio talk shows on project implementations and adaptation issues, ensuring 50% participation of women Web portal for interactions on project success and challenges One database for documentation of project implementation processes One Documentary developed for the project stories and shared at district and national level

PART IIIF: Project alignment with AF results framework

Demonstrate how the project / programme aligns with the Results Framework of the Adaptation Fund.

Table 12: Alignment with with AF results framework

Project Objective(s)	*Project Objective Indicator(s)*	*Fund Outcome*	*Fund Outcome Indicator*	*Grant Amount (USD)*
1 Enhancing Climate resilience for improved access to rural water supply system in selected drought prone agro-pastoral communities of Bunda district	Increased resilience and adaptive capacity of atleast 37,000 people by 2021 and 70,000 by 2050 (as direct beneficiaries, of which over 19,000 are females and 18,000 are males) to climate induced water scarcity in the selected agro-pastoral communities of Bunda District At least 13,369 households of which at least 4,412 are female headed household have access to clean water as direct beneficiaries At least 8 COWSOs established and well managed with members at least 50% being females At least 10 troughs of water for cattle constructed	**Outcome 6:** Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas **Outcome 4:** Increased adaptive capacity within relevant development and natural resource sectors	2.1. No. and type of targeted institutions with increased capacity to minimize exposure to climate variability risks 3.2. Modification in behavior of targeted population 4.1.Development sectors' services responsive to evolving needs from changing and variable climate 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	501,360.00
2.Improve agricultural productivity, livelihood and agro-ecosystem resilience through climate smart EVA practices	% agricultural infrastructure improved to withstand climate change and variability-induced stresses in selected communities of Bunda District At least 2 small irrigation schemes established in Bunda district, of which at least 1,000 people are direct beneficiaries and 80,000 people are indirect beneficiaries, and 50% of beneficiaries are female Increase food security in Bunda district by 30% benefitting about 60% females and 40% males to befits more than	Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas Outcome5: Increased ecosystem resilience in response to climate change and variability Outcome 4: Increased adaptive capacity within relevant development and natural resource sectors	2.1. No. and type of targeted institutions with increased capacity to minimize exposure to climate variability risks 3.2. Modification in behavior of targeted population 4.2. Physical infrastructure improved to withstand climate change and variability-induced stress 5.1 Ecosystem services and natural Assets maintained or improved under climate change and variability-induced stress 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	330,250.00

	80,000 people as direct and indirect beneficiaries At least 300 farmers trained of which 50% are women and 50% are men			
3. Promote paradigm shift of small scale fishers for sustainable income and climate resilience livelihood through aquaculture innovations	Paradigm shift of small scale fishers for sustainable income and climate resilience livelihood through aquaculture innovations in fishing communities strengthened in response to climate change and variability induced stress. At least 200 small scale fishers of which at least 40% are females are benefited and trained on climate resilient aquaculture innovations; A least10 fishing ponds and 10 cages for aquaculture constructed in the pilot villages and at least200 people benefited as direct beneficiaries and 300,000 people as indirect beneficiaries	**Outcome 4:** Increased adaptive capacity within relevant development and natural resource sectors **Outcome 5:** Increased ecosystem resilience in response to climate change and variability **Outcome 6**: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	2.1. No. and type of targeted institutions with increased capacity to minimize exposure to climate variability risks; 3.2. Modification in behavior of targeted population 4.1.Development sectors' services responsive to evolving needs from changing and variable climate; 4.2. Physical infrastructure improved to withstand climate change and variability-induced stress; 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 and	143,779.00
4.Improve ecological and environmental services and functions to sustain climate sensitive rural livelihoods Bunda District	Number and type of ecosystems maintained and improved to enhance their functions and services under climate change and variability-induced stress. At least more than 500 people benefited as direct beneficiaries and 4,000 benefited as indirect beneficiaries from restoration and rehabilitation of at least 100 acres of the degraded ecosystems in the project sites, At least 20 community groups involved in tree planting activities of which 50% are women groups	Outcome 4:Increased adaptive capacity within relevant development and natural resource sectors Outcome 5: Increased ecosystem resilience in response to climate change and variability	3.2. Modification in behavior of targeted population 4.1.Development sectors' services responsive to evolving needs from changing and variable climate 5.1 Ecosystem services and natural Assets maintained or improved under climate change and variability-induced stress 6.1 Percentage of households and communities having more secure (increased) access to livelihood assets	149,256.00

	At least 20,000 houses benefited from planting as direct beneficiaries in 5 Wards of Bunda district			
5.Strengthening institutional capacity and knowledge management on climate change adaptation	Number .and type of knowledge products developed and disseminated Number of district staff and community population trained for effective project and adaptation initiative implementations	Outcome 2: Strengthened Institutional capacity to reduce risks associated with climate-induced Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas Outcome 4:Increased adaptive capacity within relevant development and natural resource sectors	Output 2.1: Strengthened capacity of national and regional centers and networks to respond rapidly to extreme weather events 3.2. Modification in behavior of targeted population Output 2.1: Strengthened capacity of national and regional centers and networks to respond rapidly to extreme weather events	48,355.00
Project Outcome(s)	***Project Outcome Indicator(s)***	***Fund Output***	***Fund Output Indicator***	***Grant Amount (USD)***
1.Enhanced climate resilience for improved access to rural water supply system in selected drought prone agro-pastoral communities of Bunda District	Increased resilience and adaptive capacity of atleast 37,000 people by 2021 and 70,000 by 2050 (as direct beneficiaries, of which over 19,000 are females and 18,000 are males) to climate induced water scarcity in the selected agro-pastoral communities of Bunda District At least 13,369 households of which at least 4,412 are female headed household have access to clean water as direct beneficiaries At least 8 COWSOs established and well managed with members at least 50% being females At least 10 troughs of water for cattle constructed	Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities Output 4: Vulnerable physical, natural, and social assets strengthened in response to climate change impacts, including variability Output 6:Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	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) 4.1.2Number of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by asset types 6.1.1.No. and type of adaptation assets (physical as well as knowledge) created in support of individual- or community- livelihood strategies 6.1.2. Type of income sources for households generated under climate change scenario	501,360.00

2.Improved agricultural productivity, livelihood and agro-ecosystem resilience through climate smart EVA practices in the selected communities of Bunda District	% agricultural infrastructure improved to withstand climate change and variability-induced stresses in selected communities of Bunda District At least 2 small irrigation schemes established in Bunda district, of which at least 1,000 people are direct beneficiaries and 80,000 people are indirect beneficiaries, and 50% of beneficiaries are female Increase food security in Bunda district by 30% benefitting about 60% females and 40% males to befits more than 80,000 people as direct and indirect beneficiaries At least 300 farmers trained of which 50% are women and 50% are men	Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities	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) 4.1.2Number of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by asset types 5.1.1 Number of natural resources assets created ,maintained or improved to withstand conditions resulting from climate variability and change(by type and scale) 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	330,250.00
3.Traditional fishing practices of small scale fishers transformed and fishers' income improved through climate sensitive aquaculture innovations	Paradigm shift of small scale fishers for sustainable income and climate resilience livelihood through aquaculture innovations in fishing communities strengthened in response to climate change and variability induced stress. At least 200 small scale fishers of which at least 40% are females are benefited and trained on climate resilient aquaculture innovations; A least10 fishing ponds and 10 cages for aquaculture constructed in the pilot villages and at least200 people benefited as direct beneficiaries and 300,000 people as indirect beneficiaries	Output 6:Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability Output 4:Vulnerable physical, natural, and social assets strengthened in response to climate change impacts		143,779.00
4.Improved ecological and	Number and type of ecosystems maintained	Output 5.Vulnerable ecosystem services and natural resource	5.1 umber of natural resources assets created ,maintained or improved to withstand conditions	

environmental services and functions to sustain climate sensitive rural livelihoods in Bunda District	and improved to enhance their functions and services under climate change and variability-induced stress. At least more than 500 people benefited as direct beneficiaries and 4,000 benefited as indirect beneficiaries from restoration and rehabilitation of at least 100 acres of the degraded ecosystems in the project sites, At least 20 community groups involved in tree planting activities of which 50% are women groups At least 20,000 houses benefited from planting as direct beneficiaries in 5 Wards of Bunda district	assets strengthened in response to climate change impacts including variability Output 6:Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	resulting from climate variability and change(by type and scale)	149,256.00
1.Enhanced climate resilience for improved access to rural water supply system in selected drought prone agro-pastoral communities of Bunda District	% increased resilience and adaptive capacity to climate induced water scarcity in the selected agro-pastoral communities of Bunda District	Out3: Targeted population groups participating in adaptation and risk reduction awareness activities Output 6:Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events 3.1.1 Number and type of risk reduction actions or strategies introduced	48,355.00

PART 111G. Budget

Include a detailed budget with budget notes, a budget on the Implementing Entity management fee use, and an explanation and a breakdown of the execution costs.

Table 13: Detailed budget for the proposed project

Expected Outputs	**Output budget (USD)**	**Activities**	**Inputs**	**Budget notes**	**Y1 (US$)**	**Y2 (US$)**	**Y3 (US$)**	Total amount (US$)
***Component 1**: Enhancing Climate resilience through water supply system of the drought prone agro-pastoral communities*								
***Outcome 1**: Enhanced climate resilient water management and supply system in vulnerable agro-pastoral communities of Bunda District*								
1.1Climate resilient rural water supply system established in selected drought prone agro-pastoral communities of Bunda district	**447,790.88**	*1.1.7 Rehabilitation of pump houses and installation of submersible water pump at Kasahunga, Mumagunga and Isanju water sources.*	*Construction materials and goods*	1	134,249.57	0.00	0.00	**134,249.57**
		1.1.2 Rehabilitation and improve water storage tanks at Isanju, Namhura, Mumagunga and Kasahunga villages and construct sump tank at Namhura village	*Construction materials*	1	15,043.48	0.00	0.00	**15,043.48**
		1.1.3 Rehabilitate water network system *in Iramba, Neruma, Namhura and Nyamihoro Wards covering Nyamitwebili, Neruma, ,Kasahunga, ,Namhura, Isanju and Mwiruruma villages and make them more climate resilient*	*Construction materials and goods*	1	124,060.87	0.00	0.00	**124,060.87**
		1.1.4 Extension of water network system for Kasahunga and Isanju water sources to cover drought prone communities of Mumagunga, Chamakapo and Mulanda villages in Namhura and Neruma Wards.	*Construction materials and goods*	1	77, 391.30	53,567.39	0.00	**130,958.70**

		1.1.5 Drill boreholes in drought prone villages (Namalebe – Nakatuba, Igundu Nasululi and Lagata) villages uncovered with water systems from Kasahunga and Iramba surface water sources and Install solar energy driven water pumps	*Cost for drilling boreholes and solar related goods*	2	21, 739.13	21,739.13	20,000.00	**63,478.26**
		1.1.6 Construct storage tanks and Water Kiosk/Network for the drilled boreholes	*Construction materials and goods*	1	8,260.86	8,260.86	0.00	**16,521.74**
1.2 *Establishment of Community Owned Water Supply Organization(COWSOs) facilitated and their functional committee members trained on operational and maintenance in Bunda District*	17,047.82	1.2.1 Establish and/or strengthen water governance structures/arrangements (COWSOs by considering gender balance for selection of members of the management team) to better manage water source, equitable and gender sensitive water allocation for human and other uses, and revenue collection and develop by-laws for regulating effective use of water resources and protection of rural water infrastructures	*Village meetings and workshops*	3	5,000.00	5,269.56	0.00	**10,269.56**
		1.2.2 Train selected members from Water Users on operation and maintenance of their climate resilient rural water supply schemes to ensure sustainability.	*Trainings for COWSOs*	4	2,259.42	2,259.42	2,259.42	**6,778.26**
Sub total					**393,274.00**	**85,827.00**	**22,259.00**	**501,360.00**
Component 2: *Improving agricultural productivity, livelihood and enhancing agro-ecosystem resilience through Climate Smart EVA practices*								
Outcome 2: *Climate Smart EVA practices to improve food security through small scale and micro-irrigation schemes enhanced in selected villages of Bunda District Council*								
2.1 Climate Smart EVA practices to improve food security through small scale and micro-irrigation schemes enhanced in selected villages	**340,250.44**	2.1.1 Construct and establish drip irrigation structures/facilities Poly/sim tanks, PVCs, solar pumps and net houses) for intensified horticultural crops and relevant food crops at Mchingondo (Buguma) and Mumagunga villages of Bunda District Council	Materials goods and services	5	12,807.13	17,154.94	4347.83	**44,309.90**
			Labor charges	6	1,086.96	1,086.96	0.00	**2,173.93**

of Bunda district		2.1.2 Construct and establish irrigation structures/facilities of (water tank, PVCs, canals, motorized pump, and electrical transformer) for enhanced field crop (paddy) production at Mchigondo (Buguma) village of Bunda District Council.	Irrigation materials and machinery	7	55,978.26	55,978.26	0.00	**111,956.52**
		2.2.3 Facilitate construction of two post-harvest management centers/warehouses for paddy and sunflower at Mchigondo (Buguma) and Kasuguti villages of Bunda District Council using force account modality.	Materials and goods	8	0.00	20,380.15	20,380.15	**40,680.30**
		2.1.4 Facilitate increased use of EVA practices, drought tolerant and early maturing crops (Cassava and Sunflower) by farmers from Namhula, Mumagunga, Kasuguti,Butimba, Neruma, Chitengule, Nakatuba, Namalebe, Buguma and Igundu villages of Bunda District Council.	Improved seeds and other crop materials such as cassava cuttings Improved and drought tolerant seeds and other crop materials such as cassava cuttings	9	10,060.87	20,000.00	4,347.83	**34,469.57**
		2.1.5 Facilitate availability of crop value addition technologies (modern paddy hulling machine, sunflower seed pressing & oil refinery machine, cassava graters and horticultural drying micro technologies) for the farmer groups particularly for Mchingondo, Mumagunga and Kasuguti in Bunda District Council.	Agricultural machinery and goods	10	0.00	10,869.57	39,486.31	**50,355.88**
		2.1.6 Capacity Building to farmers through training programs on good agronomic practices through farmers field schools, Female Farmers Field Schools, Demo plots,	Village workshops, training meetings, study tours and cross-visits, demo	11	6,773.91	10,773.91	6,773.91	**30,321.74**

		Agroforestry of the selected crops (Cassava, sweet potatoes, paddy, sunflower, horticultural crops, agroforestry crops), operations and maintenance of the constructed/installed irrigation facilities, crop post-harvest management practices and value addition.	plots					
		2.1.7 Facilitate improved local chicken keeping practices for Neruma, Mumagunga, Chingulubhila and Namhura Villages as potential enterprises to generate income and building resilience for the poor households and women groups	Costs associated with the establishment of improved local chickens – keeping-practices including hatchery and incubator machines	12	30,000.00	8,000.00	2,749.56	**46,749.56**
Sub total					**116,707.13**	**144,243.79**	**63,299.52**	**330,250.00**
***Component 3**: Promoting paradigm shift of small scale fishers for sustainable income and climate resilience livelihood through fish farming innovations in selected villages of Bunda District*								
***Outcome 3**: Traditional fishing practices of small scale fishers transformed and' income improved through climate sensitive aquaculture innovation*								
3.1 Traditional fishing practices transformed for improved climate resilient livelihood and sustainable income generating activities in selected villages of Bunda District	**143,778.94**	3.1.1 Construction of 10 earthen ponds sized 20X40 Meters for vulnerable small scale fishing communities (Women and youth groups inclusively) at Buguma and Isanju villages	Machine and Equipment	13	20,565.22	0.00	0.00	**20,565.22**
			Fish pond designer	14	304.35	0.00	0.00	**304.40**
		3.1.2 Introduction of an effective and efficient fish culture techniques using Tilapia cages by Establishing 10 Cages (Sized 5x5x2.5m. each) for vulnerable small scale fishing communities (Women and Youth groups) at Buguma and Isanju villages	Floating Tilapia Cages materials	15	19,583	0.00	0.00	**19,583**
			Cage Construction experts	16	852.20	0.00	0.00	**852.20**
		3.1.3 Procure and introduce 107,000 fingerlings in 10 ponds and 20 cages	Sterilized Tilapia Male fingerlings	17	9,304.35	0.00	0.00	**9,304.35**
		3.1.4 Purchase two Wooden	2 Yamaha HP 9.9	18	7, 826	0.00	0.00	**7826.00**

		Outboard Engine Boats for the farmers at Both Buguma and Isanju Villages	Engines and Two wooden Boats					
		3.1.5 Purchase of Feed for pre-nursery, Nursery, Grow outs/Brooders and Hatchery feeders	Quality Standard Fish Feed	19	11,727.54	11,727.54	11,727.54	**35,182.61**
		3.1.6 Train community on Fish culture Techniques and fishing skills at Cage sites in Lake Victoria	Community training workshop	20	2,028.99	2,028.99	2,028.99	**6,087.00**
			Fish culture techniques training expert	21	183.00	183.00	183.00	**549.00**
		3.1.7 Facilitate establishment of one fish hatchery for tilapia species at Buguma village	Construction Materials and Goods	22	8730.43	0.00	0.00	**8730.43**
			Hatchery designers	23	426	0.00	0.00	**426.00**
		3.1.8 Facilitate construction of a two room building for feed preparation for the established fish hatchery, purchase and enable installation of a pelletizer and Feed mixing machine at Buguma village	Construction materials	24	6,086.13	0.00	0.00	**6,086.13**
			Machines and Goods	25	8,760.87	0.00	0.00	**8,760.87**
		3.1.9 Facilitate introduction of modern techniques for improved fish feeds formulation through use of powder and pallets to promote sustainability.	Fish feed formulation expert	26	213.00	213.00	213.00	**639.00**
		3.1.10 Facilitate study Visit of selected fish farmers on Tilapia Cage farming to appreciate livelihood transformation and available climate sensitive fish farming techniques in the region	Study tour	27	0.00	10,130.43	0.00	**10,130.43**
		3.1.11 Provide fish security management in ponds and Cages at Buguma and Isanju villages	Security guards	28	3,130.43	3,130.43	3,130.43	**9,391.30**
Sub total					**99,721.00**	**32,413.00**	**17,282.00**	**143,779.00**
Component 4: *Improve ecological and environmental services and functions to sustain climate sensitive rural livelihoods in selected rural communities of Bunda District*								
Outcome 4.1. *Improved ecological and environmental services and functions to sustain climate sensitive rural livelihoods in Bunda District Council*								
	139,255.34	4.1.1 Establish and implement	Tree Nurseries for	29	17,391.30	7,391.30	4,629.13	**29,411.73**

4.1.Improve ecological and environmental services and functions to sustain climate sensitive rural livelihoods in selected rural communities of Bunda District		ecological restoration and rehabilitation plans (hills, mountainous and woodland restored and conserved) in selected Wards (Iramba, Neruma, Namhura, Kitengule and Igundu wards)	planting 1, 000,000 tree seedlings in 5 Wards					
			Cost for campaigns and prizes and gifts for competitions	30	2,173.91	4,347.82	1,452.17	**7,973.90**
		4.1.2 Promote improved ecosystem-based income generating activities at Mwiruruma, Isanju, Mumagunga, Kenkombyo, Buguma, Igundu, Namhura, Kasahunga, Sikiro, Nyamitwebili and Namalebe through (a) improved bee keeping activities in woodland, hills and mountainous systems and (b) fruit plants farming	Apiary and Beekeeping Processing tools and machines	31	17,391.30	17,391.30	649.78	**35,432.38**
				32	0.00	15,445.65	0.00	**15,445.65**
			Training and workshops for bee-keeping groups	33	0.00	4,782.60	4,782.60	**9,565.20**
			Construction material and Workshop equipment	34	1,321.73	6,717.82	2,000.00	**10,039.55**
		4.1.3 Mobilize enclosure systems in degraded ecosystems to promote natural regeneration and recovery of ecological functions and explore the use of local/traditional institutions to strengthen management of sensitive ecological systems.	Bi – laws and village environmental committees	35	1,739.13	2,173.91	1,304.34	**5,517.38**
		4.1.4 Engage farmers in tree planting on surrounding residential areas, along streets and roadsides and degraded landscapes and establish ecological schools (3 secondary and 3 primary schools) and villages (4 villages) in selected	School and village nurseries	36	4,347.82	2,173.91	4,347.82	**10,869.55**
			Costs of purchasing improved milk producing cattle for eco-schools and villages	37	7,000.00	10,000.00	8,000.00	**25,000.00**

		wards of Bunda district.						
Sub total					**51,365.00**	**71,424.00**	**26,465.00**	**149,256.00**
Component 5: *Strengthening institutional capacity and knowledge management on climate change adaptation*								
Outcome 5: *Strengthened institutional capacity to reduce risks associated with climate-induced Socio-economic losses and livelihood failures in Bunda district*								
5.1 Capacity of the district and communities in Bunda is strengthened to respond to extreme weather events	**46,355.28**	*5.1.1 Facilitate training to government stakeholders, technical staffs, community groups and civil society in climate risk management and project measures for further scaling up*	Workshops and training materials	38	4,135.85	4,711.95	8,000.00	**16,847.80**
		5.1.2 Communicate and share knowledge generated through project implementation in Bunda District, National and International communities	Communication materials and workshops	39	2,681.16	2,681.16	2,681.16	**8,043.48**
		5.1.3 Sharing project results and lessons learned	Communication materials, Radio and TV talk and documentaries	40	4,384.08	4,362.32	4,362.32	**13,108.72**
		5.1.4 Facilitate provisional of project monitoring and evaluation activities	Monitoring and Evaluation	41	4,000.00	2,355.28	2,000.00	**10,355.28**
Sub total					**15,20100**	**14,111.00**	**17,043.00**	**48,355.00**
Total project cost					**676,269.00**	**311,601.00**	**185,130.00**	**1,293,000.00**

Table 14: Budget notes

#	Description	Budget notes
1	Construction materials and goods	a) constructions materials such as sands, aggregates, cements, timber, iron sheets, paints, enforcement bars, pipes, nails- for rehabilitation water pump houses; b) Construction materials for goods such as water pumps, transformers, electrical, Plastic tanks b) Constructions materials such as sands, aggregates, cements, paints, Wire mesh, nails, et for rehabilitation of water network; b)Construction materials for goods such as pipes, fittings and other construction materials,.
2	*Cost for drilling boreholes and related solar goods*	a) Costs associated for contractual issues to for hydro-geo-physical surveys, physical-chemical and drilling of four boreholes for Namalebe – Nakatuba, Igundu Nasululi and Lagata villages b) Costs associated with purchasing Solar Panels and Solar pumps for the relevant boreholes in Namalebe – Nakatuba, Igundu Nasululi and Lagata villages. The details of specifications of the boreholes will be provided in the inception workshop.
3	*Village meetings and workshops*	The cost to establish four/five COWSOs and establish by laws to facilitate regulating effective use of water resources and protection of rural water infrastructures. Allowance for 100 Participants x $15x 6 meeting/workshop sessions = $9,000; venue and cost for production of by-laws =1,269.56
4	*Trainings for COWSOs*	Training of selected members of the COWSOs on operation and maintenance of their climate resilient rural water supply schemes to ensure sustainability. 20 Participants x $15x 10 training sessions = 3,000.00 Cost of the venue and training materials and cost for training experts= $ 3,778.26
5	Materials goods and services	Materials, goods and services for drip irrigation such as plastic tanks, PVCs, horticultural seeds, net house materials and solar pumps.
6	Labor charges	Costs incurred intended for technical personnel in installation of drip irrigation facilities for intensified horticultural crops and relevant food crops at Mchingondo (Buguma) and Mumagunga villages of Bunda District Council
7	Irrigation materials and machinery	Cost associated with irrigation facilities and power sources namely water reservoir /tank, motorized water pump, plumbing materials like PVCs, canal lining and installation of transformer to allow three phase electric current and allow crop (paddy) production at Mchigondo (Buguma) village of Bunda District Council. Detailed of specifications will be done in the inception phase.
8	Materials and goods	Materials and goods for construction such as cement, sand, aggregates, iron rods/bars, timber, iron sheets, bitumen etc
9	Improved and drought tolerant seeds and other crop materials such as cassava cuttings	Cost for seeds for drought tolerant and early maturing crops (Cassava and Sunflower) for farmers at Namhula, Mumagunga, Kasuguti,Butimba, Neruma, Chitengule, Nakatuba, Namalebe, Buguma and Igundu villages of Bunda District Council.
10	Agricultural machinery and goods	Agricultural implements such as rice hulling machine, sunflower seed pressing machine, sunflower oil refining machine, cassava grator and solar drier technologies
11	Village workshops, training meetings, study tours and cross-visits, demo plots	Costs related to trainings, demos and workshops such as Personnel DSA, transport, conference packages and other training materials for maintenance and operations
12	Costs associated with the establishment of improved local chickens – keeping-practices including hatchery and incubator machines	Costs for 1 (one) modern hatchery and one transformer to be installed at Mumagunga village, incubators, banners, trays, chicken feeds, chicken shelters, and supplying local breed chickens 1000 for Neruma, Mumagunga, Chingulubhila and Namhura Villages.
13	Machines and Equipments	Machine , Equipment and Materials: Cost for buying the Pelletizer and Feed mixer is US $ 8760.87 while, hiring Excavators , purchasing of wheel barrow ,Rakes, wire mesh, Black Iron pipes , Hoes, spades, Bush knives and Pond liners for 10 ponds sized 20x40 costing US $ 20,565.22
14	Fish pond designer	A skilled personnel, who will give the directives on pond constructions at Buguma and Isanju for 10days in Both Villages= US $30.43x10= US $304.40

15	Floating Tilapia Cages materials	Materials used for Constructing Cage frames and Installations (Floating bouy-100ltrs Drums, Nylon ropes, Cage nets and Liners, Pathway-Timbers, Binding wires) for 10 Cages sized 5x5x2.5 meters = US $19,583
16	Cage Construction experts	Two skilled personnel for Designing Cages body Frames, Cage net mending, installation and submerging them within the lake. The work will be completed in 14 days. 2People x 14days x 30.44 = US $ 852.20
17	Sterilized Male Tilapia fingerlings	Under captivity (Cultured conditions) the male Tilapia performs better growth than the female ones. The fingerlings will be introduced in ponds at about 4 fingerlings /m^2 and 100fingerlings/m^3 in Cages with considerably 20% death rates within Cages. A total of 32000 fingerlings, will be planted in Ponds and 75000 in Cages making a total of 107000 fingerlings @ US $ 0.087 = US $ 9,304.35
18	2 Yamaha HP 9.9 Engines and Two wooden Boats	2 Wooden Outboard engines to enhance transportation to the cage sites. Two Boats @ US $ 3, 913.04 = US $ 7,826.09
19	Quality Standard Fish Feed	These are Feed Materials like Cereals(soya),Sunflower and Cotton Seed Cakes, Cassava flour, Rice and Maize brans, Fish-meals for making various feed e. g starters, Growers & Brooder feeds , costing a total of US $ 35,182.61 for the period of three years/ three growth phases/seasons
20	Community training workshop	Training workshops will be Organized in order to equip the Fish farmers with fish culture techniques. The Course will cover establishment, Routine Managements , Handlings (Cages and Ponds) and Fish Restorations within the lake to 60 Fish farmers and 40 Fishermen for 7 days costing 100 people x US $ 8.70 x 7 days = US $ 6087
21	Fish culture techniques training experts	Two Aquaculture experts will imparts fish culture techniques to the local communities(Farmers) and fishermen on Fish restorations at the Cage sites 2 Experts x US $ 30.43 x 7 days = US $ 426
22	Construction Materials and Goods	One Hatchery and Feed preparation Buildings in place (Hatchery for mass production of Fingerlings and Feed preparation building for installation of Pelletizer and Feed mixer Machine also Feed storage). Construction requires Materials (Gravels, Stones, Cements), Timbers, Nails ,Iron sheets, Water pump, Mortars, Bio filters with side ward; 2 brooder ponds ,Recirculating water systems pricing US $ 8730.43 for Hatchery and US $ 6086.13 for Feed preparation Building.
23	Hatchery designers	For the Hatchery to operates, it requires a skilled personnel who will design different system to meet standard The work covers 14 days =1 x US $ 30.43 x 14days = US $ 426
24	Construction materials	Cost for construction materials of a two room building for feed preparation for the established fish hatchery, purchase and enable installation of a pelletizer and Feed mixing machine at Buguma village costing US $ 6,086.13
25	Machines and Goods	Cost for pelletizer and Feed mixing machine at Buguma village
26	Fish feed formulation expert	Qualified personnel for Pelletizer and Feed Mixer Operating Machine, but also to be used in feed ratios interpretations. The feed formulator will work for 7 days in year for 3 years 1x US $30.43 Xx days x3 years = US $639
27	Farmers Capacity building	This will involve a study visit in a modern Tilapia Cage Culture farms in (Kendu bay or Homa bay in –Kenya) 3 Farmers from each village of Isanju and Buguma and 2 Aquaculture specialists making a total of 8 people will be in the route at cost of 250 USD each for 5 days, making total cost of US $ 2,710,000
28	Security guards	Cost associated with provision of security guards for cage and fish pond management during before phasing out of the project and selling the yields from the pond and cages.
29	Tree Nursery	Cost of making 3 tree nurseries with the capacity of raising more than 100,000 tree seedlings for Iramba, Neruma, Kitengule and Igundu Wards (possibility of extending to other wards exist
30	Cost for campaigns and prizes and gifts for competitions	Cost of conducting different competitions to promote awareness to various village and community groups including schools and awards to winners within Community groups, school children and other institutions
31	Apiary	Cost of preparing apiary and making beehives in the selected beekeeping groups
32	Beekeeping	Cost of purchasing beekeeping equipment used to harvest honey and other beekeeping products

	Processing tools and machines	
33	Training and workshops for bee-keeping groups	Cost for hiring experts to deliver beekeeping skills to beekeeper groups and cost for workshop venue and allowances for participants
34	Construction material and Workshop equipment	Cost of constructing workshop shade and buying workshop materials used for beehives making within community level
35	Bi – laws and village environmental committees	Cost of conducting meetings and workshops and hiring lawyers for formulation of Bi-laws in 15 villages in Bunda district in the project areas
36	School and village nurseries for fruit plants	Cost of buying seeds for improved seeds and fruit seedlings and nurseries establishment to the six ecological schools and four villages
37	Costs of purchasing improved milk producing cattle for eco-schools and villages	Cost of purchasing improved local breed of milk producing cattle from National Ranching Company for three primary schools and three secondary schools piloting eco-schools approach and the selected four eco-villages. The cost also involve facilitation of provision of improved of cattle shelters.
38	Workshops and training materials	DSAs for government stakeholders, technical staffs of Bunda District Council and selected Community Representative Training materials and stationaries and workshop venues
39	Communication materials and workshops	Cost of communication materials such as brochures, banners pamphlets and any other communication materials and workshop venues and DSAs
40	Communication materials, Radio and TV talk and documentaries	Cost for sharing project results and lessons learned and other communication materials including documentaries
41	Monitoring and Evaluation	Cost related to Monitoring and Evaluation

Table 15: Executing fee breakdown

Execution activity	**Description and notes**	**US$**
Top ups-salaries and allowances for project personnel	Project Coordinator: Salary allowance/top ups $150 per month x 12 months = $1,800 x 3 years = $5,400	5,400.00
	Assistant Project Coordinator: Salary allowance/top ups $100 per month x 12 months = $1,200 x 3 years = $3,600	3,600.00
	Project Monitoring and evaluation expert: Salary allowance/top ups $100 per month x 12 months = $1,200 x 3 years = $3,600	3,600.00
	Project Accountant: Salary allowance/top ups $100 per month x 12 months = $1,200 x 3 years = $3,600	3,600.00
	Project Procurement Officer: Salary allowance/top ups $80 per month x 12 months = $9,60 x 3 years = $2,880	2,880.00
	Community Development Officer Project: Salary allowance/top ups $80 per month x 12 months = $9,60 x 3 years = $2,880	2,880.00

	Marketing and Business Officer: Salary allowance/top ups $80 per month x 12 months = $9,60 x 3 years = $2,880	2,880.00
	Project Driver: Salary allowance/top ups $80 per month x 12 months = $9,60 x 3 years = $2,880	2,880.00
	Office and administrative assistant: Salary allowance/top ups $50 per month x 12 months = $600 x 3 years = $1,800	1,800.00
Office operation costs	Commputers, Print, Copy and Scan	16,000.00
	Communication costs	1,000.00
	Office consumables and stationaries	5,880.00
	Fuels for project management and field supervisions	8,400.00
Project Steering Committee meetings	Project Steering Committee meetings the initial meeting serves as Inception Workshop): Cost includes DSAs and conference packages	14,040.00
Equipment	For both office and field equipment with one (1) vehicle for Project Monitoring and facilitation of field works	45,160.00
TOTAL		**120,000.00**

Table 17: Implementing Entity Fee

S/No	Description and notes	
1	Overall Coordination and management (staff allowance for project coordination and management staff ,finance, procurement and administrations)	30,000.00
2	Financial management, including accounting, treasury, grant and trust fund management and costs for external audits and other financial and management support	28,000.00
3	Costs associated with the provision of equipment to the Implementing Entity	24,000.00
4	Costs associated with quality assurance and field based quality checks including costs related to travel, DSA	25,000.00
	TOTAL	**107,000.00**

PART III H: Disbursement

Schedule Include a disbursement schedule with time-bound milestones.

	After Signing the Implementation Agreement	***After Year 1(US $)***	***After Y2 (US$)***	***Total***
Scheduled date (tentative)	***June 2021***	***June 2022***	***June 2023***	
Project Funds	*676,269.00*	*311,601.00*	*185,130*	***1,173,000.00***
Execution Fee	*60,000.00*	*30,000.00*	*30,000.00*	***120,000.00***
Implementing Entity Fee	*50,000.00*	*30,000.00*	*27,000.00*	***107,000.00***
Total	***786,269.00***	***371,601.00***	***242,130***	***1,400,000.00***

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

A. Record of endorsement on behalf of the government[17] *Provide the name and position of the government official and indicate date of endorsement. If this is a regional project/programme, list the endorsing officials all the participating countries. The endorsement 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:*

***Ambassador Joseph Sokoine**, Deputy Permanent Secretary, Vice President's Office*	Date*: January 6th, 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 (the Development Vision 2025, Tanzania's second Five year development plan (2016/2021), the Nationally Determined Contributions (NDCs, 2018), the National Climate Change Strategy (URT, 2012), the Tanzania National Adaptation Programme of Action (NAPA, 2007), the First and the Second national Communication to the UNFCCC, the Roadmap of the National Adaptation Plan, and the Bunda District Strategic Plan (2016/2021)) and subject to the approval by the Adaptation Fund Board, commit to implementing the project/programme in compliance with the Environmental and Social 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.	
 ***Fredrick F. Mulinda*** Implementing Entity Coordinator	
Date: *January 17, 2021*	Tel. and email: **+255 753 240 517**, nieaf@nemc.or.tz / kasigazi.koku@gmail.com
Project Contact Person:	
Tel. And Email: +255758985705, ntukuj@gmail.com	

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.

Annex 1: Endorsement letters

UNITED REPUBLIC OF TANZANIA
VICE PRESIDENT'S OFFICE

Permanent Secretary,
Telegram: "MAKAMU", HQ
Telephone: +255 026 2329006
Fax. No. +255 026 2329007
E-mail: ps@vpo.go.tz

Government City,
Mtumba Area,
Vice President's Office Building,
P. O. Box 2502,
40406 DODOMA.

In reply please quote:

Ref No: BA.90/201/01/101

06th January, 2021

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

SUB: **ENDORSEMENT FOR BUNDA CLIMATE RESILIENT AND ADAPTATION PROJECT**

1. In my capacity as designated authority for the Adaptation Fund in the United Republic of Tanzania, I confirm that the above national project proposal is in accordance with the government's national priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in the country.

2. Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be implemented by National Environment Management Council and executed by Bunda District Council.

3. Sincerely,

Sokoine
Ambassador Joseph. E. Sokoine
For: **PERMANENT SECRETARY**

Annex 2: list of participants

KASAHUNGA VILLAGE

S/N	NAME	POSITION	SEX	VILLAGE
1	Mjungu S Makongo	VEO	Male	Kasahunga
2	Hatari Magili	Member	Male	Kasahunga
3	Yuda M Kabalama	Member	Male	Kasahunga
4	Isack Josefu Nyasebwa	Member	Male	Kasahunga
5	Neema Joseph	Member	Female	Kasahunga
6	Vitalis Majura	Member	Male	Kashunga
7	Nyanjura Peter	Member	Female	Kasahunga
8	Boaz Magige	Member	Male	Kasahunga
9	Jumanne Steven	Member	Male	Kasahunga
10	Wisiku Juma	Member	Female	Kasahunga
11	Jamila Jumanne	Member	Female	Kasahunga
12	Mwanne Magesa	Member	Female	Kasahunga
13	Kambarage Wambura	Member	Female	Kasahunga
14	Boniface Majura	Member	Male	Kashunga
15	Peresia Mwizarubi	Member	Female	Kasahunga
16	Makongoro Makaongoro	Member	Male	Kasahunga
17	Beatus Mmasi	Member	Male	Kasahunga
18	Isack Peteris	Member	Male	Kasahunga
19	Baraka Ramadhan	Member	Male	Kasahunga
20	Neema Blasio	Member	Female	Kasahunga
21	Chausiku Bwire	Member	Female	Kasahunga

NAMIBU VILLAGE

S/N	NAME	POSITION	SEX	VILLAGE
1	Deus Tanyora	Member	Male	Namibu
2	Moshi Nyelembe	Member	Female	Namibu
3	Nyabise Magafu	Member	Female	Namibu
4	Restituta Fabian	Member	Female	Namibu
5	Sylvia Daud	Member	Female	Namibu
6	Rael Kasula	Member	Female	Namibu
7	Mektrida Chiyengele	Member	Female	Namibu
8	Paulo Kayowola	Member	Male	Namibu
9	Jackrine Ogora	Member	Female	Namibu
10	Chausiku Petro	Member	Female	Namibu
11	Justini Magesa	Member	Male	Namibu
12	Kezia Magoti	Member	Female	Namibu
13	Beatrice Mafuru	Member	Female	Namibu
14	Boaz Kisika	Member	Male	Namibu
15	Magoti Magoti	Member	Male	Namibu
16	Rachel Paschal	Member	Female	Namibu
17	Nyanyama Maende	Member	Female	Namibu

MUMAGUNGA VILLAGE

S/N	NAME	POSITION	SEX	VILLAGE
1	Majigo Mteja	Member	Male	Mumagunga
2	Magoti Magoti	Member	Male	Mumagunga
3	Olivia Nicholaus	Member	Female	Mumagunga
4	Maijo Boniface	Member	Male	Mumagunga
5	Beatrice Mafulu	Member	Female	Mumagunga
6	Nyafulu Ibrahim	Member	Female	Mumagunga
7	Magesa Magesa	Member	Male	Mumagunga
8	Nyangeta Hezron	Member	Female	Mumagunga
9	Edward Bwire	Member	Male	Mumagunga
10	Paulina Magesa	Member	Female	Mumagunga
11	Josephina Magoti	Member	Feamale	Mumagunga
12	John Maingu	Member	Female	Mumagunga
13	Magesa Magesa	Member	Male	Mumagunga
14	Maijo Majura	Member	Male	Mumagunga
15	Elizabeth Paschal	Member	Female	Mumagunga
16	Doris Mwaja	Member	Female	Mumagunga

NERUMA VILLAGE

S/N	NAME	POSITION	SEX	VILLAGE
1	Nyanjiga Maiga	Member	Female	Neruma
2	Mariana Kwesi	Member	Female	Neruma
3	Bethman Masele	Member	Female	Neruma
4	Halima Zabron	Member	Female	Neruma
5	Yustina Ernest	Member	Female	Neruma
6	Monica Elikana	Member	Female	Neruma
7	Shelida Saimon	Member	Female	Neruma
8	Maximilian Magesa	Member	Male	Neruma
9	Njige Makene	Member	Female	Neruma
10	Shinji Shinji	WEO	Male	Neruma
11	Lubambi Lubambi	VEO	Male	Neruma
12	Josephine Michael	Member	Female	Neruma
13	Nyanjura Magoti	Member	Female	Neruma
14	Benard Boniface	Member	Male	Neruma
15	Pilly Ramadhan	Member	Female	Neruma
16	Wisiku Peter	Member	Female	Neruma

MWIRURUMA VILLAGE

S/N	NAME	POSITION	SEX	VILLAGE
1	Mugeta Masatu	Member	Male	Mwiruruma
2	Mulugure Maiga	Member	Male	Mwiruruma
3	Leonard Paul	Member	Male	Mwiruruma
4	Charles Silass	Member	Male	Mwiruruma
5	Veneranda Maiga	Member	Female	Mwiruruma
6	Tagana Biseko	Member	Male	Mwiruruma
7	Magreth Manyonyi	Member	Female	Mwiruruma
8	Anna Bilale	Member	Female	Mwiruruma

9	Sasita Mlagwi	Member	Male	Mwiruruma
10	Mispina Bonphace	Member	Female	Mwiruruma
11	Bonophace Lucas	Member	Male	Mwiruruma

MCHIGONDO VILLAGE

S/N	NAME	POSITION	SEX	VILLAGE
1	Robert Kituja	Member	Male	Mchigondo
2	Rafael Kibiriti	Member	Male	Mchigondo
3	Elizabeth Samwel	Member	Female	Mchigondo
4	Sistemelda Exavery	Member	Female	Mchigondo
5	Cliford Julius	Member	Male	Mchigondo
6	Jacobo Maiga	Member	Male	Mchigondo
7	Kaleja Shadrack	Member	Male	Mchigondo
8	Boniventure Mugeta	Member	Male	Mchigondo
9	William Ladislaus	Member	Male	Mchigondo
10	Kasada Manyunyi	Member	Male	Mchigondo
11	Dickson William	Member	Male	Mchigondo
12	Kasala Wandwi	Member	Male	Mchigondo
13	George Focuss	Member	Male	Mchigondo

IGUNDU VILLAGE

S/N	NAME	POSITION	SEX	VILLAGE
1	Manumbu Andrea	Member	Male	Igundu
2	Robert Katucha	Member	Male	Igundu
3	Kadogo Gafula	Member	Female	Igundu
4	George Fowe	Member	Male	Igundu
5	Julius Lagira	Member	Male	Igundu
6	Daud Rubuye	Member	Male	Igundu
7	Adam Kazele	Member	Male	Igundu
8	Robert Daud	Member	Male	Igundu
9	Musa Donard	Member	Male	Igundu
10	Nyafuru Paul	Member	Female	Igundu
11	Mafuru Mafuru	Member	Male	Igundu
12	Adolphina Michael	Member	Male	Igundu
13	Rehema Boniphace	Member	Female	Igundu

ISANJU VILLAGE

S/N	NAME	POSITION	SEX	VILLAGE
1	Mtani Mkama	Member	Male	Isanju
2	Charles Maregesi	Member	Male	Isanju
3	Nashon Mtesigwa	Member	Male	Isanju
4	Palapala Julius	Member	Male	Isanju
5	Nyankwingwa Wegoro	Member	Male	Isanju
6	Furaha Kajala	Member	Female	Isanju
7	Melisiana Kuboja	Member	Female	Isanju
8	Benadetah Mululi	Member	Female	Isanju

9	Tumaini Zakayo	Member	Male	Isanju
10	Paulina Juma	Member	Female	Isanju
11	James Njala	Member	Female	Isanju
12	Nyafuru Peteris	Member	Female	Isanju

BUGUMA VILLAGE

S/N	NAME	POSITION	SEX	VILLAGE
1	Tumaini John	Member	Male	Buguma
2	Joyce Robert	Member	Female	Buguma
3	Kadogo Andrea	Member	Female	Buguma
4	Gosbert Lugora	Member	Male	Buguma
5	Kuboja Bakari	Member	Male	Buguma
6	Mkama Mkama	Member	Male	Buguma
7	Nyachiro Magesa	Member	Female	Buguma
8	Maria Masinde	Member	Female	Buguma
9	Zakaria Tumaini	Member	Male	Buguma
10	Samweli Warioba	Member	Male	Buguma
11	Nyamatobe Mululi	Member	Female	Buguma
12	Melisiana Maregesi	Member	Female	Buguma
13	Ladislaus Manyama	Member	Male	Buguma
14	George Shadrack	Member	Male	Buguma
15	Lydia Maingu	Member	Female	Buguma
16	Chiku Nestory	Member	Female	Buguma
17	Jonas Wiliam	Member	Male	Buguma
18	Emmanuel Justian	Member	Male	Buguma
19	Priska Masige	Member	Female	Buguma
20	Mugeta Manyama	Member	Male	Buguma
20	Manyama Manyama	Member	Male	Buguma
21	Exavery Boniface	Member	Male	Buguma
22	Elizabeth Munisi	Member	Female	Buguma
23	Tatu Peter	Member	Female	Buguma
24	Nyasatu Bwire	Member	Female	Buguma
25	Majura Clemence	Member	Male	Buguma
26	Victor Masatu	Member	Male	Buguma
27	Sabina Joseph	Member	Female	Buguma
28	Josephina Mnubi	Member	Female	Buguma
29	Halima Msatu	Member	Female	Buguma
30	Adelick Sprian	Member	Female	Buguma
31	Paulo Jonathan	Member	Male	Buguma
32	Jenista Mafuru	Member	Female	Buguma
33	Baraka Juma	Member	Male	Buguma
34	Sospeter Mafwele	Member	Male	Buguma
35	Adelina Martine	Member	Female	Buguma

NAMHULA VILLAGE

S/N	NAME	POSITION	SEX	VILLAGE
1	Alfayo Bwire	Member	Male	Namhula
2	Malima Samwel	Member	Male	Namhula
3	Godfrey Majura	Member	Male	Namhula
4	Masamaki Mafuru	Member	Male	Namhula
5	Selestine Masenge	Member	Male	Namhula
6	Nyegoro Maganga	Member	Female	Namhula
7	Flora Mabila	Member	Female	Namhula
8	Kulwa Marco	Member	Male	Namhula
9	Daudi Lushange	Member	Male	Namhula
10	Caflane Mado	Member	Male	Namhula
11	Mashanono Malenzo	Member	Male	Namhula
12	Elizabeth Ezekiel	Member	Female	Namhula
13	Leah Fute	Member	Female	Namhula
14	Betransia Thomas	Member	Female	Namhula
15	Donalt Bruno	Member	Male	Namhula
16	Bulilo Mkama	Member	Male	Namhula
17	Abel Manase	Member	Male	Namhula

Annex 3: Summary of gender analysis against project components

Project Component	Gender Risks/Challenges	Proposed mitigation strategies	Benefits
1.Enhancing Climate resilience through water supply system of the drought prone agro-pastoral communities	• Climate induced challenges related to water scarcity are forcing people (more often women and children) to travel longer distances looking for unsafe water • The existing un-protected traditional wells in villages wards expose mostly children and women mostly to water borne diseases especially cholera and dysentery when compared to men. • Gender based conflicts including incidents of abandonment or separation of couples linked to climate change issues such as water scarcity and food shortage • Low level of representation of gender groups in water management system as the current system in the district is dominated by men.	Proper guidelines to establish gender sensitive water governance system to guide representation of women, youth and vulnerable groups in the village water management institutional structure Enable improved access to rural water supply systems and technologies	• Gender sensitive water management institutional structures strengthened /established and functioning • Water governance/by laws to regulate effective use of water and protection of water sources formulated and functioning
2. Improving agricultural productivity, livelihood and	• Low adoption rates of the transformative agricultural interventions by all gender groups	Proper guideline for selection members of farmer and women groups Improve knowledge on	• Enable improved access to Agricultural tools and technologies with aim of transforming exploitive their

enhancing agro-ecosystem resilience through Climate Smart EVA practices	• Elites hijacking the transformative and climate sensitive agricultural interventions • Women and children especially orphans suffer the most and are more vulnerable to food insecurity whenever crop failure happened due to drought and prolonged dry spell periods when compared to men	best farming practices and transform traditional farming system through solid farmers tailored trainings using Farmer Field School Approach and smart micro- irrigation practices	agricultural practices • Establish women based gardens and poultry houses and trainings on FFFS (Female Farmer Field School) – provision of seeds and tools to diversity gender based livelihood systems • Increased use of climate smart crops and promoting intercropping with drought resistant varieties like, sunflower, si, cassava, cereals, sweet potatoes and early maturing crops to increase resilience farming systems
3. Promoting paradigm shift of small scale fishers for sustainable income and climate resilience livelihood through fish farming innovations in selected villages of Bunda District	• Fishery activates are basically perceived as men-based sectors while females are being exploited sexually by only being employed as cheap laborer. • High risk of HIV/AIDS by undertaking wild catch fishing activities with k[limited yields	Engage and promote cage and pond fish farming techniques among women	• Diversified income among fishers and women griups • Promote innovation and participation of women in fish farming • Increased income activities among women and men • Promote fishery ecosystem conservation

4;Improve ecological and environmental services and functions to sustain climate sensitive rural livelihoods in selected rural communities of Bunda District	• Inactive and low participation of women and girls in ecological and environmental based activities and ecological based income generating activities especially marginalization of Women, youth and vulnerable groups	Clear guidelines and by laws on management of the environment and village ecosystems Ensure that all groups are equally represented on managing ecological and environmental quality and involved in restoration activities Proper and inclusive criteria for selection of beneficiaries to ensure 50% of all people involved to implement activities under this component are women	• Increased alternative income generating options, contributing to reduction of income poverty and building climate resilience of vulnerable communities specially women and girls
5. Strengthening institutional capacity and knowledge management on climate change adaptation	• Existence of social, economic and political barriers that limit women to actively engage in climate change adaptation activities which make them to suffer the most whenever climate calamities happen • Low participation by vulnerable groups due to low literacy levels and existence of groups with special/individual interest over others	Proper guidelines on participation of vulnerable groups in capacity building and other project activities will be put in place and adhered to ensure selection of at least 45% of women as beneficiaries for participation in Capacity and knowledge management and other project interventions	• Improved knowledge of village communities, technical staff in Bunda District Council and civil societies on climate change, its impacts and adaptation strategies • Capacities of beneficiaries to implement concrete adaptation actions for climate resilient and sustainable livelihood systems strengthened

			• Demonstration centers, eco-schools and eco-villages for ecosystems management and alternative income generating activities established

Annex 4: Environmental and Social Management Plan (ESMP)

UNITED REPUBLIC OF TANZANIA

BUNDA DISTRICT COUNCIL

Bunda Climate Resilience and Adaptation Project (BCRA-Project)

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) FOR *BUNDA CLIMATE RESILIENCE AND ADAPTATION PROJECT*

December 2019

1. INTRODUCTION

1. 1 Project Background

The project will specifically target the most vulnerable groups who have less resource to adapt to climate change in Bunda and is built on the principles of local empowerment through engagement of vulnerable and grassroots communities such as farmer groups and village governments and community groups. The overall objective of this project is to enhance resilience and adaptive capacity to effects of climate change while reduce vulnerability of selected communities in Bunda District. Specifically, the project will address the following objectives:-

(i) Enhancing Climate resilience for improved access to rural water supply system in selected drought prone agro-pastoral communities of Bunda district;

(ii) Improve agricultural productivity, livelihood and agro-ecosystem resilience through Climate Smart EVA practices;

(iii) Promote paradigm shift of small scale fishers for sustainable income and climate resilient rural livelihood through aquaculture innovations in selected villages of Bunda district;

(iv) Improve ecological and environmental services and functions to sustain climate sensitive rural livelihoods in selected rural communities of Bunda District; and

(v) Strengthening institutional capacity and knowledge management and sharing

The project has the following five (5) components:

Component 1: Enhancing Climate resilience through water supply system of the drought prone agro-pastoral communities

Component 2: Improving agricultural productivity, livelihood and enhancing agro-ecosystem resilience through Climate Smart EVA;

Component 3: Promoting paradigm shift of small scale fishers for sustainable income and climate resilience livelihood through fish farming innovations in selected villages of Bunda District

Component 4: Improve ecological and environmental services and functions to sustain climate sensitive rural livelihoods in selected rural communities of Bunda District; and

Component 5: Strengthening institutional capacity and knowledge management and sharing

The following are expected outcome of the project:

a) Enhanced climate resilient water management and supply system in vulnerable agro-pastoral communities of Bunda District;

b) Improved agricultural productivity, livelihood and agro-ecosystem resilience through Climate Smart EVA practices in selected village communities;

c) Traditional fishing practices of small scale fishers transformed and' income improved through climate sensitive aquaculture innovation;

d) Improved ecological and environmental services and functions to sustain climate sensitive rural livelihoods in Bunda District; and

e) Strengthened institutional capacity to reduce risks associated with climate- induced

1. 2 Project Coordination and Implementation Arrangements

NEMC is the National Implementing Entity (NIE) in the United Republic of Tanzania to the Adaptation Fund will be the Implementing Entity (IE) for the proposed project and Bunda District Council is the Executing Entity (EE) of the project. Bund District Council has established a Project Management Unit (PMU) that is responsible for the day to day management and implementations of the project and for promoting and facilitating stakeholder engagement. The Steering Committee of the project has been established to steer implementations and providing policy guidance to the PMU and the District Council.

1. 3 Project Beneficiaries

The targeted project beneficiaries include mainly the local communities. Such communities include farmers, fisher folks, schools, urban residents, forest adjacent dwellers, and any other rural communities who are vulnerable to climate change effects in Bunda district council. The vulnerable groups including women, the physically challenged, flood and drought victims and HIV/AIDS orphans form a special category of beneficiaries whose interest should be safeguarded by the project implementation team/institution.

1. 4 Components of the ESMP for the BCRA-Project:

The ESMP for the BCRA-Project includes the following components:

(a) Subproject activity;

(b) Potential adverse effects/impacts;

(c) Proposed mitigation measures;

(d) Institutional responsibility for mitigation (including enforcement and coordination);

(e) Monitoring requirements;

(f) Responsibility for monitoring and supervision;

Implementation schedule; and

(g) Cost estimates.

A template of the Environment and Social Management Plan to guide implementers is provided as ***Table 6***

2. PREVAILING POLICY LEGAL AND INSTITUTIONAL FRAMEWORK FOR ENVIRONMENTAL AND SOCIAL IMPACT MANAGEMENT

This section highlights the policies, legal and institutional frameworks for environmental and social impacts management of the proposed projects in the United Republic of Tanzania..Generally, the implementation of this project will be governed by several national guidelines, policies and regulations including National Environmental Policy, 1997, National Water Policy, 2002, Forestry Policy 2002, the National Environmental Management Act 2004, Water Resource Management Act, 2009, National Agriculture Policy 2013, Livestock policy 2004, The National Gender Policy, 2002, Community Development Policy, 1996, The Supply and Sanitation Act, 2009, The HIV and AIDs (Prevention and Control) Act of 2008, Occupational Health and Safety Act, 2003, National Climate Change Strategy 2012, National Biodiversity Strategy and Action Plan (NBSAP) 2015-2020, Water Safety Plan –Resilient to Climate Change for Rural Water Supply Services (WSP-RCC-RWS) 2015, Environmental Impact Assessment (EIA) and Environmental Audit (EA) Regulation (2005) and Water Quality Management Standards Regulations 2007.

The National Environmental Management Act 2004 have provisions that protect and enhance the quality of natural and cultural environment of Tanzania for the benefit of both present and future generations, and assures all citizens a sound and safe environment adequate for their health and wellbeing. It is the overall guiding document on administration and management of environment matters and social safeguards. It provides for legal and institutional framework for sustainable management of environment in Tanzania. It outline principles for management, impact and risk assessment, prevention and control of pollution, waste management, environmental quality standards, public participation, compliance and enforcement. Sections 82(1) and 230(2) (h) and (q) of EMA Cap.191 0f 2004 EIA and AE Regulations, 2005 provide for the procedures to conduct EIA and Audit; and identifies/categorizes projects which are mandatory and non – mandatory to conduct projects environment. According to the National Environmental Management Act (2004) and the Environmental Impact Assessment (EIA) and Environmental Audit (EA) Regulation (2005) and Sectorial Regulations and Guidelines of the United Republic of Tanzania, this project do not do not fall within the First Category of projects that require full EIA, as the proposed interventions of the project possess no significant negative impacts on the environment and to the community. There is no activity under any component which require full EIA as magnitude of impacts are small and location of the interventions to do not require further assessments. However, Impact Assessment (EIA) and Environmental Audit (EA) Regulation (2005) will guide implementation of ESMP during executions of project activities under component 1 to component 4.

The National Water Resource Management Act, 2009, National Environmental Management Act 2004 , National Water Quality Management Standards and Regulations, 2007 and Water Safety Plan –Resilient to Climate Change for Rural Water Supply Services (WSP-RCC-RWS) 2015 , which provide for "Water Use Rights and Permit Standards". The project shall comply with the relevant sections of the Acts, Standards and regulations to ensure sustainable utilization and conservation of water with regards to water supply and micro-irrigation related activities under component 1 and 2. As water supply activities will largely be dominated with rehabilitation and expansion of network systems including localized boreholes, it is not expected that, water user permits shall be required to be reprocessed as was this was granted since 1970s. Possibly, project micro-irrigation-related activities may require some letters and permits for water users, but this will easily processed by the Bunda District Authority through the Water and Agriculture Department. Irrigation interventions in Tanzania are required to adhere to the National Irrigation Act, 2013 (No. 5 of 2013). The Act provides detailed standards and guidelines for farmers and block farming groups to form "Water Harvesting and Irrigation Associations" stressing the need for farmers to work together and manage water resources sustainably. The project will abide to these standards and guidelines, although the same provision do not apply to the small scale/micro-irrigation of the project activities.

The project will abide to Forest Act, 2002 (Act No. 7 of 2002) as well and the Environmental management Act 2004 which provide guidance for reforestation, tree planting restoration, reclamation and rehabilitation of ecosystems and all activities that involve planting of trees and environmental conservation. The fisheries act 2010 which provides guidelines for sustainable fishing activities and aquaculture in Tanzania. The project shall embrace relevant sections of the Fisheries Act, 2010 that are in alignment with Adaptation Fund guidelines. The project shall apply the standards under the National Strategy for Growth and Poverty Reduction (MKUKUTA The NSGRP, 2008, Community Development Policy 1996, National Water Policy 2002and Cooperative Development Policy, 2002 for establishment of community cooperative societies commonly known as SACCOS and Community Water Users Organizations (COWSOs), their operational procedures and relevant gender policies, as well as other standards that protect women, the elderly, children and most vulnerable households. The project will also align with financial planning, management and audit guidelines of the United Republic of Tanzania.
Table below provides key policies, legislation and strategies which will guide the implementation of this ESMP.

Table 1: National Policies, legislation and strategies which implementation of this ESMP

Name of Policy	**Relevance to the proposed project**
National Environmental Policy, 1997	Although, the proposed project is viewed to promote social and environmental integrity, its implementation need to be guided by environmental management tools which promote environmental friendly technologies to support actions under component 1,2 and 3; and for stakeholders involved and gender considerations
National Water Policy, 2002	The policy identifies the importance of water resources to promote social and economic development including for irrigation and water supply for domestic use. It addresses the need to have strong institutional to ensure standards and guidelines are adhered for rural water supply.in construction and service. The policy is more relevant to activities under component 1 and 2
The National Land Policy, 1997	The policy statement provides for the strategic planning and rapid appraisal identification of key planning issues in land and environmental management, and in the provision of housing, infrastructure and services through participatory manner. The policy is more relevant to all activities described under component 1,2 and 3
The National Investment Promotion Policy, 1996	The policy identifies the need to conserve and protect the environment for sustainable development; but also the pledge for provision of environmental standards to be subscribed by all investment projects.
The National Energy Policy 2003	The Policy requires investors to promote environmental impact assessment as a requirement for all energy programmes and projects. Promote energy efficiency and conservation as a means towards cleaner production and pollution control measures. Promote development of alternative energy sources including renewable energies and wood fuel end-use efficient technologies to protect woodlands and biomass energy.
National Sustainable Industrial Development Policy, 1996	The policy advocates sustainable industrial production and waste minimization through cleaner production options
National Strategy for Growth and Poverty Reduction (MKUKUTA The NSGRP, 2008	The NSGRP paper recognizes the roles of industries in poverty eradication, therefore should strategically be established in that order bigger vision with mainstreaming environment as a crosscutting issues.
Tanzania Vision 2025	The Vision recognizes that, Tanzania's economy is highly dependent on the climate, because a large proportion of GDP is associated with climate-sensitive activities, particularly agriculture. It elaborates that, extreme weather related events such as droughts and floods have already led to major economic costs in the country, reducing long- term growth and affecting millions of people and their livelihoods and calls for adaptation actions
Community Development Policy, 1996	Community development is realized when people are enabled with strong and sustainable adaptive capacity to climate change effects and identify their climate related problems and plans ways toward solving them.

	Therefore community member should be involved in planning, decision–making and implementation of development and adaptation initiatives
The National Gender Policy, 2002	The Policy provides for guidelines in establishing and development of gender sensitive plans and strategies in all projects, sectors and institutions; while ensuring that there are equal and quality opportunities for both men and women. This project takes policy guidance on gender to foster its implementation in-line with the AF's environment and social policy
The National Health Policy, 2003	The document addresses the National goals on universal access to safe and clean water; with reduction of malnutrition diseases burden, infant and maternal mortality while increasing life expectancy by promoting environmental health and sanitation. For this to be realized improved environmental cleanliness and monitoring of water quality and safety are a key requirement.
National Agriculture Policy 2013	The objective of the Agriculture policy is to improve food security and alleviate poverty, while promoting integrated and sustainable use and management of natural resources such as land, soil, water and vegetation. It also recognizes and put guidance to promote adaptation and resilience actions in the sector. Activities under component 1,2 and 3 much very much with the directives of this policy.
Livestock policy 2004	Recognize that Tanzania is a low-income rural economy, with livestock contributing 30% to agricultural value added and 7% to and to Poverty reduction, and 99% of the livestock stock is in the hands of small farmers and pastoralists who are vulnerable to impacts of climate change. Activities under component 2 and 3 will be implemented in line with directives of this policy.
Forestry Policy 2002 under review	The policy recognizes that, climate change impacts affect many forest and ecosystem processes. Is guides to protecting and conserving biodiversity through application of best practices in soil and water conservation; expanding forest cover and use of adaptive species as well as linking conservation areas as vital measures in adapting to climate change and ensuring continuity in the availability of ecosystem goods and services hence improving the livelihoods of Tanzanian. It also promotes bee keeping and tree planting as potential alternative for livelihood improvement as adaptation measures
National Climate Change Strategy 2012	This Strategy has been developed with a Vision to enhance climate resilience in Tanzania and reduce the vulnerability of natural and social systems to climate change. The Mission is to establish efficient and effective mechanisms to address climate change adaptation and achieve sustainable national development through mitigation actions with enhanced international cooperation. The goal of this Strategy is to enable Tanzania to effectively adapt to and participate in global efforts to mitigate to climate change with a view to achieving sustainable economic growth in the context of the Tanzania's national development blueprint, Vision 2025; Five Years National Development plans; and national cross sectoral policies in line with established international policy framework.

	The strategy aims to build the capacity of the nation to adapt to climate change impacts and to enhance resilience of ecosystems to the challenges posed by climate change including enhance public awareness on climate change adaptation issues
NDCs 2020-2025	Guided by the Paris Agreement Work Programme adopted at COP_{24} focusing on the NDCs of the Tanzania intends to contributing to reductions in climate vulnerability and enhance long-term resilience to the adverse impacts of climate change; In doing so, it will significantly reduce the impacts of spatial and temporal variability of rainfall including droughts and floods which have long-term implications to all productive sectors and ecosystems, particularly the agricultural sector. It puts, adaptation measures which are expected to significantly reduce the risks of climate related disasters compared to the current situation and enhance access to clean and safe water from 60% to above 90% of the total population in both rural and urban areas and call the government to put in place adaptation plans to all levels of government structures including at village levels
National Environmental Management Act Cap 191 of 2004 (EMA, 2004)	An overall guiding document on administration and management of environment matters and social safeguards. It provides for legal and institutional framework for sustainable management of environment in Tanzania. It outline principles for management, impact and risk assessment, prevention and control of pollution, waste management, environmental quality standards, public participation, compliance and enforcement The Act, further provides the basis for implementation of international instruments on environment. The proposed project do not conflict with any provisions of this Act. However, EMA, 2004 will guide its implementations as it promotes actions geared to enhance climate resilient in Tanzania
National Biodiversity Strategy and Action Plan (NBSAP) 2015-2020	Tanzania is one of the twelve mega-diverse countries of the world endowed with different natural ecosystems that harbor a massive wealth of biodiversity. The country hosts 6 out of the 25 world renowned biodiversity hotspots hosting more than one-third of the total plant species on the continent and about 20% of the large mammal population. The Biodiversity wealth contributes significantly to the sociocultural, economic and environmental goods and services to the country and peoples` livelihood. The NBSAP 2015-2020 highlights the value and contribution of biodiversity to human well-being; the causes and consequences of biodiversity loss; legal and institutional framework; lessons learned; national biodiversity targets; strategies and actions needed to mainstream biodiversity into development, poverty reduction and natural resource management plans. NBSAP 2015-2020 has goals to: a) *Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society; b) Reduce the direct pressures on biodiversity and promote sustainable use c); To improve the status of*

	biodiversity by safeguarding ecosystems, species and genetic diversity; d) Enhance the benefits to all from biodiversity and ecosystem services; and e) Enhance implementation through participatory planning, knowledge management and capacity building. This project will promote ecosystems and biodiversity conservations through actions under component 2, 3 and 4.
Water Resource Management Act, 2009	The Act provides for the principles of integrated sustainable water resources management (precautionary approach, polluter pays principle, principle of ecosystem management, principle of public participation, principle of international cooperation and the principle of common but differentiated responsibilities). The Act, in Sect.8 and Sect.9 further provides for Strategic Environmental Assessment and Environmental Impact Assessment practice with respect to EMA Cap.191 of 2004. It also identifies the importance of water resources to promote social and economic development including for irrigation and water supply for domestic use. It addresses the need to have strong institutional to ensure standards and guidelines are adhered for rural water supply.in construction and service. Water Resource Management Act, 2009 is more relevant to activities under component 1 and 2
The Supply and Sanitation Act, 2009	This Act has several provisions on the right of every citizen to have access to efficient, effective and sustainable water supply and sanitation services; while taking into account the need to protection and conservation of water resources. It also addresses provisions of safe and clean water for rural villages and combat the effects of climate induced water scarcity in vulnerable communities.
Employment and Labor Relation Act, 2004	Prohibits employment of children less than 18 years of age, stipulated types of contracts that can be entered with employees. The Act makes provisions for core labor rights; establishes basic employment standards, provides a framework for collective bargaining; and provides for the prevention and settlement of disputes. Activities under Component 1,2 and 3 will involve employment of communities hence this Act will be adhered and obeyed by the Project Management Unit
Occupational Health and Safety Act, 2003	The law deals with the protection of human health from occupational hazards. Among other provisions, it requires the employer to ensure safety of workers by providing appropriate safety gear at work place. Part V of the Act emphasizes the provision of adequate clean, safe and wholesome drinking water, sufficient and suitable sanitary conveniences and washing facilities in work places. This project will Obey all relevant provisions of this Act

The National Land Act Cap 113, 2002	The administration of land, land allocation and occupation in to public land and general land, village land and reserved land. The Act provides that hazardous land is characterized of danger or degradation of or environmental destruction, if developed. Under this Act, the right to occupancy is liable; though require prompt payment fees or compensation in case of acquisition from owner. The proposed project will not occupy any land for investments. It is not planning to resettle any person during its implementations or its any phase of its lifetime.
The HIV and AIDs (Prevention and Control) Act of 2008	Employer is required to coordinate a workplace programme on HIV and AIDS, for the purposes of prevention the spread but also serving the already infected without stigma. Activities under component 1, 2, 3 and 4 empowers vulnerable and marginalized groups and girls who are vulnerable for new HIV and AIDS affections. This project improve the life quality and living standards of those community groups through income generating activities, water supply and improved farming systems
Workers Compensation Act No.20, 2008	The Act provides for compensation to employees for disablement of death or injuries or resulting from injuries or diseases sustained or contracted in the course of employment. Workers may be exposed to unforeseen hazards or environment risk during execution of activities under Component 1, 2 and 3, therefore the Act is relevant to this project and will guide executions of project activities.
EIA and Audit Regulations, 2005	Made Under Sections 82(1) and 230(2) (h) and (q) of EMA Cap.191 0f 2004, these Regulations provides for the procedures to conduct EIA and Audit; it categorizes the EIA mandatory and non – mandatory projects EIA. The Regulations, further depicts the writing and contents of EIS document. However, since this project has no significant negative impacts on the environment and to the community, no EIA is proposed to be conducted.
Environmental Hazardous Waste Regulation, 2009	The Regulations provides that hazardous wastes should be managed properly during storage, packaging, labeling, transport and disposal processes. It should be treated at factory level before disposal or discharge. This project will not use any hazardous materials to attract any disposal attentions.
Water Quality Management Standards Regulations 2007	These Regulations sets procedures for protecting human health and conservation of the environment; enforce minimum water quality standards prescribed by the National Environmental Standards Committee (NESC); enable NESC to determine water usages for the purposes of establishing environmental quality standards and values for each usage; and ensure all the discharges of pollutants take account the ability of the receiving water to accommodate without detriment to the uses specified for the waters concerned. The proposed water supply is expected to meet the standards described in these regulations

Table 2: Relevant regional and International Conventions

Name of International Conventions , Protocols and Agreement	**Relevance to the proposed project**
United Nations Convention on Biological Convention (UNCBD)	The United Nations Convention on Biological Diversity (CBD) was negotiated under the patronage of the United Nations Environment Programme (UNEP). It was opened for signature at the June 1992 UN Conference on Environment and Development (UNCED) and entered into force on 29 December 1993, ninety days after the 30th ratification. As of October 1998, more than 170 countries had become Parties. The three goals of the CBD are to promote the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising out of the utilization of genetic resources. All partner Sates are signatory of this convention which was ratified by the government in 1993. The convention calls for the adoption of national strategies, plans and programmes for the conservation and sustainable use of biological diversity into their relevant sectoral and cross-sectional plans, programmes and policies. One of the tools that are prescribed for the management of biodiversity is environmental assessment. Article 14 of the convention deals with impact assessment and minimizing of adverse impacts of activities that are likely to cause significant adverse effects on biological diversity (Glowka, L, et al, 1992). The Convention contains a number of provisions of particular importance to indigenous peoples. These provisions are contained in Articles 8(j), 10(c), 17.2 and 18.4. Of these, Article 8(j) is regarded as the core provision. It calls upon Contracting Parties to respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities relevant to the conservation and sustainable use of biodiversity, subject to national legislation. The Convention encourages Parties to promote the wider application of such knowledge, innovations and practices with the approval and involvement of the indigenous peoples concerned. Article 8(j) also requires that benefits arising from the application of traditional knowledge, innovations and practices should be shared equitably with the indigenous communities concerned. The Convention does not use the term “indigenous peoples”, but refers to them in terms of “indigenous and local communities embodying traditional lifestyles”. This phrase is interpreted to include the people around the world who have not adopted industrialized practices to exploit agricultural, forest, animal and fisheries resources. Article 10, which deals with the sustainable use of components of

	biological diversity, requires that each Contracting Party protect and encourage the use of biological resources in accordance with traditional cultural practices that are compatible with conservation and sustainable use requirements. This Article has important implications for cultural survival, since particular species form the spiritual and economic focus of many indigenous cultures. The continued customary use of such species is therefore essential to the existence of such cultures. This project is expected to conserve biodiversity and promote improved ecosystem functions and services, mainly through the proposed actions under component 3 and 4
United Nations Framework Convention on Climate Change (UNFCCC)	The United Nations Framework Convention on Climate Change (UNFCCC) provides the basis for global action "to protect the climate system for present and future generations". The Convention on Climate Change sets an overall framework for intergovernmental efforts to tackle the challenge posed by climate change. It recognizes that the climate system is a shared resource whose stability can be affected by industrial and other emissions of carbon dioxide and other greenhouse gases. The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner. The convention promotes parties to take both adaptation and mitigation actions. The proposed project is well in line with actions proposed under the UNFCCC
Indigenous and Tribal Peoples Convention	This convention was adopted on 27 June 1989 by the General Conference of the International Labour Organisation at its seventy-sixth session and came into force on 5 September 1991. Article 4 of the convention calls for the adoption of measures to safeguard persons, institutions, property, labour, cultures and environment of the peoples concerned. In applying the provisions of this convention, the social, cultural, religious and spiritual values and practices of these peoples is to be recognised and protected, and an account taken of the nature of the problems which face them both as groups and as individuals. The convention also provides for the respect of the values, practices and institutions of indigenous peoples. This convention is related with articles 8(j), 10(c), 17.2 and 18.4 of the convention on biological diversity which recognizes the role of

	indigenous people in the conservation of biodiversity. This convention is not such relevant to this ESMP due to absence of indigenous communities in the project area. However, both communities are considered to be local communities and native to the proposed project sites. Part 2 of the convention, Article 13 calls for Partner Sates to respect the special importance for the cultures and spiritual values of the peoples concerned of their relationship with the lands or territories, or both as applicable, which they occupy or otherwise use, and in particular the collective aspects of this relationship. Article 14 on the rights of ownership and possession is concerned over the lands which they traditionally occupy and calls for recognition of such areas. In addition, the convention calls for measures to be taken in appropriate cases to safeguard the right of the peoples concerned to use lands not exclusively occupied by them, but to which they have traditionally had access for their subsistence and traditional activities and particular attention to be paid to the situation of nomadic peoples and shifting cultivators in this respect.
United Nations Convention to Combat Desertification	The objective of the United Nations Convention to Combat Desertification (UNCCD) is to combat desertification and to mitigate the effects of droughts in seriously affected countries, especially those in Africa. It seeks to achieve this objective through integrated approaches to development, supported by international cooperation and partnership arrangements, in affected areas. It lays emphasis on long term strategies to focus on improved productivity of land and the rehabilitation, conservation and sustainable management of land and water resources, leading to improved living conditions, in particular at the community level. The proposed project is designed to implement the requirements of the UNCDD)
The Paris Agreement	The Paris agreement Acknowledge that climate change is a common concern of humankind, Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity and promotes actions towards adaptation and mitigation contributions, and establishes the Nationally Determined Contributions (NDCs). This project is well reflecting the needs and guides of the Paris Agreement through Components 1,2,3,4 and 5. It contributes to global adaptation and mitigation efforts.

3. GUIDANCE FOR IMPLEMENTING ENTITIES ON COMPLIANCE WITH THE ADAPTATION FUND ENVIRONMENTAL AND SOCIAL POLICY

The Adaptation Fund (AF) has developed guidance on Environmental and Social Policy (ESP), approved in November 2013 and revised in March 2016, which ensures that projects and programmes supported by the Fund promote positive environmental and social benefits, and mitigate or avoid adverse environmental and social risks and impacts. "Managing these risks is integral to the success of the projects/programmes and the desired outcome". The guideline has 15 principles. Out of these 15 principles; this project found the following 9 principles are relevant to the proposed project. These are Principle 1: Compliance with the Law; Principle 2: Access and Equity; Principle 3: Marginalized and Vulnerable Groups; Principle 5: Gender Equality and Women's Empowerment; Principle 6: Core Labor Rights Principle 9: Protection of Natural Habitats; Principle 10: Conservation of Biological Diversity; and Principle 12: Pollution Prevention and Resource Efficiency; . This ESMP describes how this project will address and comply to to the AF guidelines. The Adaptation guidelines and Principles are elaborated in detail in ***Table 3.***

Table 3: Principles to Guide Screening and Management of Environmental and Social Impacts of BCRA-Project planned activities

Principle 1: Compliance with the Law	Projects/programmes supported by the Fund shall be following all applicable domestic and international law. In this regards, the Implementing Entity (IE) will ensure that the project/programme comply with applicable domestic and international law as described at section 2 above. In support of the Proposal, the IE will provide, when relevant, a description of the legal and regulatory framework for any project activity that may require prior permission (such as planning permission, environmental permits, construction permits, permits for water extraction, emissions, and use or production or storage of harmful substances). For each such a requirement, the IE will describe the current status, any steps already taken, and the plan to achieve compliance with relevant domestic and international laws.
Principle 2: Access and Equity	Projects/programmes supported by the Fund shall provide fair and equitable access to benefits in a manner that is inclusive and does not impede access to basic health services, clean water and sanitation, energy, education, housing, safe and decent working conditions, and land rights. Projects/programmes should not exacerbate existing inequities, particularly with respect to marginalized or vulnerable groups. The process of allocating access to project/programme benefits should be fair and impartial. A fair process treats people equally without favouritism or discrimination, and an impartial process treats all rivals or disputants equally. Furthermore, the project/programme will be designed and

	implemented in a way that will not impede access of any group to the essential services and rights mentioned in the Principle. Possible elements that may be considered The IE can demonstrate compliance of the project/programme by describing the process of allocating and distributing project/programme benefits, and by showing how this process ensures fair and impartial access to benefits. It may also state clearly that there will be neither discrimination nor favouritism in accessing project/programme benefits. The IE may demonstrate that the project/programme does not impede access of any group to the essential services and rights indicted in the principle. ESP Guidance document 7 In addition, the project/programme can use a risk analysis to identify and assess the risk of impeding access to essential rights and services, and of exacerbating existing inequalities. The IE may conduct stakeholder mapping in order to identify the potential beneficiaries, rivals, disputants, marginalized, or vulnerable people.
Principle 3: Marginalized and Vulnerable Groups.	Projects/programmes supported by the Fund shall avoid imposing any disproportionate adverse impacts on marginalized and vulnerable groups including children, women and girls, the elderly, indigenous people, tribal groups, displaced people, refugees, people living with disabilities, and people living with HIV/AIDS. In screening any proposed project/programme, the implementing entities shall assess and consider particular impacts on marginalized and vulnerable groups. Impacts on marginalized and vulnerable groups must be considered so that such groups do not experience adverse impacts from the project/programme that are disproportionate to those experienced by others. Marginalized groups are groups of people who are excluded from the normal economic and social fabric of societies, thus lacking access to basic essential services and facilities. Furthermore, they lack the means to improve themselves (motivation, social capital, skills and knowledge) and have low resilience. Vulnerable groups are groups of people unable or with diminished capacity to anticipate, cope with, resist, and recover from the impacts of (external) pressures, facing a higher risk of poverty and social exclusion than the general population. Vulnerability can stem from belonging or being perceived to belong to a certain group or institution, and is a relative and dynamic concept. Using accepted methods based on disaggregated data, where possible, the IE should identify and quantify the groups mentioned in the principle (children, women and girls, the elderly, indigenous people, tribal groups, displaced people, refugees, people living with disabilities, and people living with HIV/AIDS) as well as any groups identified additionally such as seasonal migrants or illegal aliens. If any are present, the IE should: • Describe the characteristics of the marginalized or vulnerable

	groups. • Identify adverse impacts that each marginalized and vulnerable group are likely to experience from the project/programme, taking into consideration the specific needs, limitations, constraints and requirements of each group. For example, a small detour or the construction of a minor obstacle for most able-bodied people could be an insurmountable obstacle to wheelchair users or persons with certain disabilities. These are examples of disproportionate adverse impacts. • Describe how the impacts are not disproportionate compared to no marginalized and non-vulnerable groups, or how they can be mitigated or prevented so as not to be disproportionate. These mitigation measures could be design or operational features of infrastructure, or access guarantees to ESP Guidance document 8 project benefits for those without complete administrative files such as refugees and internally displaced persons or tribal groups. • Describe monitoring that may be needed during project/programme implementation for the possible occurrence of disproportionate adverse impacts on marginalized and vulnerable groups, as situations may change over time (e.g. the arrival of refugees or internally displaced persons).
Principle 4: Human Rights	Projects/programmes supported by the Fund shall respect and where applicable promote international human rights. The Universal Declaration of Human Rights (UDHR) of 10 December 1948 provides a common standard of achievements for all peoples and all nations by setting out fundamental human rights to be universally protected. A number of human rights bodies were created based on the UN Charter, including the Human Rights Council, and under the international human rights treaties to monitor their implementation. The Office of the High Commissioner for Human Rights (OHCHR) supports the different human rights monitoring mechanisms in the United Nations system.8 Promotion of human rights in the project/programme will be achieved by creating awareness with all involved in the project/programme operations, including design, execution, monitoring, and evaluation, about the Universal Declaration of Human Rights as an overarching principle in the implementation of the project/programme. The text of the UDHR is freely available in 438 languages.9 Possible elements that may be considered Information that the IE may consider when assessing the project/programme potential risks with regard to this principle: When the host country or countries of the project/programme are cited in any Human Rights Council Special Procedures, be they thematic10 or country11 mandates, the IE may provide an overview of the relevant human rights issues that are identified

	in the Special Procedures and describe how the project/programme will address any such relevant human rights issues. • Human rights issues should be an explicit part of consultations with stakeholders during the identification and/or formulation of the project/programme. The findings on human rights issues of the consultations should then be included in the project/programme document, and details of the consultations added as an annex. 8 The Human Rights Council uses so-called Special Procedures, which are mechanisms to address either specific country situations or thematic issues in all parts of the world. Special Procedures' mandates usually call on mandate-holders to examine, monitor, advise and publicly report on human rights situations in specific countries or territories, known as country mandates, or on major phenomena of human rights violations worldwide, known as thematic mandates. There are 30 thematic mandates and 8 country mandates. All report to the Human Rights Council on their findings and recommendations. 9 http://www.ohchr.org/EN/UDHR/Pages/SearchByLang.aspx 10 http://www.ohchr.org/EN/HRBodies/SP/Pages/Themes.aspx 11 http://www.ohchr.org/EN/HRBodies/SP/Pages/Countries.aspx ESMP Guidance document • Even if the country or countries where the project/programme will be implemented is not a Party to any of the nine-core international human rights treaties,12 compliance with UDHR, at a minimum, will be monitored.
Principle 5: Gender Equality and Women's Empowerment.	Projects/programmes supported by the Fund shall be designed and implemented in such a way that both women and men 1) have equal opportunities to participate as per the Fund gender policy; 2) receive comparable social and economic benefits; and 3) do not suffer disproportionate adverse effects during the development process. In many societies, different roles are allocated to men and women based on cultural, traditional, religious, or other grounds. Gender equality refers to the equal rights, responsibilities, opportunities and access of women and men and boys and girls as well as the equal consideration of the respective interests, needs, and priorities. To ensure gender equality, measures often need to be taken to compensate for or reduce disadvantages that prevent women and men from otherwise operating on an equitable basis. Gender equality and women's empowerment must be applied in the project/programme design and its implementation regardless of the legal and regulatory framework in which the project/programme is set. Principle 5 is guided by Article 2 of the United Nations Framework Convention on Climate Change

	(UNFCCC), which refers to "anthropogenic interaction" — therefore interaction of women and men — within the climate system. The UNFCCC has adopted a number of decisions on gender since 2001. The Paris Agreement acknowledged that Parties in their climate actions should be guided by respect for human rights, gender equality and the empowerment of women in its Preamble while stressing the importance of following "a country-driven, gender-responsive, participatory and fully transparent approach" for adaptation action in Article 7(5). Principle 5 is intended to be consistent with other international conventions, in particular with the Universal Declaration of Human Rights (UDHR), the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), the International Labour Organization (ILO) core conventions, the Millennium Development Goals (MDGs) and follow-up Sustainable Development Goals (SDGs), and the 2030 Agenda for Sustainable Development. 13 The design and implementation of the project/programme should ensure that it: 1) Does not include elements that are known to exclude or hamper a gender group based on legal, regulatory, or customary grounds 2) Does not maintain or exacerbate gender inequality or the consequences of gender inequality. For example, unequal access to education based on gender may result in lower literacy rates among the disadvantaged group. This lack of literacy may, as a secondary effect of gender inequality, limit access to benefits or increase adverse effects of the project for that particular group. Possible elements that may be considered Information that may be considered by the IE when assessing the potential risks with regard to this principle: 12 http://www.ohchr.org/EN/ProfessionalInterest/Pages/CoreInstruments.aspx 13 https://sustainabledevelopment.un.org/post2015/transformingourworld ESMP Guidance document • An analysis of the legal and regulatory context with respect to gender equality and women's empowerment in which the project/programme will take place will identify any obstacles to compliance. In addition, analysis of the cultural, traditional, religious, or any other grounds that might result in differential allocation of benefits between men and women, or of the disproportionate adverse impacts from the project/programme may be appropriate. • Actively pursue equal participation in project/programme activities and stakeholder consultation. Ensure that all positions in the project/programme are effectively equally accessible to men and women, and that women are encouraged to apply and take up positions.

	• The project/programme design and implementation arrangements will ensure equal access to benefits and that there are no disproportionate adverse effects. This may be achieved by any appropriate means, including, e.g Conducting a gender analysis of the sector the project/programme will support; • Describing the current situation of the allocation of roles and responsibilities in the project/programme sector or area; • Showing how the project/programme will pro-actively take measures to promote gender equality e.g. by organising separate working groups or conducting separate stakeholder consultations at times and locations conducive to soliciting opinions of all.
Principle 6: Core Labour Rights.	Projects/programmes supported by the Fund shall meet the core labour standards as identified by the International Labour Organization. The ILO core labour standards are stated in the 1998 ILO Declaration of Fundamental Principles and Rights at Work. 14 The Declaration covers four fundamental principles and rights, which are further developed in eight fundamental rights conventions: 15 ▪ Freedom of association and the effective recognition of the right to collective bargaining (conventions ILO 87 and ILO 98); ▪ Elimination of all forms of forced or compulsory labour (conventions ILO 29 and ILO 105); ▪ Elimination of worst forms of child labour (conventions ILO 138 and ILO 182); 16 ▪ Elimination of discrimination in respect of employment and occupation (conventions ILO 100 and ILO 111). Regardless of whether the countries where Fund's projects/programmes are implemented have ratified the conventions, in the context of the Fund's 14 More information on the core labour rights can be found at http://www.ilo.org/declaration/lang-- en/index.htm 15 The full text of the eight conventions (ILO Conventions 29, 87, 98, 100, 105, 111, 138 and 182) is available from the ILO information system on international labour standards http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:1:0 16 ILO 182 includes not employing children in forced, economically exploitive or hazardous work; or in a way that interferes with educations or is harmful to health or physical, mental, spiritual, moral, or social development. ESP Guidance document 11 project/programme operations the IE will respect, promote, and realize in good faith the principles mentioned above and ensure that they are respected and realized in good faith by the EE and other contractors. Where applicable, the project/programme will incorporate the ILO core labour standards in the design and implementation of the project/programme and create awareness with all involved on how these standards apply. The IE will summarize in the Proposal how they are ensuring that the EE is implementing the ILO core

	labour standards. Possible elements that may be considered Information the IE may consider when assessing the project/programme potential risks with regard to this principle: • If the project/programme host country has ratified the eight ILO core conventions, the risks involved may be smaller. National compliance makes it more likely that a project/programme can and will achieve compliance. • The latest ILO assessments of application of the standards in the project/programme country is available in the reports of the two ILO bodies, The Committee of Experts on the Application of Conventions and Recommendations and The International Labour Conference's Tripartite Committee on the Application of Conventions and Recommendations. Other assessments by reputable sources (e.g. the World Bank or regional development banks) may also be used. • Past/present/planned ILO assistance to meet the standards through social dialogue and technical assistance. • Information on any ILO Special procedures relevant to the Member nation or to the project/programme, including details on the triggering representation or complaints. • Demonstration on how the ILO core labour standards will be incorporated in the design and the implementation of the project/programme, as appropriate. • In the case of problematic assessments by ILO of compliance or in the case of Special procedures at the national level, the IE will provide information on how these issues will be addressed, if they are relevant to the project/programme. Reference may be made to a monitoring process during project/programme implementation for future possible problematic ILO assessments or new Special procedures.
Principle 7: Indigenous Peoples	**.** The Fund shall not support projects/programmes that are inconsistent with the rights and responsibilities set forth in the UN Declaration on the Rights of Indigenous Peoples and other applicable international instruments relating to indigenous peoples. The 2007 UN Declaration on the Rights of Indigenous Peoples (UNDRIP) has its legal foundation in ILO Convention 169 concerning Indigenous and Tribal Peoples in Independent Countries. As part of the system of thematic Special Procedures, the Human Rights Council has appointed a Special Rapporteur on the rights of indigenous ESP Guidance document 12 peoples. The Special Rapporteur promotes good practices, reports on the overall human rights situations of indigenous peoples in selected countries, addresses specific cases of alleged violations of the rights of indigenous peoples, and conducts or contributes to thematic studies. "Other applicable international instruments relating to indigenous peoples" means any treaties, conventions, protocols, or other international instruments related to indigenous peoples to which the project/programme country is a party and that are currently in force. These include but are not limited to the

	following United Nations (UN) conventions: 17 ▪ Convention against Torture and Other Cruel, Inhuman, or Degrading Treatment or Punishment; ▪ Convention on the Elimination of All Forms of Discrimination against Women; ▪ Convention on the Rights of the Child; ▪ International Covenant on Civil and Political Rights; ▪ International Covenant on Economic, Social, and Cultural Rights; ▪ International Convention on the Elimination of All Forms of Racial Discrimination. If indigenous peoples are present in the project/programme implementation area the IE will: 1) Describe how the project/programme will be consistent with UNDRIP, and particularly with regard to Free, Prior, Informed Consent (FPIC) 18 during project/programme design, implementation and expected outcomes related to the impacts affecting the communities of indigenous peoples. 2) Describe the involvement of indigenous peoples in the design and the implementation of the project/programme, and provide detailed outcomes of the consultation process of the indigenous peoples. 3) Provide documented evidence of the mutually accepted process between the project/programme and the affected communities and evidence of agreement between the parties as the outcome of the negotiations. FPIC does not necessarily require unanimity and may be achieved even when individuals or groups within the community explicitly disagree. 4) Provide a summary of any reports, specific cases, or complaints that have been made with respect to the rights of indigenous peoples by the Special Rapporteur and that are relevant to the project/programme. This summary should include information on subsequent actions, and how the project/programme will specifically ensure consistency with the UNDRIP on the issues that were raised. Possible elements that may be considered 17 Links to these conventions are available at www2.ohchr.org/english/law. The ratification status of each convention by country is available at http://treaties.un.org/Pages/Treaties.aspx?id= 4&subid=A&lang=en 18 Free, Prior, Informed Consent (FPIC) is the principle that a community has the right to give or withhold its consent to proposed projects that may affect the lands they customarily own, occupy or otherwise use. ESP Guidance document 13 Information that the IE may consider when assessing the project/programme potential risks: • Status of ratification of ILO Convention 169 by the country or countries in which the project/programme will be implemented. • Project/programme consistency with the UNDRIP may further be enhanced by creating awareness about the rights of indigenous peoples and how it is a general principle in the implementation of the project/programme.
Principle 8: Involuntary Resettlement.	Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids or minimizes the need for involuntary resettlement. When limited involuntary resettlement is unavoidable, due

	process should be observed so that displaced persons shall be informed of their rights, consulted on their options, and offered technically, economically, and socially feasible resettlement alternatives or fair and adequate compensation. Involuntary resettlement refers to both physical displacement (relocation or loss of shelter) and to economic displacement (loss of assets or access to assets that leads to loss of income sources or other means of livelihood). Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in physical or economic displacement because of either: 1) lawful expropriation or temporary or permanent restrictions on land use, and 2) negotiated settlements in which the buyer can resort to expropriation or impose legal restrictions on land use if negotiations with the seller fail. This principle does not apply to resettlement resulting from voluntary land transactions in which the seller is not obligated to sell and the buyer cannot resort to expropriation or other compulsory processes sanctioned by the legal system of the host country if negotiations fail. The IE should determine if physical or economic displacement is required by the project/programme and if it is voluntary or involuntary. If it is involuntary, the IE will: 1) Provide justification for the need for involuntary resettlement by demonstrating any realistic alternatives that were explored, and how the proposed involuntary resettlement has been minimized and is the least harmful solution. 2) Describe in detail the extent of involuntary resettlement, including the number of people and households involved, their socio-economic situation and vulnerability, how their livelihoods will be replaced, and the resettlement alternatives and/or the full replacement cost compensation required whether the displacement is temporary or permanent. 3) Describe in detail the involuntary resettlement process that the project/programme will apply, and the built-in safeguards to ensure that displaced persons shall be informed of their rights in a timely manner, made aware of the grievance mechanism, consulted on their options, and offered technically, economically, and socially feasible resettlement alternatives or fair and adequate compensation. This also should include an overview of the applicable national laws and regulations. 4) Justify the conclusion that the involuntary resettlement is feasible. ESP Guidance document 14 5) Describe the adequacy of the project/programme organisational structure to successfully implement the involuntary resettlement as well as the capacity and experience of the project/programme management with involuntary resettlement. 6) Build awareness of involuntary resettlement and the applicable Principles and procedures of the project/programme.
Principle 9:	The Fund shall not support projects/programmes that would involve

Protection of Natural Habitats.	unjustified conversion or degradation of critical natural habitats, including those that are (a) legally protected; (b) officially proposed for protection; (c) recognized by authoritative sources for their high conservation value, including as critical habitat; or (d) recognized as protected by traditional or indigenous local communities. The Convention on Biological Diversity defines a 'habitat' as the place or type of site where an organism or population naturally occurs. "Critical natural habitat" refers to habitats that are not man-made and that fulfil a critical role for an organism or a population that in the absence or disappearance of that habitat might be severely affected or become extinct. Specific knowledge about a habitat (either common knowledge, traditional insights, or the result of formal scientific research) is always the basis for identifying critical natural habitats. Often, but by no means always, this has resulted in assigning a protected status to such a critical habitat. The principle refers to legal protection at all levels of governance. The absence of legal protection alone cannot be used to conclude that a habitat is not to be considered a critical natural habitat. Reference is made to knowledge about the importance and intrinsic value of a habitat. The precautionary principle prevails where such knowledge is inadequate or inconclusive. The IE will identify: 1) the presence in or near the project/programme area of natural habitats, and 2) the potential of the project/programme to impact directly, indirectly, or cumulatively upon natural habitats. If such habitats exist and there is a potential of the project/programme to impact the habitat, the IE will: 1) Describe the location of the critical habitat in relation to the project and why it cannot be avoided, as well as its characteristics and critical value. 2) For each affected critical natural habitat, provide an analysis on the nature and the extent of the impact including direct, indirect, cumulative, or secondary impacts; the severity or significance of the impact; and a demonstration that the impact is consistent with management plans and affected area custodians. Possible elements that may be considered Information that may assist the IE in decision-making include: • The laws and regulations within the country that protect natural habitats, including the different forms of protection, and the institutional arrangements for their implementation and enforcement that apply to the habitat. ESP Guidance document 15 • The critical natural habitats nationwide, their location, characteristics and critical value. These areas may be identified based upon their actual or proposed legal protection status, on common knowledge or traditional or indigenous knowledge, or on scientific information on their value. The legal protection refers to all levels of government, as well as international conventions and agreements like the Convention on Wetlands (Ramsar, Iran, 1971). Scientific knowledge may be in the form of peer-reviewed, published scientific research, or inventory lists prepared by authoritative sources like the

	UNESCO Man and the Biosphere Programme, the International Union for Conservation of Nature (IUCN) and the United Nations Environment Programme (UNEP). Large non-governmental conservation organizations like the World Wide Fund for Nature, BirdLife International, and Conservation International may also be sources of useful information.
Principle 10: Conservation of Biological Diversity.	Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids any significant or unjustified reduction or loss of biological diversity or the introduction of known invasive species. The Convention on Biological Diversity (CBD) defines biological diversity as "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems." This definition implies that biological diversity concerns not only living organisms of all taxa but also ecosystem processes, habitats, hydrological cycles, processes of erosion and sedimentation, landscapes, etc. The Cartagena Protocol on Biosafety to the Convention on Biological Diversity is an international treaty governing the movements of living modified organisms (LMOs) resulting from modern biotechnology from one country to another. The IE will identify: 1) the presence in or near the project/programme area of important biological diversity; 2) potential of a significant or unjustified reduction or loss of biological diversity, and 3) potential to introduce known invasive species. If important biological diversity exists and will be significantly or unjustifiably impacted or if the project/programme will introduce known invasive species, the IE will: Biological diversity • Describe the elements of known biological diversity importance in the project/programme area, using any relevant sources of information, such as protection status, status on the IUCN Red List of Threatened Species19 and other inventories, recognition as a UNESCO Man and the Biosphere Programme reserve20, Ramsar site, 21 etc. • Describe why the biological diversity cannot be avoided and what measures will be taken to minimize impacts. 19 International Union for Conservation of Nature, www.iucnredlist.org 20 United Nations Educational, Scientific and Cultural Organization, www.unesco.org/new/en/naturalsciences/environment/ecological-sciences/man-and-biosphere-programme 21 Convention on Wetlands of International Importance, called the Ramsar Convention, www.ramsar.org ESP Guidance document 16 Invasive Species • Describe the invasive species that either may or will be introduced and why such introduction cannot be avoided. • Provide evidence that this introduction is permitted in accordance with the existing regulatory framework22 and the results of a risk assessment analysing the potential for invasive behaviour. • Describe

	the measures to be taken to minimize the possibility of spreading the invasive species
Principle 11: Climate Change.	Projects/programmes supported by the Fund shall not result in any significant or unjustified increase in greenhouse gas emissions or other drivers of climate change. The main drivers of climate change that are considered here are the emission of carbon dioxide gas from the use of fossil fuel and from changes in land use, methane and nitrous oxide emissions from agriculture, emission of hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride, other halocarbons, aerosols, and ozone. Compliance with the principle may be demonstrated by a risk-based assessment of resulting increases in the emissions of greenhouse gasses or in other drivers of climate change. Projects/programmes23 in the following sectors require a greenhouse gas emissions calculation using internationally recognized methodologies: 24 energy, transport, heavy industry, building materials, large-scale agriculture, large-scale forest products, and waste management. The calculations will be used as a basis for a substantiated evaluation of the significance and justification of any increase. Other projects/programmes may demonstrate compliance by carrying out a qualitative risk assessment for each of the mentioned drivers of climate change, plus any impact by the project/programme on carbon capture and sequestration capacity.
Principle 12: Pollution Prevention and Resource Efficiency.	Projects/programmes supported by the Fund shall be designed and implemented in a way that meets applicable international standards for maximizing energy efficiency and minimizing material resource use, the production of wastes, and the release of pollutants. There are two distinct aspects to this principle. Projects/programmes shall on the one hand minimize in a reasonable and cost-effective way the resources that will be used during implementation. This applies to all sources and forms of energy, to water, and to other resources and materials inputs. On the other hand, the project/programme will minimize the production of waste and the release of pollutants (including GHGs). Possible elements that may be considered 22 Including the Cartagena protocol for countries that have ratified it. 23 If a programme contains one project that is in one of the sectors mentioned, the requirement will apply to the whole programme. 24 In line with the Guidelines for National Greenhouse Gas Inventories (2006) of the Intergovernmental Panel on Climate Change (IPCC) www.ipcc-nggip.iges.or.jp/public/2006gl/ . Tools are available from a number of sources, including www.ghgprotocol.org, www.epa.gov/climatechange/emissions/ghgrulemaking.html, and www.defra.gov.uk/publications/2011/03/26/ghg-guidance-pb13309. ESP Guidance document 17 IEs may illustrate the minimization of resource use by showing how this concept has been applied in the project/programme

	design and how this will be effective during implementation. Such illustration may include references to certain design options/alternatives and implementation arrangements. Where international standards for maximizing energy efficiency and minimizing material resource use apply, these will be listed and a description provided on how the design and implementation arrangements of the project/programme are consistent. Preventing waste and pollution may be achieved by preparing a waste and pollution prevention and management plan for the whole project/programme. The nature and quantity of the waste, as well as those of possible pollutants the project/programme may produce, will determine the level of detail and the performance requirements of the waste and pollution prevention and management plan. The plan should include the cost of implementation arrangements and as well as implementation and performance monitoring. The guiding principles of the waste and pollution prevention and management plan should be prevention, a precautionary approach, evidence-based monitoring, and participation and consultation. Implementation of the plan will be duly documented and all those involved in project/programme implementation will be familiarized with the plan and its implications.
Principle 13: Public Health.	Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids potentially significant negative impacts on public health. Possible public health impacts of a project/programme can be determined by assessing its impact on a range of so-called determinants of health. 25 Public health is determined not just by access to medical care and facilities and lifestyle choices, but also by a much broader set of social and economic conditions in which people live. Possible elements that may be considered The project/programme may demonstrate that it will not cause potentially significant negative impacts on public health by screening for possible impacts and including the results of the screening in the Proposal. Health impact screening is a process of rapidly and systematically identifying the project/programme's potential impacts on public health. It will typically also elucidate the risk of such effects and determine if a further thorough public health impact assessment and the development of a management plan is needed to prevent potentially significant impacts and to demonstrate compliance with the principle. This screening can thus be the first step in a full health impact assessment, depending on the outcome of the screening. A range of health impact assessment and screening tools exist. For the purpose of demonstrating compliance, a checklist for health impact assessment screening may be used. Such a checklist considers the potential impact of the project/programme on a comprehensive range of health determinants for the population as a whole and for groups within the population. A

	health impact-screening checklist should include at least the following sections: 1) a section on the background and context of the project/programme; 2) a section with an adequate list of health determinants, with space for a nuanced assessment, for each determinant, the likelihood of impact occurring; and 3) a section identifying the group(s) most likely to be affected by each health determinant 25 Further information on determinants of health is available e.g. from the World Health Organization website http://www.who.int/hia/evidence/doh/en/ ESP Guidance document 18 If the outcome of the screening is that no potentially significant negative impacts on public health are likely, then the screening may be used to demonstrate compliance. If on the other hand the screening concludes that further health impact assessment is needed, then the outcome of that process may be used to demonstrate compliance. Both screening and possibly health impact assessments must comply with the relevant WHO recommended practices.
Principle 14: Physical and Cultural Heritage.	Projects/programmes supported by the Fund shall be designed and implemented in a way that avoids the alteration, damage, or removal of any physical cultural resources, cultural sites, and sites with unique natural values recognized as such at the community, national or international level. Projects/programmes should also not permanently interfere with existing access and use of such physical and cultural resources. The reference for international recognition of physical and cultural heritage is the 1972 UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage. Convention Articles 1 and 2 provide definitions of what is considered cultural27 and natural28 heritage. The List of World Heritage in Danger29 (Article 11 (4) of the Convention) also provides a reference. The IE will identify the presence of cultural heritage in or near the project/programme. If cultural heritage exists, the IE will: • Describe the cultural heritage, the location and the results of a risk assessment analysing the potential for impacting the cultural heritage; and • Describe the measures to be taken to ensure that cultural heritage is not impacted, and if it is being accessed by communities, how this access will continue. Possible elements that may be considered Information that may assist the IE when assessing the project/programme potential risks include: • Status of ratification and entry into force of the Convention Concerning the Protection of the World Cultural and Natural Heritage by the country or countries in which the project/programme will be implemented. 26 http://www.who.int/hia/en/ 27 monuments: architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science; groups of buildings: groups of separate or

	connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science; sites: works of man or the combined works of nature and man, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view. 28 natural features consisting of physical and biological formations or groups of such formations, which are of outstanding universal value from the aesthetic or scientific point of view; geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation; natural sites or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty. 29 http://whc.unesco.org/en/danger ESP Guidance document 19 • National legal and regulatory framework for recognition and protection of physical and cultural heritage in the country or countries where the project/programme is implemented. • Inventory of the physical and cultural heritage present in the wider project/programme area that enjoys recognition at community, national, or international levels.
Principle 15: Lands and Soil Conservation.	Projects/programmes supported by the Fund shall be designed and implemented in a way that promotes soil conservation and avoids degradation or conversion of productive lands or land that provides valuable ecosystem services. Principle 15 concerns the stewardship of land to either be maintained in its natural state, where possible, or if it is converted to promote and protect its functioning. Soil conservation refers to a set of measures to prevent, mitigate or control soil erosion and degradation. 30 There are two aspects to the principle: promotion of soil conservation and avoidance of degradation or conversion of valuable lands. This applies to soils and lands directly affected by the project/programme as well as those influenced indirectly, or as a secondary or cumulative effect. Soil conservation should be incorporated in project/programme design and implementation. Soil conservation The IE will identify: 1) the presence of fragile soils (e.g. soils on the margin of a desert area, coastal soils, soils located on steep slopes, rocky areas with very thin soil) within the project area or 2) project/programme activities that could result in the loss of otherwise non-fragile soil. If such soils exist and potential soil loss activities will take place, the IE will: • Identify and describe: o Soils that may be impacted by the project/programme; o Activities that may lead to loss of soils; o Reasons why soil loss is unavoidable and o Measures that will be taken to minimize soil loss. •

4. THE ENVIRONMENT AND SOCIAL MANAGEMENT FRAMEWORK FOR BCRA-Project:

The Environmental and Social Management Plan outlined here below consists of a set of

measures for: (a) screening (i.e. determination of potential adverse environmental and social impacts); (b) mitigation; (c) monitoring; and (d) institutional arrangements to be undertaken during planning, design, procurement, implementation stages of the planned activities to be financed out of proceeds of the project, to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels.

Some of the projects interventions / investments to be supported may have adverse environmental and social impacts that must be addressed before they are implemented. This ESMP is necessary to prescribe project arrangements for the preparation, review, approval and implementation of activities to adequately address AF and national environmental and social safeguards issues and principles. It provides distinct arrangements for addressing environmental and social issues associated with the implementation of the project. ***Table 5*** provides a template for developing an ESMP that includes the actions needed to implement proposed mitigation measures.

4.1 OBJECTIVES OF THE ESMP FOR BCRA-PROJECT:

The overall objective of this ESMF is to provide an Environmental and social screening for the projects. It is intended to be used as a practical tool during project implementation. It explicitly describes the steps to be undertaken in the implementation of the planned subprojects under the project. This will ensure that the implementation of the sub-projects is carried out in an environmentally and socially sustainable manner. It will also provide a framework to enable communities/beneficiaries screen sub-projects, identify measures and implement measures to address adverse environmental and social impacts.

Specifically, the ESMP will aim to:

i) Establish clear procedures and methodologies for environmental and social planning, review, approval and implementation of activates to be executed under the project;

ii) Assess the potential environmental and social impacts of envisaged projects activities;

iii) Propose mitigation measures which will effectively address identified negative impacts;

iv) Specify appropriate roles and responsibilities, and outline the necessary reporting procedures for managing and monitoring environmental and social concerns related to this projects; and

v) Determine the training, capacity building and technical assistance needed successfully implement the provisions of the ESMP by the various stakeholders.

4.2 GENERAL VIEW OF POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

4.2.1 Positive Impacts:- Implementation of the proposed project is expected to have the following positive environmental and social impacts:

i. Establishing COWSOs, provision of water supply and access will contribute to climate resilient water supply and solve existed social related problems due to water scarcity. Adequate water supply will also improve health and sanitation status of communities in the project sites. There will be positive direct and indirect social, economic and environmental impacts due to improved and availability of adequate clean and safe water in the project areas.

ii. Strengthening the good agricultural practices (GAP) and investing for improved and modern irrigation techniques and best agricultural practices and improved seeds to communities will significantly contribute to increasing capacity to adapt to climate change effects, through agricultural productivity, food security and agroforestry practices. School dropout will also be solved as well solving the observed malnutrition challenges.

iii. Reversing the ongoing degradation of environmental and ecological systems and enhancing adaptation activities through EVA practices, is expected to contribute over 50% of forest regeneration and cover including woodlands and water resources availability, compared to the baseline scenario in the project sites. The proposed restoration and tree planting activities under component four will contribute to climate resilient of rural communities directly and indirectly through improved ecological functions and services such as weather amelioration, protect soils from erosion, control land degradation and as well as forest products. Promotion of planting activities for fruit plants and wood plants for timber including beekeeping activities in pilot villages may yield excellent reduction of income poverty and will contribute significantly to climate resilience of vulnerable communities specially women and girls.

iv. Training and awareness raising on environmental and climate change issues will contribute to better management of environment and building the impressive gains from agriculture, fishery and livestock production by organising the communities into sustainable marketing and credit cooperatives known as SACCOs. By increasing the scale of their combined outputs, the social-cooperative model will maximize their bargaining power and gain better access to markets and credit.

v. Establishment of demonstration centers will facilitate learning and experience sharing across all project components, which in long-term increase capacity of extension services and rural institutions while promoting decentralized service provision and innovation

vi. Integration of livelihoods system i.e. local chicken forming, bee-keeping, improved fish farming systems, fruit tree planting and agroforestry including micro-irrigations for horticultural crops and improved drought tolerant varieties/ agricultural crops, improved cattle keeping, production of fodder as well as supply and access of water profoundly enhances

income, livelihood improvement, and social wellbeing of people and contributes to environmental health and functions.

4.2.2 Negative Impacts:- The following are negative environmental and social impacts likely to happen if the project is implemented:

i. Delineation of degraded areas for rehabilitation and restoration may shift the pressure to non- degraded areas

ii. Water supply and access at household level if not well addressed may promote in water borne diseases if the hygiene and sanitation issues will be not well integrated in the water supply and management issues

iii. Presence of large spectrum of project beneficiaries may cause conflict, if not well handled.

iv. Promotion of exotic trees plantations in the proposed areas may reduce abundances of indigenous tree species if the activities are not carefully managed and monitored

v. Overall activities related to project implementation may contribute to disturbance of natural systems especially the soil and land systems.

4.3 ENHANCEMENT AND MITIGATION MEASURES

While measures will be taken to promote the positive impacts of the proposed project, similarly, negative impact will be given equal attention to ensuring adverse impacts likely to happen are minimized as much as possible, the matrix below provides detail on mitigation and enhancement program

Table 4: Enhancement and mitigation measures

Item	Environmental Impact	Enhancement/Mitigation Measures	Responsibility for Implementation	Site of Implementation	Implementation Schedule	Responsibility for Monitoring	Monitoring Indicators
Enhancement of Program Positive Impacts							
1	Increase in alternative livelihood opportunities	Introducing livelihood systems that will contribute to reduction of individual and community vulnerabilities and pressure on natural resources	Bunda District Council and the Project Implementation Unit	Project sites associated with the benefiting communities	Since project design phase to first year of project implementation till the end of the of project and thanks to revolving fund continuous activity after project closure	Community development and monitoring and evaluation officers at the district and the PIU	Improved incomes Livelihoods created and social improvement indicators such as improved meals, houses etc.
2	Rehabilitation and restoration of degraded environmental and ecosystems	Rehabilitating fragile areas such as village forests, wetlands, hills and mountains systems and riverbanks, will contribute to ecosystems restoration and reduce the risk of floods and landslides	Bunda District Council, TFS	The proposed six wards of Bunda district	Throughout the program cycle	Environmental Officer, forest, Water, Fisheries, agriculture officers and TFS manager at the district	Areas of interventions

3	Enhance water supply and improved food security through improved water infrastructures and irrigation systems	Reduced water scarcity and increased food security	The District Council and irrigation commission	Project sites in Bunda district	Throughout the program cycle	District environmental, water and agricultural officers	Number of structures established
4	Reduction of deforestation	Introduction of closure systems, agroforestry and tree planting to reduce deforestation	The District Council	Project sites in Bunda district	Throughout the program cycle	Environmental officer, forestry, agriculture, fisheries and community development officer	Reforested Areas, by-laws established and number of ecosystems and closed as means of restoration and rehabilitations
Mitigation plan of identified of negative impacts							
1	Delineation of degraded areas for rehabilitation and restoration may shift the pressure to non- degraded areas.	This impact is insignificant, temporal and not cumulative. Can easily be mitigated by raising awareness and formulation of bylaws on environmental and natural resources to be developed and enforced.	The District Council, Project management Unit, Village Governments and community groups	Bunda district in rural villages	Throughout the project cycle and after project life time	District environmental Officer, Forest environmental Officer and Project Unit	Reforested Areas, by-laws established and number of ecosystems and closed as means of restoration and rehabilitations
2	Water supply and access at household level if not well addressed may promote in water borne diseases if the hygiene and sanitation issues will be not well integrated in the water supply and management issues	This impact is insignificant, temporal and not cumulative. Can easily be mitigated by raising awareness on hygiene and implement available bylaws on environmental sanitation and hygiene, the public health Act 2005 and national Environment Act 2004	The District Council, Project management Unit, Village Governments and community groups	Bunda district in rural villages	Throughout the project cycle and after project life time	District public health officer, District environment Officer and Project Management Unit	No of supervision report No of village mmetings

3	Presence of large spectrum of project beneficiaries may cause conflict, if not well handled.	This impact is insignificant, temporal and not cumulative. Can easily be mitigated through proper public consultation during project design to manage over expectation. This project involved a number of people and this kind of risk is not expected in future. However, awareness raising and training is being proposed as part of activities under the project components.	The District Council, Project management Unit, Village Governments and community groups	Bunda district in rural villages	Throughout the project cycle	Project Management Unit, District community development officer, Water resources officer, and agricultural extension officers	No of awareness reports and training, workshops and village meeting reports
4	Promotion of exotic trees plants in the proposed areas may reduce abundances of indigenous tree species if the activities are not carefully managed and monitored	This impact is significant, permeant and cumulative. But it can be easily be mitigated through proper plant species selection. This project will avoid planting any invasive and alien plant species in the area, It will also avoid bringing in any unknown and un-described species. Activities identified in the project will promote non-water timber species, fruit trees such mangoes, oranges etc. Local breeds and indigenous plants will be promoted through allowing regeneration and rehabilitation	The District Council, Project management Unit, Village Governments and community groups, village communities	Bunda district in rural villages	Throughout the project cycle and after project life time	District environmental officer, District forest officer, Project Management Unit, District community development officer, Water resources officer, and agricultural extension officers	No of plants Restored ecosystems No of training reports
5	Overall activities related to project implementation may contribute to disturbance of natural systems especially the soil and land systems.	This impact is insignificant, temporal and not cumulative. Can easily be mitigated by raising awareness and formulation of bylaws on environmental and natural resources to be developed and enforced as no massive investment will be done in land system being utilized for agriculture.	The District Council, Project management Unit, Village Governments and community groups	Bunda district in rural villages	Throughout the project cycle and after project life time	District environmental officer, District forest officer, , Project Management Unit, District community development officer,	No of awareness reports and training, workshops and village meeting reports

Table 5: Environmental and social impacts of the different activities under BCRA- project has been identified as summarized in the table below.

PROJECT COMPONENTS/ ACTIVITIES	EXPECTED IMPACTS ON THE EF PRINCIPLES											
	Compliance with the Law	Access and Equity	Marginalized and Vulnerable Groups	Gender Equality and Women's Empowerment	Involuntary Resettlement	Protection of Natural Habitats	Conservation of Biological Diversity	Climate Change	Pollution Prevention and Resource Efficiency	Public Health	Physical and Cultural Heritage	Lands and Soil Conservation
Component 1. Improving regional management of a transboundary water catchment												
***Outcome 1**: Enhanced climate resilient water management and supply system in vulnerable agro-pastoral communities of Bunda District*												
Output 1.1Climate resilient rural water supply system established in selected drought prone agro-pastoral communities of Bunda district												
1.1.2 Rehabilitation of pump houses and installation of submersible water pump at Kasahunga, Mumagunga and Isanju water sources.	✓	X		X	N/A	✓	✓	X	X	✓ X	X	✓ X
1.1.2 Rehabilitation and improve water storage tanks at Isanju, Namhura, Mumagunga and Kasahunga villages and construct sump tank at Namhura village	✓	X	X	X	N/A	✓	✓ X	X	X	✓ X	X	✓
1.1.3 Rehabilitate water network system *in Iramba, Neruma, Namhura and Nyamihoro Wards covering Nyamitwebili, Neruma, ,Kasahunga, ,Namhura, Isanju and Mwiruruma villages and make them more climate resilient*	✓	X	X	X	N/A	✓	✓ X	X	X	✓ X	X	✓ X

PROJECT COMPONENTS/ ACTIVITIES	EXPECTED IMPACTS ON THE EF PRINCIPLES											
	Compliance with the Law	Access and Equity	Marginalized and Vulnerable Groups	Gender Equality and Women's Empowerment	Involuntary Resettlement	Protection of Natural Habitats	Conservation of Biological Diversity	Climate Change	Pollution Prevention and Resource Efficiency	Public Health	Physical and Cultural Heritage	Lands and Soil Conservation
1.1.4 Extension of water network system for Kasahunga and Isanju water sources to cover drought prone communities of Mumagunga, Chamakapo and Mulanda villages in Namhura and Neruma Wards.	✓	X	X	X	N/A	✓	✓ X	X	X	✓ X	X	✓ X
1.1.5 Drill boreholes in drought prone villages (Namalebe – Nakatuba, Igundu Nasululi and Lagata) villages uncovered with water systems from Kasahunga and Iramba surface water sources and Install solar energy driven water pumps	✓	X	X	X	N/A	✓	✓ X	X	X	✓ X	X	✓ X
1.1.6 Construct storage tanks and Water Kiosk/Network for the drilled boreholes	✓	X	X	X		✓	✓ X	X	X	✓ X	X	✓ X
Output 1.2 *Establishment of Community Owned Water Supply Organization(COWSOs) facilitated and their functional committee members trained on operational and maintenance in Bunda District*												
1.2.1 Establish and/or strengthen water governance structures/arrangements (COWSOs by considering gender balance for selection of	✓	X	X	X	N/A	X	X	X	X	X	X	X

PROJECT COMPONENTS/ ACTIVITIES	EXPECTED IMPACTS ON THE EF PRINCIPLES											
	Compliance with the Law	Access and Equity	Marginalized and Vulnerable Groups	Gender Equality and Women's Empowerment	Involuntary Resettlement	Protection of Natural Habitats	Conservation of Biological Diversity	Climate Change	Pollution Prevention and Resource Efficiency	Public Health	Physical and Cultural Heritage	Lands and Soil Conservation
members of the management team) to better manage water source, equitable and gender sensitive water allocation for human and other uses, and revenue collection and develop by-laws for regulating effective use of water resources and protection of rural water infrastructures												
1.2.2 Train selected members from COWSOs on operation and maintenance of their climate resilient rural water supply schemes to ensure sustainability.	✓	X	X	X		X	X	X	X	X	X	X
Component 2: *Improving agricultural productivity, livelihood and enhancing agro-ecosystem resilience through Climate Smart EVA practices*												
Outcome 2: *Climate Smart EVA practices to improve food security through small scale and micro-irrigation schemes enhanced in selected villages of Bunda District Council*												
Output 2.1 Climate Smart EVA practices to improve food security through small scale and micro-irrigation schemes enhanced in selected villages of Bunda district												
2.1.1 Construct and establish drip irrigation structures/facilities Poly/sim tanks, PVCs, solar	✓	X	X	X	X	✓	✓ X		X	✓ X	X	✓ X

PROJECT COMPONENTS/ ACTIVITIES	EXPECTED IMPACTS ON THE EF PRINCIPLES											
	Compliance with the Law	Access and Equity	Marginalized and Vulnerable Groups	Gender Equality and Women's Empowerment	Involuntary Resettlement	Protection of Natural Habitats	Conservation of Biological Diversity	Climate Change	Pollution Prevention and Resource Efficiency	Public Health	Physical and Cultural Heritage	Lands and Soil Conservation
pumps and net houses) for intensified horticultural crops and relevant food crops at Mchingondo (Buguma) and Mumagunga villages of Bunda District Council												
2.1.2 Construct and establish irrigation structures/facilities of (water tank, PVCs, canals, motorized pump, and electrical transformer) for enhanced field crop (paddy) production at Mchigondo (Buguma) village of Bunda District Council.	✓	X	X	X	X	✓	✓ X		X	✓ X	X	✓ X
2.2.3 Facilitate construction of two post-harvest management centers/warehouses for paddy and sunflower at Mchigondo (Buguma) and Kasuguti villages of Bunda District Council using force account modality.	✓	X	X	X	X	✓	✓ X		X	✓ X	X	✓ X

PROJECT COMPONENTS/ ACTIVITIES	EXPECTED IMPACTS ON THE EF PRINCIPLES											
	Compliance with the Law	Access and Equity	Marginalized and Vulnerable Groups	Gender Equality and Women's Empowerment	Involuntary Resettlement	Protection of Natural Habitats	Conservation of Biological Diversity	Climate Change	Pollution Prevention and Resource Efficiency	Public Health	Physical and Cultural Heritage	Lands and Soil Conservation
2.1.4 Facilitate increased use of EVA practices, drought tolerant and early maturing crops (Cassava and Sunflower) by farmers from Namhula, Mumagunga, Kasuguti,Butimba, Neruma, Chitengule, Nakatuba, Namalebe, Buguma and Igundu villages of Bunda District Council.	✓	X	X	X		X	X		X	X	X	X
2.1.5 Facilitate availability of crop value addition technologies (modern paddy hulling machine, sunflower seed pressing & oil refinery machine, cassava graters and horticultural drying micro technologies) for the farmer groups particularly for Mchingondo, Mumagunga and Kasuguti in Bunda District Council.	X	X	X	X	X	X	X		X	X	X	X
2.1.6 Capacity Building to farmers through training programs on good agronomic practices	X	X	X	X	X	X	X		X	X	X	X

PROJECT COMPONENTS/ ACTIVITIES	EXPECTED IMPACTS ON THE EF PRINCIPLES											
	Compliance with the Law	Access and Equity	Marginalized and Vulnerable Groups	Gender Equality and Women's Empowerment	Involuntary Resettlement	Protection of Natural Habitats	Conservation of Biological Diversity	Climate Change	Pollution Prevention and Resource Efficiency	Public Health	Physical and Cultural Heritage	Lands and Soil Conservation
through farmers field schools, Female Farmers Field Schools, Demo plots, Agroforestry of the selected crops (Cassava, sweet potatoes, paddy, sunflower, horticultural crops, agroforestry crops), operations and maintenance of the constructed/installed irrigation facilities, crop post-harvest management practices and value addition.												
2.1.7 Facilitate improved local chicken keeping practices for Neruma, Mumagunga, Chingulubhila and Namhura Villages as potential enterprises to generate income and building resilience for the poor households and women groups	X	X	X	X	X	X	X		X	X	X	X
***Component 3**: Promoting paradigm shift of small scale fishers for sustainable income and climate resilience livelihood through fish farming innovations*												

PROJECT COMPONENTS/ ACTIVITIES	EXPECTED IMPACTS ON THE EF PRINCIPLES											
	Compliance with the Law	Access and Equity	Marginalized and Vulnerable Groups	Gender Equality and Women's Empowerment	Involuntary Resettlement	Protection of Natural Habitats	Conservation of Biological Diversity	Climate Change	Pollution Prevention and Resource Efficiency	Public Health	Physical and Cultural Heritage	Lands and Soil Conservation
in selected villages of Bunda District												
***Outcome 3**: Traditional fishing practices of small scale fishers transformed and' income improved through climate sensitive aquaculture innovation*												
Output 3.1 Traditional fishing practices transformed for improved climate resilient livelihood and sustainable income generating activities in selected villages of Bunda District												
3.1.1 Construction of 10 earthen ponds sized 20 x 40 Meters for vulnerable small scale fishing communities (Women and youth groups inclusively) at Buguma and Isanju villages	✓	X	X	X	X	✓	✓ X	X	X	✓ X	X	✓ X
3.1.2 Introduction of an effective and efficient fish culture techniques using Tilapia cages by Establishing 10 Cages (Sized 5x5x2.5m. each) for vulnerable small scale fishing communities (Women and Youth groups) at Buguma and Isanju villages	✓	x	x	x	x	✓	✓ x	x	x	✓ x	x	✓ x
3.1.3 Procure and introduce 107,000 fingerlings	✓	x	x	x	x	x	x	x	x	x	x	x

PROJECT COMPONENTS/ ACTIVITIES	EXPECTED IMPACTS ON THE EF PRINCIPLES											
	Compliance with the Law	Access and Equity	Marginalized and Vulnerable Groups	Gender Equality and Women's Empowerment	Involuntary Resettlement	Protection of Natural Habitats	Conservation of Biological Diversity	Climate Change	Pollution Prevention and Resource Efficiency	Public Health	Physical and Cultural Heritage	Lands and Soil Conservation
in 10 ponds and 20 cages												
3.1.4 Purchase two Wooden Outboard Engine Boats for the farmers at Both Buguma and Isanju Villages	✓	X	X	X	X	X	X	X	X	X	X	X
3.1.5 Purchase of Feed for pre-nursery, Nursery, Grow outs/Brooders and Hatchery feeders	✓	X	X	X	X	X	X	X	X	X	X	X
3.1.6 Train community on Fish culture Techniques and fishing skills at Cage sites in Lake Victoria	X	X	X	X	X	X	X	X	X	X	X	X
3.1.7 Facilitate establishment of one fish hatchery for tilapia species at Buguma village	✓	X	X	X	X	✓	✓ X	X	X	✓ X	X	✓ X
3.1.8 Facilitate construction of a two room building for feed preparation for the established fish hatchery, purchase and enable installation of	✓	X	X	X	X	✓	✓ X	X	X	✓ X	X	✓ X

PROJECT COMPONENTS/ ACTIVITIES	EXPECTED IMPACTS ON THE EF PRINCIPLES											
	Compliance with the Law	Access and Equity	Marginalized and Vulnerable Groups	Gender Equality and Women's Empowerment	Involuntary Resettlement	Protection of Natural Habitats	Conservation of Biological Diversity	Climate Change	Pollution Prevention and Resource Efficiency	Public Health	Physical and Cultural Heritage	Lands and Soil Conservation
a pelletizer and Feed mixing machine at Buguma village												
3.1.9 Facilitate introduction of modern techniques for improved fish feeds formulation through use of powder and pallets to promote sustainability.	✓	X	X	X	X	X	X	X	X	X	X	X
3.1.10 Facilitate study Visit of selected fish farmers on Tilapia Cage farming to appreciate livelihood transformation and available climate sensitive fish farming techniques in the region	X		X	X	X	X	X	X	X	X	X	X
Component 4: *Improve ecological and environmental services and functions to sustain climate sensitive rural livelihoods in selected rural communities of Bunda District*												
Outcome 4.1. *Improved ecological and environmental services and functions to sustain climate sensitive rural livelihoods in Bunda District Council*												
Output 4.1.Improve ecological and environmental services and functions to sustain climate sensitive rural livelihoods in selected rural communities of Bunda District												

PROJECT COMPONENTS/ ACTIVITIES	EXPECTED IMPACTS ON THE EF PRINCIPLES											
	Compliance with the Law	Access and Equity	Marginalized and Vulnerable Groups	Gender Equality and Women's Empowerment	Involuntary Resettlement	Protection of Natural Habitats	Conservation of Biological Diversity	Climate Change	Pollution Prevention and Resource Efficiency	Public Health	Physical and Cultural Heritage	Lands and Soil Conservation
4.1.1 Establish and implement ecological restoration and rehabilitation plans (hills, mountainous and woodland restored and conserved) in selected Wards (Iramba, Neruma, Namhura, Kitengule and Igundu wards)	✓	X	X	X	X	X	X	X	X	X	X	X
4.1.2 Promote improved ecosystem based income generating activities at Mwiruruma, Isanju, Mumagunga, Kenkombyo, Buguma, Igundu, Namhura, Kasahunga, Sikiro, Nyamitwebili and Namalebe through (a) improved bee keeping activities in woodland, hills and mountainous systems and (b) fruit plants farming	✓	X	X	X	X	✓	✓ X	X	X	X	X	X
4.1.3 Mobilize enclosure systems in degraded ecosystems to promote natural regeneration and recovery of ecological functions and explore the use of local/traditional institutions to strengthen management of sensitive ecological systems.	✓	X	X	X	X	X	X	X	X	X	X	X

PROJECT COMPONENTS/ ACTIVITIES	EXPECTED IMPACTS ON THE EF PRINCIPLES											
	Compliance with the Law	Access and Equity	Marginalized and Vulnerable Groups	Gender Equality and Women's Empowerment	Involuntary Resettlement	Protection of Natural Habitats	Conservation of Biological Diversity	Climate Change	Pollution Prevention and Resource Efficiency	Public Health	Physical and Cultural Heritage	Lands and Soil Conservation
4.1.4 Engage farmers in tree planting on surrounding residential areas, along streets and roadsides and degraded landscapes and establish ecological schools (3 secondary and 3 primary schools) and villages (4 villages) in selected wards of Bunda district.	✓	X	X	X	X	✓	✓ X	X	X	X	X	X
Component 5: *Strengthening institutional capacity and knowledge management on climate change adaptation*												
Outcome 5: *Strengthened institutional capacity to reduce risks associated with climate-induced Socio-economic losses and livelihood failures in Bunda district*												
Output 5.1 Capacity of the district and communities in Bunda is strengthened to respond to extreme weather events												
5.1.1 Facilitate training to government stakeholders, technical staffs, community groups and civil society in climate risk management and project measures for further scaling up	X	X	X	X	X	X	X	X	X	X	X	X
5.1.2 Communicate and share knowledge generated through project implementation in Bunda District, National and International	X	X	X	X	X	X	X	X	X	X	X	X

PROJECT COMPONENTS/ ACTIVITIES	EXPECTED IMPACTS ON THE EF PRINCIPLES											
	Compliance with the Law	Access and Equity	Marginalized and Vulnerable Groups	Gender Equality and Women's Empowerment	Involuntary Resettlement	Protection of Natural Habitats	Conservation of Biological Diversity	Climate Change	Pollution Prevention and Resource Efficiency	Public Health	Physical and Cultural Heritage	Lands and Soil Conservation
communities												
5.1.3 Sharing project results and lessons learned	X	X	X	X	X	X	X	X	X	X	X	X
5.1.4 Facilitate provisional of project monitoring and evaluation activities	X	X	X	X	X	X	X	X	X	X	X	X

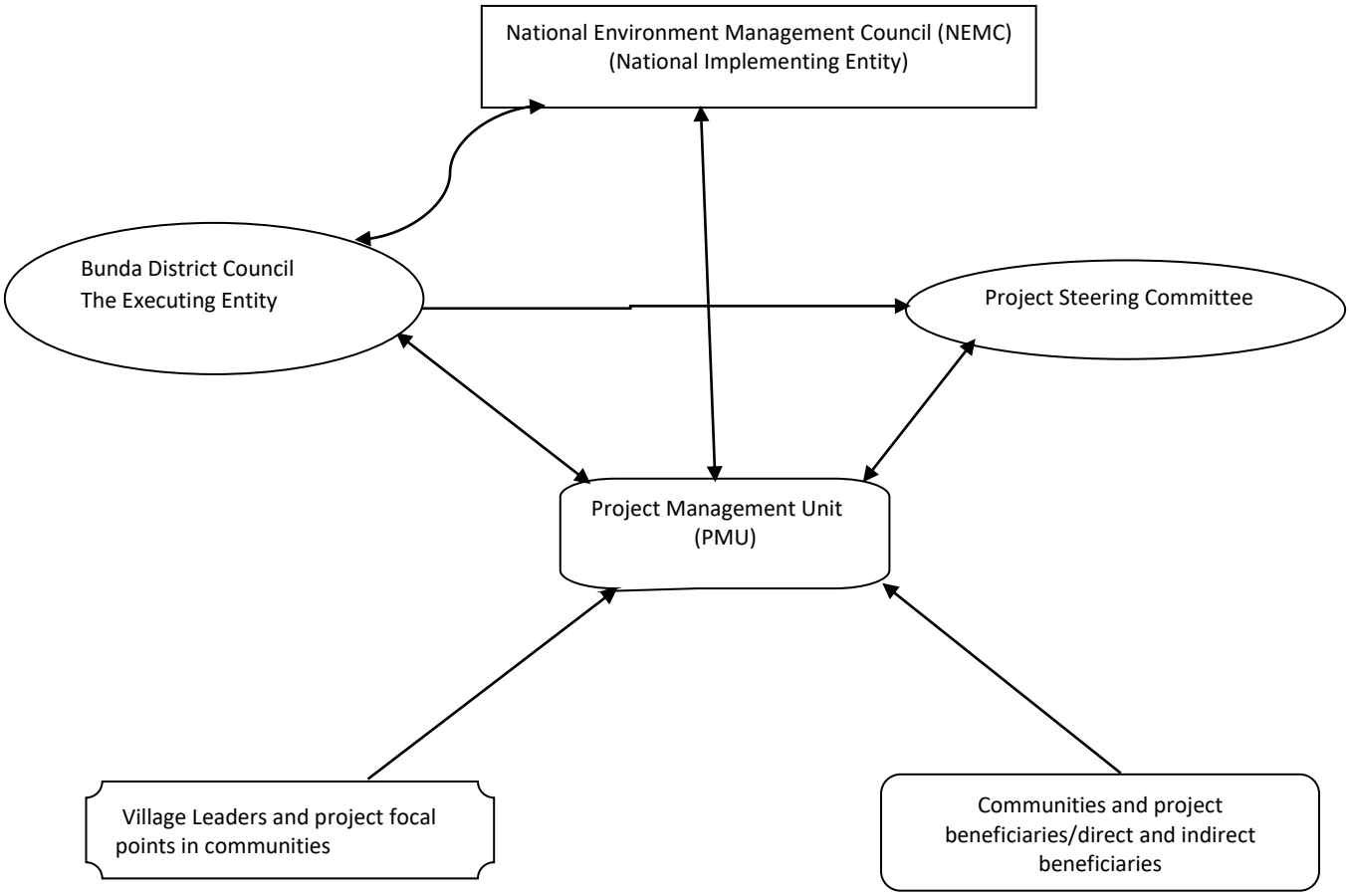
5.0 The Environmental and Social Impacts institutional structures and monitoring Mechanism

5.1 Introduction

This sub section of the ESMP addresses the institution structures to enable to monitoring and manage the environmental and social risks through the identified mitigation measures. The proposed organogram structure addresses issues of risk ownership and provides opportunities for consultation and adaptive management through the ESMP, in line with the Environmental and Social Policy and Gender Policy of the Adaptation Fund.

5.2 Allocation of Risk Responsibilities

This project is owned by Bunda District Council (Bunda DC), Therefore, Bunda district Council is the executing Entity and the overall coordinator of the project through the services of Project Management Unit (PMU). While National Environment Management Council (NEMC) is Implementing Entity is mandate to ensure oversight and quality assurance of evaluation processes and accountability for outputs, deliverables and risk management during project development, implementation; the day to day activities including monitoring of issues of environmental and social risks and opportunities for consultation and adaptive management through the ESMP rests under the Executing Entity through the Project management Unit (PMU). The structure to the proposed environmental and social risk mitigation measures and monitoring strategies is given in the diagram below:



5.3 Institutional Strengthening needed for effective risk mitigation and monitoring at Bunda District Council and the PMU

i) The Executing Entity, Bunda District Council

The Executing Entity, Bunda District Council needs to appoint monitoring and evaluation officers, who will be placed the Project Management Unit to ensure that there is proper implementation of the risk mitigation strategies proposed for the adverse risks identified under component 1,2, 3 and 4. This is because, Bunda District Council is the owner of the project and hence it maintains oversight of monitoring and updating the risk mitigation strategies. Additionally, the Executing Entity must train Agricultural Extension Officers, Community Development Officer, Environmental Officer and Villager Leaders within the wards and villages in which the project will be implemented. It will be the responsibility of the Project Manager, PMU and the Executive Director at Bunda District Council to ensure that all relevant stakeholders are adequately informed about the structure to address environmental and social risks in line with the Environmental and Social Policy of the Adaptation Fund. Thus, this strategy will be shared with the community during the project inception workshop and subsequent meetings with the beneficiaries.

ii) National Environment Management Council (NEMC), the National Implementing Entity

NEMC together with Bunda district Council will have overall oversight of monitoring and evaluating the implementation of the risk mitigation during the project implementation stage. NEMC therefore needs to provide risk monitoring and evaluation officers as well as environmental specialist to assist Bunda District Council in monitoring and evaluation of project on risk issues related to environment and social as identified in the ESMP.

5.4. Allocation of Responsibilities for risks with potential adverse impacts

The following risks, if not properly managed and mitigated, were identified as having potential adverse impacts on the project.

Environmental and Social Risk		Primary responsibility	Institution with mandate for oversight and monitoring and evaluation of risks	
Risk Particulars	Risk classification	Primary risk management responsibility	Responsible arm at Bunda District Council	Responsible arm at NEMC
Compliance with the Law	Low risk	Project Coordinator, Assistant Project Coordinator, M&E officer, Community Dev. Officer	Project Management Unit	Climate Change Department
Access and Equity	Low risk	Project Coordinator, M&E officer, Community Dev. Officer	Project Management Unit	Climate Change Department
Marginalized and Vulnerable Groups	Low risk	Project Coordinator, Assistant Project Coordinator, M&E officer, Community Dev. Officer	Project Management Unit	Climate Change Department
Human rights	Low risk	Project Coordinator, Assistant Project Coordinator officer, Community Dev. Officer	Project Management Unit	Climate Change Department
Gender Equity and Women's Empowerment	Low risk	Project Coordinator, Assistant Project Coordinator, M&E officer, Community Dev. Officer	Project Management Unit	Climate Change Department
Core Labor Rights	Low risk	Project Coordinator, Assistant Project Coordinator, M&E officer, Community Dev. Officer	Project management Unit	Climate Change Department
Protection of Natural Habitats	Low risk	Project Coordinator, Assistant Project Coordinator, M&E officer, Community Dev. Officer	Project Management Unit	Climate Change Department

Conservation of Biological Diversity	Low risk	Project Coordinator, Assistant Project Coordinator officer, Community Dev. Officer	Project Management Unit	Climate Change Department
Pollution Prevention and Resource	Low risk	Project Coordinator, Assistant Project Coordinator, M&E officer, Community Dev. Officer	Project Management Unit	Climate Change Department

6: SUMMARY AND CONCLUSION

The proposed project is designed in consistence with Environmental and Social Policy of the Adaptation Fund, and it fully comply with the national laws and policies of the United Republic of Tanzania However, the proposed activities will be reassessed and monitored as per the ESMP at every stage for potential social and environmental risks to ensure that potential adverse impacts are avoided, or where avoidance is not possible, minimized, mitigated, and managed.

Although the AF's Environmental and Social Policy, a project can be categorized as either A, B or C, it has been revealed by the ESMP that, this project is unlikely to pose any significant adverse social and environment impacts. The already identified social and environmental risks are expected to be localized and minimal as most of proposed interventions are largely considered "green". Thus, this project is classified to be under Category B in the classification of the AF's Environmental and Social Policy.
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Annex 5: Additional Analysis of other funding sources to avoid duplications

Initiative	DP/Agency	Objectives	Implementer	Project Area	Timeframe
Smallholders' Utilisation of Smart Technologies in Agricultural Industries and natural resources management	Norway	Up scaling agriculture sectors for smallholder farmers	Ministry of Agriculture (MoA)	Manyara and Arusha regions	2017-2021
SWIOFish	WORLD BANK	To Improve Management Effectiveness of Selected Priority Fisheries at Regional, National and Community Level	The Ministry of Livestock and Fisheries, FETA, TAFIRI, MPRU and LGAs	17 LGAS along Indian Ocean	2017- 2021
Projection of Climate Change effects on Lake Tanganyika	DANIDA	To assess the impact of climate change on Lake Tanganyika	TAFIRI	Lake Tanganyika basin	2016 - 2019
Ocean Acidification Observation in Tanzanian Coastal Waters	WIOMSA	Research based on Ocean Acidification Monitoring Programme	TAFIRI	Indian Ocean	2019 - 2022
Inclusive Green Growth of the Smallholder Agriculture Sector in SAGCOT	Norway	a) To increase access to inputs and improved agronomic practices b) To improve post-harvest handling, c) To improve access to markets, d) To improve the policy environment and advocacy for climate smart agriculture	Ministry of Agriculture (MoA)	SAGCOT Region	2016-21
GCCA Programme: Integrated Approaches for Climate Change Adaptation in the East Usambara Mountains	EU	To support 8 communities living near high biodiversity forests in the East Usambara Mountains to increase and diversify incomes, strengthen resilience and reduce vulnerability to climate	ONGAWA and TFCG	Tanga Region	2015-2019

		change-related impacts.			
GCCA Programme: Scalable Resilience: Outspreading Islands of Adaptation	EU	To increase the adaptive capacity of 18 at-risk Tanzanian communities while pioneering replicable solutions to climate change vulnerability.	Community Forest Pemba	Pemba Island, Zanzibar	2015-2019
GCCA Programme: Igunga Eco-Village	EU	To increase the resilience of 9 local farmer communities in Igunga by increasing resilience to the adverse effects of climate change	Heifer International	Tabora Region	2015-2019
GCCA Programme: Eco-village Adaptation to Climate Change in Central Tanzania (ECO-ACT)	EU	To roll-out the best practices from Chololo Eco-Village and introduce new innovations based on vulnerability assessment; Strengthen the capacity of local government institutions in two districts on climate change adaptation strategies; Establish an effective knowledge management system for learning and sharing.	Eco ACT (IRDP)	Dodoma Region	2015-2019
GCCA Programme: ECO-BOMA: A climate-resilient model for Maasai Steppe pastoralists	EU	a) Access to ecosystem services protected and improved. b) Economic asset of pastoralist communities developed. c) Local government capacity to cope with climate change increased. d) Knowledge about climate-related vulnerabilities and impacts and climate change adaptation solutions increased	ECO-BOMA	Arusha Region	2015-2019

Scale up for water security and Agriculture resilience	DFID	Improving water security and agriculture resilience	Ministry of Water	National and basin level and LG	start April 2015
Assisting Institutions and Markets for Resilience	DFID	Strengthening how institutions and markets deliver climate resilience and low carbon growth		National Wide	2015 - 2020
Developing Core Capacity to Address Adaptation to Climate Change in Tanzania in productive coastal zones (GEF Project)	Least Developed Countries Fund (LDCF)	Enhancing Adaptation to Climate Change in Tanzania in productive coastal zones	VPO-DoE	Pangani, Rufiji, Bagamoyo, Zanzibar	2012-2017
Concrete Adaptation Measures to Reduce Vulnerability of Livelihoods and Economy of Coastal Communities of Tanzania	Adaptation Fund (AF)	Reducing Vulnerability of Livelihoods and Economy of Coastal Communities	VPO-DoE	Coastal zone	2012 -2017
Integrated Planning to Implement CBD and Resilience to Climate Change	Germany	Improved application of legal tools for land-use planning and participation in decision-making towards implementation of the CBD convention	GIZ	Katavi-Rukwa protected landscape and catchment near Sumbawanga	2014-2018
Climate-sensitive Water Resources Management	Germany	A soft and research based climate change adaptation aimed for a) Improved (climate-sensitive) Water Resources Data and Information b) Inter-sectoral cooperation c) Climate change adaptation in Water Resources Management d) Organisational and Leadership Development	GIZ	National, Lake Rukwa and Lake Nyasa Basins, up scaling to all other basins through multi-level approach	2013-2019

Ecosystem-Based Adaptation for Rural Resilience in Tanzania	GEF LDCF	To increase resilience to climate change in rural communities of Tanzania by strengthening ecosystem resilience and diversifying livelihoods	VPO	Kishapu, Mpwapwa, Mvomero, Simanjoro andKaskazini A (Unguja)	December 2018-December 2022
Reversing Land Degradation Trends and Increasing Food Security in Degraded Ecosystems of Semi-arid areas of Tanzania	International Fund for Agricultural Development – IFAD	A climate change project promoting adaptation through reversing Land Degradation Trends and Increasing Food Security in Degraded Ecosystems of Semi-arid areas of Tanzania	Ministry of Agriculture	Nzega, Kondoa, Singida (Mkalama), Magu), na Pemba (Micheweni),	2019-2024
Capacity enhancement of policy makers and policy support institutions for climate information generation, management and integration into development plans and programmes	African Development Bank (AfDB)		VPO	Same and Mwanga districts	2018-2022
Small Grants Programme - Community Based Adaptation	UNDP	Adaptation	Bahi and Mnayoni		2013-2017
Concrete Adaptation Measures to Reduce Vulnerability of Livelihoods and Economy of Coastal Communities of Tanzania (Adaptation Fund project)	Adaptation Fund (UNEP)	Reducing Vulnerability of Livelihoods and Economy of Coastal Communities	Coastal zone district		2012 -2017

Electrification of North Western Tanzania - Rural electrification component from Rusumo Hydropower source	EU-Africa Infrastructure Trust Fund	Access for rural households and businesses to sustainable, affordable and renewable energy services	North-West Tanzania		2012-18
Enhancing comprehensive climate change resilience in Zanzibar	UNDP	Capacity building	DoE Zanzibar		2019-2022
Enhancing national capacity for mainstreaming climate resilience in Zanzibar	AfDB	Enhancing capacity to adapt to the impacts of climate change in Zanzibar	DoE Zanzibar		2018-2020
DCFP	UK Aid	Climate Resilience for Cooperatives	ZACCA, Zanzibar		2016-2017
Simiyu Climate Resilience Project	GCF	To increase the climate resilience of rural and urban households, particularly small scale farmers and women living in the Simiyu Region and to improve policies and regulation for cross-sectoral action towards climate adaptation	Ministry of Water	Simiyu region covering Water, Agriculture and Health sectors	2019-2024
Mainstreaming Environment& Climate Change Adaptation in the Implementation of National Policies	UNDP and One UN Fund	Policy based project to ensure that environment and climate change are mainstreamed in the most economically important and vulnerable sectors of the economy in Tanzania leading to reduced poverty levels while maintaining environmental integrity	VPO	Tanzania Mainland & Zanzibar	2013-2017
Strengthening Climate Information and Early Warning Systems (SCIEWS)	GEF through UNDP	To strengthen the weather, climate and hydrological monitoring capabilities, early warning systems and available information for responding to extreme weather and planning adaptation to	PMO –Disaster Management Office	Lindi, and Arusha, Mbeya, Tanga, Kigoma, Songea, Njombe, and Iringa regions: Mafia	2013-2019

		climate change in Tanzania.		and Zanzibar Airport	
Strengthening Climate Change Governance in Zanzibar	UNDP and One Fund	To support the Zanzibar Vice presidents Office(ZVPO) in strengthening climate change governance for Zanzibar through capacity building and mainstreaming of adaptation actions in development plans		Zanzibar	
Supporting the implementation of integrated ecosystem management approach for landscape restoration and biodiversity conservation in Tanzania	GEF through United Nations Environment Programme	To review and harmonize policies and legal and institutional framework for sustainable landscape restoration initiatives	VPO/NEMC	Great Ruaha, Lake Rukwa and Malagarasi River basins	
Securing watershed services through sustainable land use management in the Ruvu and Zigi catchments (Eastern Arc Region)	GEF/UNDP	Build institutional capacity and strengthening coordination among water basin authorities and relevant stakeholders in implementing practical sustainable land use management	Ministry of Water and Irrigation	Eastern Arc Region (Pangani and Wami Ruvu Basin-Tanga and Morogoro)	2015-2020
Decentralised Climate Finance Project (DCFP)	IIED	Pilot climate financing in selected district of Manyara region	TAMISEMI	Longido Ngorongoro Monduli	2016-2020
Building Capacity for Resilient Food Security Project in Tanzania	UNEP	Support URT in strengthening knowledge and Systems to target resilient food security in line with existing government agriculture policies.		Morogoro (Movomero) Dodoma (Bahi) Tabora (Uyui) Iringa (Kilolo) Lindi (Ruangwa)	2018-2023

				Zanzibar (Unguja Kusini, Kaskazini B-Unguja, Chakechake and Wete)	