ADAPTATION FUND

PROJECT/PROGRAMME CONCEPT NOTE TO THE ADAPTATION FUND

PART I: PROJECT/PROGRAMMEINFORMATION

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Project/Programme Category:	Regular Project
Title of Project/Programme:	Climate Change Adaptation in Saltwater stressed and Freshwater Deficient Communities in Zanzibar
Type of Implementing Entity:	National Implementing Entity (NIE)
Implementing Entity:	National Environment Management Council (NEMC)
Executing Entity/ies:	Department of Environment, Second Vice President's Office, Zanzibar
Amount of Financing Requested:	US$ 3,500,000

1.0 Project Background and Context

Zanzibar forms part of the United Republic of Tanzania and comprises two major islands – Unguja and Pemba, plus a number of smaller islands with a total area of 1651 km^2. Administratively, the two islands are subdivided into five regions, three in Unguja (North, Urban West and South) and two in Pemba (North and South), with an estimated population of 1.67 million (based on NBS growth rate)[1]. The increasing population on the same area of land (from around 400 persons/km^2 in 2002, 530 persons/km^2 in 2012 to the current estimate of 960/km^2) poses a lot of challenges in terms settlements, availability of freshwater and agricultural land and other livelihood implications. The population growth also increases the level of vulnerability to climate change, which is a pattern observed in other Small Island Development States (SIDS)[2].

The islands have a tropical warm and humid climate with small seasonal temperature variation of 3-4^{0}C, the lowest temperatures being observed in July and highest in February. The seasonality is associated with the Inter-tropical Convergence Zone which moves north and south, bringing about a bimodal pattern of rainfall, with long rains during March to May and short rains between October and December. Over the last thirty years, average and maximum temperatures have been rising on both islands, the highest increases observed in the months of December to May, increased rainfall variability with higher rainfall intensity and increasing wind speed. Evidence also shows an increase in extreme weather events[3]. Using local meteorological data, future climate models for the medium-long (2040-2060) and long-term (2080-2100) project increases in average temperature, with increases in maximum monthly temperature of 1.5 to 2^{0}C by 2050s, with a similar increase across the months of the year. There will also be an increasing rainfall during months of January, February and the March-May wet season and a decreasing rainfall during the dry season (June – October). Trends also show the intensification of extreme events such as floods and dry spells, projected sea level rise of minimum 0.2m (based on IPCC, 2007 estimates), rising sea temperature and

[1] National Bureau of Statistics (NBS). 2018. National Population Projections. Ministry of Finance and Planning, Dar es Salaam and Office of the Chief Government Statistician, Ministry of Finance and Planning, Zanzibar.
[2] Nordic Development Fund (NDC). 2014. Coastal Profile for Zanzibar. Thematic Volume 1. Investment Prioritisation for Resilient Livelihoods and Ecosystems in Coastal Zones of Tanzania.
[3]Watkiss, P. Pye, S., Hendriksen, G, Maclean, A., Bonjean, M. Shaghude, Y, Jiddawi, N, Sheikh, M. A. and Khamis, Z. 2012. The Economics of Climate Change in Zanzibar. Study Report for the Revolutionary Government of Zanzibar, Climate Change Committee.

ocean acidification (Watkiss, et al., 2012). Based on risk assessment that was carried out in 2012, it is estimated that Zanzibar experiences nearly US$ 2.2 million annually in combined losses from floods, earthquakes and typical cyclones, flooding being the most significant risk and causing nearly 90% of the average loss per year[4]. All these projections indicate that Zanzibar islands are at risk and proper measures must be taken to address these projected climate impacts to protect the livelihoods of Zanzibar population.

1.1 Socio-economic context

The economy of the islands (mainly agriculture, tourism and marine resources) is highly dependent on climate and has a high level of vulnerability to weather events. Agriculture sector has direct contribution to the livelihoods of many people, providing more than 75% of the foreign exchange earnings. Increasing wave activity and wave heights are a factor in recent increase in salt water intrusion on the islands. In recent decades, Zanzibar has seen rising temperature, increased rainfall variability, higher wind speed and extreme weather events which have significantly contributed to food insecurity, whereby 26% of Zanzibaris are food insecure and 3.6% are facing chronic food insecurity[5],. The most vulnerable groups facing food insecurity are female headed households. Based on the 2019/2020 Household Budget Survey assessment, the basic needs poverty rate was is 33.7% for the rural and 15.5% for the urban population; with marked differences between Unguja and Pemba districts, the latter having a larger proportion of basic needs poor[6]. Overall, this has negative impacts on poverty eradication, economic development, food production and health. The country's rural poor, particularly subsistence farmers who are mostly women and livestock keepers, will be affected the most. Indeed, Zanzibar is at risk in terms of agricultural productivity loss due to climate change impacts. Livelihood enhancement through application of innovative adaptation mechanisms in the agricultural sector is urgently needed to improve food production and support livelihood activities in coastal rural communities. The youth will particularly benefit as this will provide an alternative for income generation in their localities. Furthermore, by addressing water shortage in the climate stricken semi-arid areas and saltwater intrusions, agriculture production will be improved and thus building climate resilient economy of Zanzibar.

This project will be implemented in the following selected villages/Shehias: Kizingo in Urban district, Kiongwe kidogo (North B district) and Mto wa Pwani in North A district Unguja island; Gando in Wete District and Kangani in Mkoani district, Pemba. Communities from these districts are heavily dependent on small scale agriculture and fisheries as means of their livelihoods. They face a number of challenges such as low crop production, minimum fish catch, high temperatures and low rainfall periods, beach erosion, long periods of droughts and sea water rise, encroaching most of paddy farming areas along the coastal belts. They are also among the sites affected by saltwater intrusion. Most of these areas cannot be cultivated, thus making the total area under crop production per household significantly reduced. The negative impacts associated with climate change are also compounded by widespread poverty leading to malnutrition and poor health, especially to vulnerable groups such as women, the disabled and children. Based on Zanzibar HBS (2020), these districts have a relatively high percentage of youth population aged between 15 and 35 years (North Unguja – 34.8%, North Pemba – 31.5% and South Pemba – 31.8%), most of them depending on agricultural related activities to support their existence. Sea-level rise and unexpected rainfall patterns represent important components of climate change for these districts, with significant implications to deterioration

[4] World Bank Group (WBG). 2016. Disaster Risk Profile: Zanzibar. Global Facility for Disaster Reduction and Recovery (GFDRR)

[5] WBG. 2017. Zanzibar Sees a Slight Decline in Poverty Except for Pemba. Press Release.

[6] RGZ. 2020. Zanzibar Household Budget Survey 2019/2020. Ministry of Finance and Planning, Zanzibar.

and degradation of natural resources of coastal environments. Subsistence agriculture is dramatically affected by the stress of climate change and farmers will be left extremely impacted without many other options to turn to.

An initial assessment on the gender issues that need to be addressed during the preparation of the detailed proposal is attached on **Annex 3**. This assessment was based on consultations at district and Shehia level and semi-structured interviews that were carried out on each project location, in order identify key issues and proposed mitigation measures. These interviews were conducted to women and youth who were the expected beneficiaries. Saltwater intrusion has been identified as the most significant threat to food security because it limits the use of land for agriculture, followed by poor agricultural practices and lack of entrepreneurship skills that would provide them with alternative means of livelihoods. Other pertinent social issues included theft carried out by youth in the following project areas: Mto wa Pwani, Gando and Kangani; most likely due to lack of any means of earning income in these areas. The proposed measures identified during the consultation process formed a basis for formulating key adaptation actions during the preparation of the concept note. These proposed adaptation actions aim to address these constraints, enhance participation and improve the livelihoods of all groups in the community.

1.2 Development context

Realizing the challenges brought about by these extreme events, the Revolutionary Government of Zanzibar has formulated strategies and plans to address climate change resilience and environmental sustainability, in line with the Sustainable Development Goals (SDG) 13. These include the Zanzibar Vision 2020, the Zanzibar Climate Change Strategy (2014) and the Zanzibar Strategy for Growth and Reduction of Poverty (2016-2020). The ZCCS provides strategic priorities and prioritized sectors for implementation. Among the strategic priorities include the building of adaptive capacity and intervention for Resilient Coastal and Marine Areas and Ecosystems. A broad set of potential adaptation options has been identified in the Zanzibar Climate Change Action Plan (2016). These have been prioritized in a short and long-term priority plan, built around an adaptation pathway that maximizes economic opportunities whilst building information to help decisions in the future, especially in the face of uncertainty. However, the island is inadequately adapted to the current climate stress, and there is an urgent need to curb the existing adaptation shortfall. While Tanzania's overall poverty role has declined, the absolute number of the poor has not, especially in rural areas. This is also the trend in Zanzibar.

1.3 Environmental context

Zanzibar being islands with high population pressure, brings about the effects of degradation of the environment through pollution and unsustainable exploitation of coastal and other natural resources. Increasing population density, and economic growth that depends heavily on the existing natural resources have given rise to a variety of additional economic activities, the combined effects of which increase the pressure on coastal areas and their resources. This frequently results in cumulative and complex impacts on the environment, depletion of resources and intensified conflict between competing user groups (NDF, 2014). For example, high population pressure is the key driver to environmental degradation since this results in unsustainable use of biomass for energy, urban expansion, increased use of fuel for transportation, change of land use from agriculture land to settlements, unsustainable extraction of water and waste disposal. The coastal areas are particularly vulnerable to climate variability and change, with low lying areas exposed to inundation through sea level rise and flooding while coastal ecosystems impacted by changes in temperature and sea water acidity.

Zanzibar is dominated by a tropical low land humid type of climate with an average annual rainfall of 1700mm and mean maximum temperature of 26^0C. The cropping calendar is influenced by rainfall which is bimodal, that is, the long rains (Masika) from March to June and the short rains (Vuli) from October to December. Generally, Pemba Island receives more rainfall than Unguja with Unguja receiving more rainfall during the short rainy season, while Pemba receives more long rains than Unguja[7]. The rain-dependent crop cultivation is highly affected by climate variability characterized by erratic rainfall and increasing dry periods and the prolonged dry periods make agriculture production impossible as it is dependent on rainfall. Very few irrigation schemes are in place to cope with dry conditions, but these cater for a very small group of households in the Islands. The tide measurements for Zanzibar indicate some increasing inter-decadal trends, with some variations over time. In particular, alongside increasing wind speeds on the islands, there have been increases in wave heights and high-water levels. This suggests that the wave climate regime could be changing, and increasing wave activity contributes to enhanced coastal erosion, especially in areas without natural protection.

Climate variability and change have the greatest impacts on freshwater availability in the islands. Limited and unreliable rainfall causes poor groundwater recharge, which in turn causes scarcity of freshwater. Urbanization and the rapidly growing tourism industry have led to increased degradation of vegetation and wetlands thus putting pressure on fresh water resources which are scarce. Furthermore, unrestrained use of freshwater by hotels and even within the households have resulted in its utilization at a rate higher than its recharge, thus leading to seawater intrusion to the freshwater aquifers. Generally, the groundwater in the islands contains salt and may be easily affected by sea water intrusion even under minimum pressure. To date many ordinary households in Zanzibar do not have enough water for domestic use and the Zanzibar Water Authority has to apply desalinization technology[8].

Moreover, population growth has led to increase in energy demand for cooking. Since fuelwood is largely used, a sizeable forest area has been deforested as a result of charcoal production. Generally, destruction of forests along the coast of Zanzibar is a result of limited livelihood activities, population increase and high demand of wood-based products. Forest clearing is usually for agriculture, settlements and development projects. In particular, rice farms were created by clearing of mangrove forests. The farmers could grow rice throughout the year owing to water availability in the freshwater frontier of the mangrove ecosystem. However, currently the rice farms are no longer suitable for rice production due to saltwater intrusion which is partly attributed to sea level rise, an impact of global warning and climate change. The clearing of mangroves for construction of tourist hotels and agricultural expansion have had detrimental environmental effects, notably increased beach erosion owing to sea waves which were in the past absorbed by mangroves.

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These economic, social and environmental impacts, if not addressed comprehensively may prevent Zanzibar from achieving its key development objectives. In this context, efforts were made to enhance capacity of the islands to address these impacts through adaptation, mitigation and other cross-cutting interventions.

1.4 Scope of the project and location of project areas

[7]Makame, O.M and Kangalawe, R.Y.M. (2018). Water Security and Local People Sensitivity to Climate Variability and Change Among Coastal Communities in Zanzibar

[8] Yu, R. and Packard, D. 2021. Assessing the Viability of Desalination for Rural Water Supply in Chwaka, Zanzibar. Independent Study Project (ISP) Collection 1471. https://digitalcollections.sit.edu/isp_collection

This project will be implemented at the following locations: Kiongwe kidogo (North B district), Mto wa Pwani (North A district) and Kizingo (Urban district) in Unguja island; Gando (Wete district) and Kangani (Mkoani district), Pemba (Figure 1). The sites were selected after consultations with the stakeholders in Unguja and Pemba islands, which include Officers from the 1st Vice President's Office (Environment), Shehia (village) leaders and community members who live within the affected areas. These sites have also been identified in the Atlas as among the saltwater intrusion-affected areas in the islands[9].

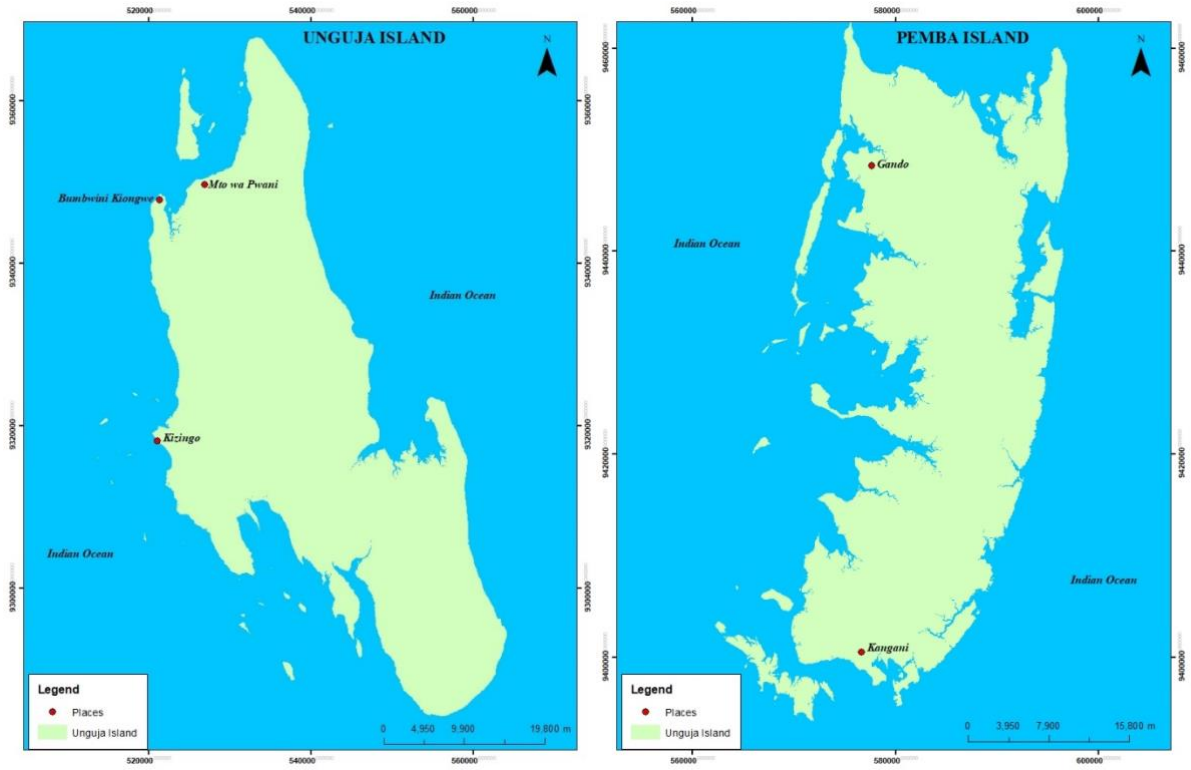

Figure 1. Maps of Unguja and Pemba islands showing locations of proposed project sites: Mto wa Pwani, Bumbwini Kiongwe, Kizingo (Unguja), Gando and Kangani (Pemba).
Source: Department of Forestry, Zanzibar

a) North A District

North A district is located in North Unguja Region with a total area of 211km^2. According to the Population Census of 2012, North A district had a population of 105,780. The main economic activities include: agriculture, forestry, fishing, hunting, livestock, manufacturing, services such as hotels, construction and merchandise trade. These sectors contribute in different ways to the district's economy. Major crops produced within the district are paddy, sweet

[9] SMZ-OMR1. 2018. Zanzibar Climate Change Atlas for Impacts of Saltwater Intrusion Database Series 1. Department of Environment. Climate Change Unit.

potato, cassava, yam, millet, banana, and different varieties of fruit and vegetables. There are also livestock including cattle, goats, chicken and ducks. Fishing and seaweed farming are among the major economic activities in the area, notably seaweed farming being predominantly carried out by women who account for 97.5% of the farmers[10].

The land area under crop production has been declining due to various factors such as increased demand for housing due to increasing population as well as factors associated with climate change and variability. The NDF (2014) report highlighted major threats as beach erosion, fisheries decline due to mangrove cutting, illegal fishing, seawater intrusion. For projected sea level rise level of 4m an inundation of 5.3% is calculated across the entire island of Unguja, increasing to 7% with a 5m sea level rise. These inundated areas are more likely to be around Mkokotoni and including the proposed project areas. When coinciding with spring high tides, such surges are likely to have even more significant impacts further inland, along much of the length of the creeks with potential seawater penetration into agricultural land and shallow wells.

Project location: Mto wa Pwani is the proposed project area in North A District. The total surface area of the Shehia of Mto wa Pwani is 4.96 km^2 with a population of 1,356 (Male: 584 and Female: 772) and 282 households. The land cover is mostly a mix sandy terrain and a mangrove ecosystem. Major livelihood activities are predominantly agricultural, livestock, and fisheries. Current impacts of climate change include seawater intrusion in settlements and agricultural land and beach erosion (Figure 2).

Figure 2. A drone image of the saltwater affected area at Fungu refu belt, Mto wa Pwani.
Source: Zanzibar Climate Change Atlas for Impacts of Saltwater Intrusion Database Series 1 (2018)

b) North B district

[10]The Revolutionary Government of Zanzibar (RGZ). 2017. Kaskazini A District profile

North B district is located south of North A district, about 11 miles (17.6 km) from Urban West, and also shares boundaries with the Central district on the south-east, West district on the south-west and the Indian Ocean on the west and east. Based on the 2012 census, the population is 81,675 of which 42.1% is below 15 years of age. The landscape of North B is divided into lowland area, which is about 95% and the coral land which is mostly found along the coast[11] . The main economic activities include agriculture, forestry, fishing, livestock, mining and quarrying, manufacturing and services such as hotels and lodges and trading. Similar to North A, area under crop has been declining, although an increasing number of households own livestock, especially cattle. However, there is no indication that farmers have managed to improve soil fertility or increased yield by using farmyard manure.

Project location: Kiongwe kidogo is one of the Shehias in Bumbwini with a population of 426 (241 males and 185 females) and 172 households. Most of the paddy fields are affected by sea water intrusion and the area keeps on decreasing if proper measures are not taken (especially Kendwa village). Proposed interventions include construction of a dike to control the seawater, planting of mangrove seedlings and other environmental management measures including use of climate smart agricultural practices.

c) Urban district

This is one of the districts that form Unguja West and Urban Region. The region has experienced a high average annual growth rate with a high level of net in-migration, with a recorded population density of 2,158 persons/sq.km in 2012. The main activities include retail and wholesale businesses, transportation services, tourism, and agriculture to a relatively small extent. Apart from businesses, fisheries and tourism form important economic activities. The district forms a connecting point to tourism related activities within and outside the town area and between Zanzibar and other locations in Mainland. The major environmental threats include beach pollution caused by uncontrolled solid and liquid waste disposal, beach erosion caused by beach sand mining, currents and waves and clearing of coastal vegetation and seawater intrusion caused by overuse of ground water.

Project location: Kizingo is located at the Shehia of Kikwajuni bondeni with an estimated population of 2257 (1061 males and 1196 females). Being a peri-urban area, there are a number of livelihood activities that aim to cater for urban population such as trade, tourism related and transportation. There is also a fish landing site at Kizingo to which artisanal fishing boats offload their fish and engage in selling at the spot. This traffic of fishermen, fishmongers and buyers has resulted in the degradation of the area thus leaving the area prone to beach erosion. Erosion is also caused by beach sand mining.

d) Wete district

Wete district is located in North Pemba and is one of the poorest districts in the islands[12], with a population size of 107,916 in 2012 and the density of 448 persons/km^2. The major economic activities are agriculture and fishing and to some extent include tourism, wholesale and retail trading and government employment. Available opportunities

[11]The Revolutionary Government of Zanzibar (RGZ). 2017. Kaskazini B District profile

[12] District and regional profiles sourced from: (i) 2012 Census report and (ii) NDF. 2014. Coastal Profile for Zanzibar Region Volume II: Investment Prioritization for Resilient Livelihoods and Ecosystems in Coastal Zones of Tanzania. Includes threats identified in each region as prioritized by using Coastal Rapid Impact Assessment Matrix (CRIAM) approach.

for economic development include offshore fisheries, beekeeping, aquaculture, high-tech horticulture to cater for tourist hotels and ecological and cultural tourism. he incidence of poverty in the district has declined marginally from 50.8 in 2009/10 to 47.7 in 2014/15. This means that poverty declined by a magnitude of only 3 percentage points. Meanwhile, the level of food poverty in respect to head count rate was 15.7 in 2014/15, compared to 21.1 reported in 2009/10. This means that food poverty has declined by only 5 per cent from the previous level.

Project location: Gando is one of the twelve Shehias affected by sea water intrusion. The total area of the Shehia of Gando is 11.3 km^2 with a population 4,470 (Male: 1,905 and Female: 2,565) and 820 households. Rainfall distribution in the region is over 2000 mm of annual average. Soils are predominantly of Mtifutifu (silty). Major livelihood activities include agriculture (coconuts, rice and other food crops), livestock, fisheries and mariculture (seaweed farming). About 80% of the population engaged in farming in the area has been affected by seawater intrusion in their fields, resulting in significant decrease in rice yields per household, decrease of grazing land, with a high level of insecurity. Although a 200-meter dike has been constructed with clay and sand, this temporary measure has not been successful. Most affected areas are Nduuni and Mpanja villages.

e) Mkoani district

The district is located in South Pemba, where it is bordered by Chake district to the north and the Indian Ocean to the south, west and east[13]. It has an area of 207 km^2 and a population of 97,867 (47,460 males and 50,407 females) based on the 2012 census. Economic activities include agriculture and fisheries as most important. South Pemba Region has more than 70% of the agricultural land in the island, cultivating cassava, paddy, maize, sweet potatoes, millet, sorghum, bananas and vegetables. Main cash crops are cloves, coconut and seaweeds. Tourism related activities are few and underdeveloped although the marine ecology of the area harbors the best coral reef diving sites in East Africa. Major environmental threats include beach erosion due to mangrove cutting and beach sand mining hence leaving the beaches prone to erosion due to uncontrolled currents and waves.

Project location: Kangani Shehia has an estimated population of 6,308 (3069 males and 3239 females), 889 households and a relatively high household size of 5.4. Major livelihood activities include agriculture, livestock keeping, fisheries and seaweed farming. Most salt-affected areas are Maotwe and Kwa Sharifu villages. Major climate change challenges include biodiversity loss, saltwater intrusion resulting in decreased area under cultivation and drought. Proposed measures include dike construction (about 500 meters), mangrove restoration and rainwater harvesting. Proposed livelihood improvement activities include vegetable production, livestock keeping, poultry and spice farming.

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1.4 Project objectives

The project's main objective is ***to build the capacity of smallholder farmers in tackling climate change impacts through practical and innovative solutions that have concrete and tangible outputs***. Specifically, the project envisages to achieve the following:

(i) Support water supply infrastructures for domestic use and irrigation.
(ii) Restoration of salt affected farmlands in selected sites in Unguja and Pemba islands.
(iii) Promote Climate Smart Livelihood activities.

[13] The Revolutionary Government of Zanzibar (RGZ). 2017. Mkoani District profile

(iv) Institutional capacity building of local government authorities and communities in planning, implementation of climate change adaption actions and dissemination of project results and lessons learnt.

1.5 Project Components and Financing:

Table 1 shows the expected outcomes that will be derived from the implementation of component activities that will use the indicated budget in each component.

Table 1: Project components, Expected concrete outputs and Outcomes, Indicative activities and budget

Project Components	**Expected Concrete Outputs**	**Indicative activities**	**Expected Outcomes**	**Amount (US$)**
1.Support to water supply infrastructures for domestic use and irrigation	1.1 Water harvesting reservoirs constructed for improved water availability	1.1.1 Mobilization and site selection for construction of the reservoir 1.1.2 Technical designing of the reservoirs considering location and capacity 1.1.3Construction of the reservoirs 1.1.4Training of communities on reservoirs operation and maintenance procedures	Increased water supply leading to improved production in various sub sectors	600,000
	1.2Water efficient irrigation schemes established	1.2.1 Site selection and community mobilization to agree on the site for the irrigation schemes 1.2.2 Installation of drip irrigation system 1.2.3 Establishment of community irrigators organization (IO) 1.2.4 Training of leaders of IO on various topics including operation and maintenance of the irrigation system	Improved food security for vulnerable communities	300,000
	1.3 Improved water supply for school children	1.3.1 Technical design of water storage facilities 1.3.2 Construction of storage facilities and placement of 'gutters' for water harvesting in schools 1.3.3 Awareness raising on conservation of water resource	Increased availability of water in schools Reduced incidences of water related diseases	70,000
Component 1 Sub-total				**970,000**

Project Components	Expected Concrete Outputs	Indicative activities	Expected Outcomes	Amount (US$)
2.Restoration of saltwater affected farm lands and degraded coastline	2.1 Restored farmland used for crop production	2.1.1 Community mobilization to agree on the site for dykes construction 2.1.2 Dyke construction to prevent salt water inundation 2.1.3 Mangrove planting for restoration of degraded land 2.1.4 Support saline agriculture trials for selected crops	Increased area under agricultural production Ecosystem restored	800,000
	2.2 Constructed protection seawall for restoration of degraded coastline (	2.2.1 Community mobilization and demarcation 2.2.2 Technical design of the seawall 2.2.3 Construction of the seawall 2.2.4 Planting trees for conservation of the area	Beach erosion reduced	600,000
Component 2 Sub-total				**1,400,000**
3. Conservation and Climate Smart Livelihood activities	3.1 Tree nurseries established to enhance resilience to climate change	3.1.1 Awareness raising on the need for restoration of coastal vegetation 3.1.2 Training of communities on tree nursery establishment 3.1.3 Planting of trees and other indigenous species on affected areas	Livelihoods of affected communities improved	80,000
	3.2 Production of high value horticultural crops increased	3.2.1 Training on horticulture production for selected crops 3.2.2 Support provision of extension services to farmers 3.2.3 Support business development activities		160,000
	3.3 Production of shellfish by Women group increased	3.3.1 Training on good shellfish farming practices 3.3.2 Support business development skills 3.3.3 Provide inputs for business establishment		60,000
Component 2 Sub-total				**300,000**
4. Institutional capacity building of local government authorities and communities in planning, implementation	4.1 Enhanced capacity of key implementing sectors to integrate climate smart practices and manage adaptation assets	4.1.1 Train LGA staff on mainstreaming and planning for climate related actions 4.1.2 Conduct trainings in each project area depending on identified priorities	Improved capacity of local government authorities and key sectors in planning and implementing adaption actions	100,000

Project Components	Expected Concrete Outputs	Indicative activities	Expected Outcomes	Amount (US$)
of climate change adaption actions and dissemination of project results and lessons learnt		4.1.3 Facilitate district officers to provide technical assistance to farmers on climate smart technologies and practices 4.1.4 Monthly reflection meetings		
	4.2 Capacity of communities to adopt climate smart practices strengthened	4.2.1 Establishment of Farmers Associations (FA) in new areas 4.2.2 Training of FA members on planning for climate related actions 4.2.3 Build capacity of farmers on climate smart practices and integrated water management practices 4.2.3 Support Community Based Trainers to train peer farmers	Improved capacity of local communities to plan and implement adaptation actions sustainably	100,000
	4.3 Project results and lessons learnt disseminated	4.3.1 Facilitate farmers exchange visits/study tours 4.3.2 Document lessons learnt and best practices through Publications, radio and television programs 4.3.3 Disseminate best practices to other stakeholders		96,000
Component 4 Sub-total				**296,000**
1. Project execution cost				282,000
2. Total project cost				2,966,000
3. Project cycle Management Fee charged by the Implementing Entity				252,000
4. Amount of financing required				**3,500,000**

Table 2. Projected Calendar

Milestones	Expected Dates
Start of Project Implementation	January 2023
Mid-term Review	June 2024
Project Closing (6 months after completion)	June 2026
Terminal Evaluation	December 2025

PART II: PROJECT JUSTIFICATION

A: Describe the project components, particularly focusing on the concrete adaptation activities, how these activities would contribute to climate resilience.

To be able to effectively implement concrete adaptation actions that will benefit affected communities and contribute to climate resilience, the project has been designed to be implemented under four key components:

Component 1: Support to water supply infrastructures for domestic use and irrigation
Component 2: Restoration of salt-affected farmlands
Component 3: Promotion of climate resilient livelihood activities
Component 4: Institutional capacity building of local government authorities and communities in planning, implementation and dissemination of project results and lessons learned

Component 1: Support to water supply infrastructures for domestic use and irrigation

Proper management of water resources is vital for the socioeconomic improvement of Zanzibar communities, especially those who live in the rural areas and primarily depend on agriculture related activities for their livelihoods. This component will benefit communities in selected water stressed areas where climate change is also exacerbating their vulnerability. The unreliable water sources affect their social wellbeing as they cannot maintain a good hygiene of their homesteads to the detriment of the health of household members. Water that is sought by mostly women and children from long distances is used with much care within the households. Furthermore, erratic and unreliable rainfall places many poor households at risk of not having enough harvest that will make them food secure. The proposed project will support the construction of rainwater harvesting infrastructures with supply water to irrigation and domestic use.

Output 1.1 Water harvesting reservoirs constructed for improved water availability

The project will support the construction of rainwater harvesting reservoirs at Mto wa pwani, Gando and Kangani. Each reservoir will have a capacity that will carry at least 1.8 million litres of water. The reservoir design has been replicated from the proposed design constructed at Bumbwini kiongo. The reservoir will have a radius of 10.7 m and a height of 5 m. The reservoir will have a catchment area consisting of 3 open channels collecting rainwater to the check dam (small size) which traps and filters the incoming sediments. The check dam then drains sediment –free rainwater to the main reservoir which will be made of concrete. The reservoir floor will also be made of concrete to avoid rainwater percolation in the soil. To prevent evaporation water losses, the reservoirs will be covered. The channel draining water from the check dam to the main reservoir will be a closed channel, notably a large pipe fitted with a screen to filter sediments. The harvested water will be used to cope with rainfall shortage in the area and improve agricultural production through irrigation, while water supply will potentially benefit communities in Gando and Kangani, where water shortage even for household use has been found to be crucial, especially during the dry season. Key beneficiaries include farmers and livestock keepers, children and adolescent girls who spend a long time to fetch water for household use. The project staff will advocate the use of water efficient drip irrigation system to avoid water loss and increase crop water productivity. The drip systems will be provided in equal proportion among the farming groups comprising of men, female and youth. The irrigation schemes will enhance yields of crops such

as paddy and horticultural crops thus improving the livelihoods of communities building their resilience to climate change impacts. Improved yields will help to address food security and water availability issues identified by women in these selected sites. The expected number of beneficiaries include 282 households of Mto wa Pwani, 820 and 889 households of Gando and Kangani, respectively.

The initial stage will involve mobilization of the community within the Shehia and selection of a suitable site for the construction of the reservoir. Once the site has been selected and approved, the district water engineer in collaboration with officers from DOE, ZAWA and MANRLF will arrange for technical design and supervise the construction of the reservoirs. Selected members of communities will be trained on their operation and maintenance to ensure that they are properly managed. Operation and maintenance (O&M) of water reservoirs refers to all activities required to keep the reservoirs functional.

Before embarking on training of communities, a Shehia Water Reservoir Committee (SWRC) will be established and tasked with a duty of managing the reservoir. The SWRC will have a proportionate number of males, females and youth. The established SWRC will have an operation manual including bylaws to be enforced. Each reservoir shall have about 100m zone where no activities will be allowed. The buffer strip will be planted with grasses and water friendly trees.

The following indicative activities will be implemented:

1.1.1 Mobilization and site selection for construction of the reservoir
1.1.2 Technical designing of the reservoirs considering the location and capacity (liters of water)
1.1.3 Construction of the reservoirs
1.1.4 Training of communities on reservoirs operation and maintenance procedures

Output 1.2. Water efficient irrigation schemes established

To increase crop yield, the project will support the establishment of irrigation schemes at Mto wa pwani, Gando and Kangani that will use water efficient technologies such as drip irrigation (Figure 3). The purpose is to supplement rainfed agriculture and improve production of selected crops and hence ensure food security in the households. Farmers who cultivate high value crops will be selected and provided with initial support to install drip irrigation facilities. Prior to the start of operations, Local Government Authority (LGA) staff will assist communities to establish Irrigators Organization that will help to organize and assist interested farmers to cultivate by using climate smart practices. The Irrigators Organizations will have equal presentation of males, females and youth.

Figure 3: An example of drip irrigation facility installed on a farm in Zanzibar
Source: Zanzibar Horticulture Linkage Project

Activities:

1.2.1 Site selection and community mobilization to agree on the site for the irrigation schemes
1.2.2 Installation of drip irrigation system
1.2.3 Establishment of community irrigators organization (IO)
1.2.4 Training of leaders of IO on various topics including operation and maintenance of the irrigation system

Output 1.3 Improved water supply for school children

Many schools in the rural areas do not have reliable source of water for many other purposes apart from drinking. The school rooftop rainwater harvesting system seeks to provide a source of water for hygiene purposes while in schools. This is particularly challenging for young girls where in some instances they are forced to walk long distances to fetch water for use in toilets, or individually carry a gallon of water from home. The amount of rainwater that can be collected depends on the rooftop area, tank size and the rainfall. It is necessary that the roof and gutters are kept clean. Schools will also have the option of using harvested water for vegetable production and hence raise awareness to the young generation on the importance of nutrition. A minimum of 1000 schoolchildren will benefit from the rainwater harvesting system (note: the school has primary and secondary students).

Rainwater harvesting systems in schools can be used to educate children about the benefits of conservation of the dwindling freshwater resource and to encourage an environmentally responsible attitude.

Activities:

1.3.1 Technical design of water storage facility
1.3.2 Construction of storage facilities and placement of ‘gutters’ for water harvesting in schools
1.3.3 Awareness raising on conservation of water resource to schoolchildren

Component 2: ` Restoration of saltwater affected farmlands and degraded coastline

This component aims at restoring the farmlands that have been affected by saltwater intrusion due to sea level rise. Salt affected farmlands are common in Unguja and Pemba and about 145 acres have been affected by salt water intrusion including agricultural lands which are mostly located within the sea level elevation adjacent to the oceans. Moreover, the vast majority of the coastline of Unguja and Pemba islands which was previously covered by mangrove vegetation is devoid of mangroves which acted as shock absorbers by reducing the wave action during high tides. Todate, many farmers are unable to cultivate due to sea water inundation. Therefore, agricultural affected lands need to be rehabilitated to restore the production capacity of farmers and ensure food security in the affected areas.

Output 2.1 Restored farmlands used for crop and vegetable production

Restoration of the saltwater-affected farmlands will occur in two stages. It will involve construction of dikes to prevent further saltwater intrusion to the affected areas and replanting of mangrove in the degraded areas. The second step is to use smart agricultural practices to make use of the affected land that is no longer productive.

Mangroves play an important ecological role in the accommodation of adaptive responses to sea level rise, storm surges as well as supporting livelihoods and provide critical ecosystem services. Mangroves also help to prevent intrusion of sea water by trapping sediments and accelerating land building processes in tide-dominated coastal and estuarine environments. They act as safeguards to the coastlines from storm surges, erosion and floods by moderating wave processes[14]. Although mangrove stands are considered protected areas in Zanzibar, they are illegally harvested and used locally as fuel wood or exported to the Gulf States as poles and bark. Mangroves are also vulnerable to the impacts of climate change, changes in precipitation patters accelerate sedimentation transport, leading to potential siltation and changes in hydrological flows; temperature increases impact tree growth and development, and sea surface temperatures modify trees. The project will support mangrove planting with a view of expanding the mangrove cover for restoration of salt water affected farm lands The project aims at restoring the vegetation in selected project sites. This will be undertaken using replanting methods that will be done directly by local groups that are available in the project sites.

The restoration of mangrove ecosystem will be carried out in accordance with the technical norms and procedures of Department of Forestry, Zanzibar. It will be planned on the basis of an initial inspection of hydrology, tide patterns, soils, salinity and micro-topography in each target site. Planting material will be collected from local mangrove stands, and then planted directly without the need for nurseries. Establishment of conditions favorable for mangrove recolonization is a more effective solution as it will avoid seedling production costs and also significantly reduce the costs of plant transport. It is expected that the planted mangrove will eventually also contribute to buffering wave impacts, as well as constituting a physical barrier to seawater intrusion inland.

There are a number of climate smart agricultural practices that can be applied to allow for utilization of saltwater affected lands. These include promotion of soil and water conservation techniques to support plant growth in water stressed conditions. These techniques are expected to maintain freshwater resources and enhance water retention in

[14] Mabula, M. J., Mangora, M. M. and Muhando, C. A. 2017. Peri-urban Mangroves of Dar es Salaam, Tanzania are Highly Vulnerable to Anthropogenic Pressures. Advances in Ecological and Environmental Research, 141-172. Science Signpost Publishing

the soil. The project will support ongoing research activities that are carried out by MANRLF[15] and Sokoine University of Agriculture on testing salinity tolerance of selected crop species that are suitable to grow in the salt affected areas.

The project will also support the construction of dikes to prevent sea water intrusion and reclaim marginal land for crop growing. The dikes will be built by using sand, rock and rubble with gates to allow flood water outflow and prevent salt water inflow and will be are accompanied by replanted mangroves (restoration) to enhance natural flood protection. These provide a lower cost alternative than hard engineered structures and maintenance and review the level of defence they offer would be assured. The dikes will be built in three project areas that represent among the most vulnerable parts in Zanzibar- Gando, Kangani and Mto wa pwani (820 hh, 889 hh and 282 hh, respectively).

Activities

2.1.1 Community mobilization to agree on the site for dikes construction
2.1.2 Dike construction to prevent saltwater inundation
2.1.3 Mangrove planting for restoration of degraded land
2.1.4 Support saline agriculture trials for selected crops

Output 2.2 Constructed protection seawall for restoration of degraded coastline

Sea walls are constructed to protect areas of human habitation and conservation from the action of tides and waves. The project aims to rehabilitate and upgrade the existing crumbling and temporarily constructed wall at Kizingo to enable it provide protection against sea level rise, saline intrusion and build climate resilience. The 300 m defense structure will enable current users to continue with the income generating activities while reducing the threat posed by coastal erosion and flooding. Replanting of trees will further enhance protection of the beach and reclaim the aesthetic beauty of the area (Figure 4). A minimum of 3,000 community members comprising of fishermen, buyers and sellers will benefit from the restoration of the seawall.

A technical design of the seawall will be made by Engineers after consultation with different stakeholders including those who are currently using the area.

Activities:

2.2.1 Community mobilization and demarcation
2.2.2 Technical design of the seawall
2.2.3 Construction of the seawall
2.2.4 Planting trees for conservation of the area

[15] Ministry of Agriculture, Natural Resources, Livestock and Fisheries

Figure 4. Beach erosion at Kizingo and the remnants of a seawall that provided some level of protection

Component 3. Conservation and Climate Smart Livelihood activities

This component will focus on conservation and livelihood activities to support climate resilience measures adapted by communities. The livelihoods of most of the Zanzibar rural communities depend on rainfed agriculture, fisheries and other climate sensitive resources. Climate resilient measures are pertinent to these communities to enable them ensure food security in the households. Diversification into more than one farming practice may help to spread the risk in case of failure of one of the livelihoods activities. The adoption of integrated climate resilient livelihoods diversification system is envisaged to improve the household income and hence reduce poverty. Furthermore, conservation of the coastal ecosystems through mangrove restoration and other adaptation measures will help to reduce the impacts of saltwater inundation in farmlands rendering such areas not cultivable by using traditional farming practices.

Output 3.1 Tree nurseries established to enhance resilience to climate change

The project will promote the establishment of tree nurseries to enable restore the coastal vegetation in degraded areas, and to generate income from the sale of seedlings. Population growth and economic development involving increased urbanization and increased investment in the tourism industry have led to clearing of coastal forests for housing and

charcoal making to cater for biomass energy demand. The removal of mangrove cover has led to salt water inundation into farmlands and scarcity of freshwater, resulting to food insecurity and scarcity of freshwater. The communities in Gando and Kangani (Pemba), Kizingo and Mto wa pwani (Unguja) support mangrove restoration and tree planting initiatives that will provide them with alternative source of energy and livelihoods. Therefore, the seedlings will be supplied to institutions and individuals. Mangrove tree seedlings will be given priority given the ecosystem services they provide in the marine ecosystem and their high carbon sequestration potential. Other indigenous tree seedlings that are location specific and fruit tree seedlings will also be supplied to groups that will be formed and comprising of a gender responsive presentation. This activity is expected to benefit a total of 2,100 households residing in the selected locations of Unguja and Pemba islands.

Activities

3.1.1 Awareness raising on the need for restoration of coastal vegetation
3.1.2 Training of communities on tree nursery establishment
3.1.3 Planting of trees and other indigenous species on affected areas

Output 3.2 Production of high value horticultural crops increased

Most of the fruits and vegetables are imported from Tanzania mainland since the Zanzibar farmers cannot meet their ever-increasing demand in the islands. The high demand is due to growing tourism industry in the islands. Production of horticultural crops is input intensive with high demand for water supply. If communities are provided with water harvesting and irrigation schemes and provided with extension services on good management practices, the smallholder farmers will be able to grow horticultural crops throughout the year and produce quantities that will enable them supply to the hotels and other tourism facilities in the required quality. This will in turn improve their net household income as well as encourage households to use more vegetables and fruits as part of their dietary requirement. Such activities can be highly adopted by youth (both males and females) who can accept new innovations more readily when compared with the old generation.

The project will support cultivation of horticultural crops namely tomatoes, sweet pepper, hot chili (mwendokasi), water melons and green peas which are high demand crops that can fetch good prices. At least three project sites will benefit from this activity: Mto wa pwani, Kangani and Gando, where proper land preparation techniques, use of quality seed, good management practices, use of integrated pest management and harvest and post-harvest management will be applied in order to add value to the harvested produce.

The possibility of using simple structured greenhouses will be explored at Mto wa pwani. Beneficiaries will include both male and female farmers, priority being accorded to female farmer groups who are engaged in vegetable production.

Activities

3.2.1 Training on horticulture production for selected crops
3.2.2 Support provision of extension services to farmers
3.2.3 Support business development activities

Output 3.3 Production of shellfish by Women group increased

Marine resources play a huge role in livelihood and food security in Zanzibar with total exports of fish and fishery products valued at USD 158.7 million in 2015[16]. The coastal area and ocean therefore, remain as crucial assets for local men and women living in the Islands. Mariculture is a key livelihood activity and has good prospects for increasing resilience to climate change impacts. Shellfish farming is among the mariculture activities mainly carried by women in the Urban district, organized into cooperative group for production of half pearls. Shellfish are also used for conservation in community-based initiative known as no-take zone[17]. These conservation initiatives have been initiated to minimize depletion of some species such as cockles, octopuses and other species for subsistence and sale[18]. If properly managed and farmed this economic activity can significantly improve the livelihoods of women engaged in this enterprise[19].

The project will fully involve Institute of Marine Science and Fisheries Department to select species that are adaptable to their environment, build capacity of women to improve shellfish farming and develop business skills for value chain addition. It is expected to benefit at least 100 women who are members of the existing cooperative group.

Activities

3.3.1 Training on good shellfish farming practices
3.3.2 Support business development skills
3.3.3 Provide inputs for business establishment

Component 4: Institutional capacity building of local government authorities and communities in planning, implementation of climate change adaptation actions and dissemination of project results and lessons learned

Institutional capacity building is required in order to strengthen capacity of all those involved in the implementation of adaptation interventions, which include local institutions, farmers associations and communities. As predominantly rainfall dependent agricultural communities, the project will seek to involve local people to adopt smart agricultural practices of selected crops. These rainfed crops are the most vulnerable to climate change. Climate-resilient technologies are harnessed to risk coping, including the introduction of adapted selected varieties, water-efficient irrigation and irrigation management and Integrated Pest Management (IPM). Farmers associations will be supported to promote the adoption of these climate smart agricultural practices. The project will also promote learning and knowledge management by documenting and dissemination of successful and practical lessons to other communities. These lessons will be disseminated in the form of video documentaries, brochures and prepared booklets.

Individual communities will determine priority issues that require capacity building, where training needs assessment will identify capacity needs for different implementing partners. The capacity building programme will ensure equal participation of different groups in the area.

[16] Food and Agriculture Organisation (FAO). 2018. FAO in Tanzania: Zanzibar Mariculture Leaps Forward. Data accessed: http://www.fao.org/tanzania/news/detail-events/en/c/1125890/

[17] Msuya, F. E., Muumin, H. and Hamed, S. 2016. Status of Aquaculture in the Zanzibar Islands. World Aquaculture 47: 25-29.

[18] USAID. 2013. Management Plan for No-take Zones (Unguja Ukuu and Kikungwi). A collaborative effort between Kikungwi and U/Ukuu communities, Western Indian Ocean Marine Science Association, Institute of Marine Sciences, Menai Bay Conservation Areas and the University of Rhode Island's Coastal Resources Center

[19] Saidi, I., Johnston, B. and Southgate, P. C. 2017. Potential profitability of pearl culture in coastal communities in Tanzania. Aquaculture Reports 5: 10-17. www.elsevier.com/locate/aqrep

Output 4.1 Enhanced capacity of key implementing sectors to adopt climate smart practices and manage adaptation assets

Rainfed agriculture which is highly weather dependent is the predominant practice and hence vulnerable to climate change. Coping strategies for communities that highly depend on this practice include use of drought tolerant varieties, water use efficiency, irrigation practices, integrated pest management practices and other land use practices. Thus, it is important to build capacity of the local institutions to promote the adoption of climate smart practices. This will result in among others increasing farmers' capacity on how to cope under climate uncertainty. To be able to address the issues, Local Government Authorities (LGA) must be able to influence the transformation from conventional to climate smart agricultural practices. This will result in among others, to increase farmers' capacity on how to practice smart agriculture and apply technologies that will be new in the selected project area, thus amplifying the adaptation mechanism as well as increase farmers' resilience.

Capacity building of both local and central government institutions is in line with the Zanzibar Climate Change Strategy 2014. This project will focus on the five districts of North A, North B (Mto wa pwani and Kiongwe kidogo), Urban (Kizingo), Wete (Gando village) and Mkoani (Kangani) Pemba. Through training and financial support provided by this project, the community members, local government leaders (Shehas) and district officers will be capable of mainstreaming resilience measures when planning and implementing adaptation activities. At local level, the project will facilitate monthly meetings that will aim at harmonizing work plans and reviewing monthly progress of activities. Such meetings will ensure the accountability of officers in serving the communities. About 36 monthly meetings will be organized during the project lifetime and shall bring together all key stakeholders in the project. At the national level, the meetings will be conducted once per quarter whereby all key project stakeholders will be involved. The meetings will involve presentations from the project coordinator on project progress, key results and lessons learnt.

Some practices will require the adoption of new techniques in the area where knowledge on operation and maintenance of the newly acquired assets is limited or nonexistent. For example, establishment of water harvesting structures or drip irrigation facilities will require community members to be trained on their operation and maintenance in order to make the interventions sustainable.

Activities:

4.1.1 Train LGA staff on mainstreaming and planning for climate related actions
4.1.2 Conduct trainings in each project area depending on identified priorities
4.1.3 Facilitate district officers to provide technical assistance to farmers on climate smart technologies and practices
4.1.4 Monthly reflection meetings

Output 4.2 Capacity of communities to adopt climate smart practices strengthened

Properly implemented activities will enhance positive impacts and contribute towards climate resilience measures. This will ensure that communities and local government authorities are fully informed and involved in decision making aiming at community responsibilities and benefits. The project aims to build human and technical capacity to integrate adaptation issues in their planning process, which is important for sustainable development. To achieve this, lessons learnt will be documented and disseminated in order to share the best practices, build awareness and

capacity on climate resilience measures in communities. At least 2100 households will benefit from different climate resilient activities that will be selected in their localities.

Activities
4.2.1 Establishment of Farmers Associations (FA) in new areas
4.2.2 Training of Farmers Association members on planning for climate related actions
4.2.3 Build capacity of farmers on climate smart practices and integrated water management practices
4.2.4 Support Community Based Trainers to train peer farmers

Output 4.3 Project results and lessons learned disseminated

Lessons learned during and after the implementation of key activities are envisaged to enhance positive impacts that will lead to more sustainable climate resilient measures. Exchange visits between farmer groups will enhance farmer to farmer transfer of information, knowledge, experience and resources. Well documented lessons will serve to promote best practices that have been tested and have been observed to be successful. This will also provide opportunity for scaling up of activities within the islands and even beyond, especially in areas with similar environmental conditions.

Activities:
- 4.3.1 Facilitate farmers exchange visits/study tours
- 4.3.2 Document lessons learnt and best practices through publication, radio and television programs
- 4.3.3 Disseminate best practices to other stakeholders

B. Describe how the project 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 will avoid or mitigate negative impacts, in compliance with the Environmental and Social Policy of the Adaptation Fund.

All four components of this project are designed to contribute to the environmental, economic, and social benefits to communities through the improved capacity to adapt to the impacts of climate change. This project also complies to the Environmental and Social Policy of the Adaptation Fund whereby relevant risks are clearly identified, and mitigation measures are proposed.

Environmental benefits

The proposed project will have environmental benefits in four key areas. Construction of dikes and seawall will prevent further saltwater intrusion and hence reduce land degradation on farmlands which support the livelihoods of selected coastal communities in the Shehias of Mto wa Pwani, Gando and Kangani, with estimated populations of 1074, 2210 and 3,995, respectively. Restoration of mangrove forests along the shorelines will reduce beach erosion and enhance other ecosystem services provided by mangroves. Mangroves play an important ecological role in the accommodation of adaptive responses to sea level rise, storm surges and help to prevent intrusion of sea water by trapping sediments and accelerating land building processes in tide-dominated coastal and estuarine environments. Furthermore, the coastal ecosystems of mangroves contain large stores of blue carbon and if their ecosystems are damaged or degraded, the carbon sink capacity is lost or adversely affected, thus their conservation can ensure that

they continue to play their role as long-term carbon sinks[20]. Thirdly, construction of rainwater harvesting structures will also improve water availability, enhance the protection of freshwater aquifers and promote efficient use of water. This will in turn contribute to the recharge of groundwater aquifers which will enhance stabilization of the freshwater-saltwater equilibrium. Fourthly, the adoption of climate smart agriculture practices (which promotes soil and water conservation), integrated farming systems approach and other best environmental conservation practices such as tree planting will improve the natural vegetation cover and contribute to proper management of soil and water resources. In particular, tree planting will significantly contribute to the restoration of forests which were previously cleared for various reasons.

Economic benefits

The economic and financial significance of investing in resilience measures cannot be overemphasized. Sound management of coastal resources, such as the health of ecological systems arising from mangrove restoration and soil and water conservation underpins many other economic sectors and the employment that these provide. The project will also support the availability of harvested water, which is vital for enhancing agricultural production, economic advancement, improved food security and health of beneficial households. Establishment of nurseries for seedlings will provide communities with economic benefits as means of alternative livelihoods since additional seedlings will be sold to other community members. Of specific interest is the improvement of shellfish farming to women at Kizingo which will provide them with opportunities for further advancement of their investment programs identified in Components 1, 2 and 3, enhance the natural resilience of the ecosystems to the impacts of climate change and protect livelihoods from climate shocks. Component 4 emphasizes on enhancement of human capacity to sustain the investments and resilience measures implemented, which will ultimately have long term economic benefits to the communities. The impact evaluation or beneficiary assessment to be conducted during the project's duration will provide economic figures to quantify some of the benefits gained. Hence, the activities proposed in this proposal have been designed to transform the economic status of communities from resource-poor and vulnerable to resource-rich and resilient to climate shocks.

Social benefits

The project is expected to generate positive social benefits that improve agricultural practices, manage water resource by rainwater harvesting and therefor ensure long term availability of freshwater for agriculture and improvement of overall health and sanitation aspect in selected schools that will be provided with water harvesting and storage facilities. Seedlings from established nurseries will be used for establishing woodlots for communities as well as a means of providing income by selling them. Being a project with gender-responsive climate actions, activities will be designed to ensure women empowerment at all stages from planning to implementation. Youth will also be actively involved by providing equal opportunities in the decision making and empowering them economically. It will also encourage them to contribute to social development in their localities, discourage them from migrating to urban areas, or even reduce incidences of petty theft which have been cited as a problem in areas such as Mto wa Pwani, Gando and Kangani. Restoration of farmlands and managing saltwater intrusion will also provide members of the community with an opportunity to continue investing in livelihood activities without considering migrating to urban areas.

[20] International Union for Conservation of Nature (IUCN). 2017. Blue Carbon – Issues brief.

Climate smart livelihood activities provide more opportunities to all age groups. For example, in the agriculture sector, it is the practices that aim to increase productivity and income, adapting and building resilience to climate change, developing opportunities to reduce emissions of greenhouse gases and enhancing achievement of national food security[21],[22]. This approach identifies most suitable strategies to achieve sustainability based on the national and local priorities and conditions. They include proper crop, livestock, soil and water management, improved agroforestry and enhancement of nature- based solutions[23]. A successful implementation of concrete actions requires behavioral changes within communities, backed up by institutional support and multi-stakeholder participation. Capacity building is also required to promote these novel interventions versus business-as-usual practices.

The livelihood activities supported by the project will have a multiplier effect and the benefits are expected to trickle down to more vulnerable and marginalized groups. By documenting the lessons learned, the young generation is expected to take up the innovations by seeing the economic benefits derived from the implementation of climate smart agricultural practices, water harvesting practices and tree planting.

C. Describe or provide an analysis of the cost-effectiveness of the proposed project

Under the business-as-usual scenario, saltwater intrusion and mangrove destruction will increase the level of vulnerability of coastal communities in both islands of Unguja and Pemba. Valuable resources accrued from the marine ecosystems will be significantly reduced, which will in turn affect the livelihoods of communities. The economic value of some ecosystems' functions is currently poorly understood, but their services such as those related to Carbon sequestration and conservation cannot be underestimated. Hence failure to implement the project will significantly increase adaptation costs by supporting these vulnerable communities that will be in distress, especially during the extreme weather events. The accessibility to water, if not addressed, means a lot of time will be spent in search of water at the expense of other household or economic activities that could generate an income. Concrete adaptation actions described in this project will significantly reduce the level of vulnerability to these communities.

Construction of seawall protection and dikes is aimed at preventing the land from further degradation hence allowing communities to utilize such land for crop production to support their families and sell any additional produce to enable them purchase other household requirements. The properly constructed water harvesting structures (reservoirs) in selected villages and schools means water will be accessible for a longer time for crop farming, livestock and household use, especially during the dry seasons. Less time will be spent in search for water for women and schoolchildren thus allowing more time to focus on other household activities. The water harvesting facilities are more cost-effective, allow for recharge of groundwater in the aquifers and thus minimize the application of

[21] Williams, T. O., Mul, M., Olufunke, C., Kinyangi, J., Zougmore, R., Wamukoya, G., Nyasimi, M., Mapfumo, P., Speranza, C. I, Amwata, D., Frid-Nielsen, S., Girvetz, E., Rosenstock, T. and Campbell, B. 2015. Climate Smart Agriculture in the African Context.

[22] GIZ/UNDP. 2021. What is climate smart agriculture. https://www.giz.de/en/downloads/ICCAS_What%20is%20Climate%20Smart%20Agriculture_FS_EN_2018.pdf

[23] FAO. 2017. Climate Smart Agriculture Guideline for the United Republic of Tanzania: A country-driven response to climate change, food and nutrition insecurity. http://www.fao.org/3/i7157e/i7157e.pdf

desalination technique which is very expensive, energy dependent and hence unfriendly to the environment. There are already some tourist hotels that apply desalination technique in Zanzibar[24].

The most appropriate and least cost options for seawall protection, dikes as well as water harvesting structures will be selected. As for dikes, it is currently proposed to use earth-dikes to reduce the construction cost and enable more farmers to reclaim their land which is currently inundated by seawater. In-kind contribution by beneficiary communities will be factored in to increase the level of ownership, demonstrate high level of cost effectiveness and value for money.

The restoration of mangroves is more cost effective than the traditional method of tree planting only; because it adopts ecosystem-based solutions to manage and restore natural and modified ecosystems to provide both human well-being and biodiversity benefits[25]. The mangroves are enabled to regenerate naturally by creating the conducive environment (micro climate) notably hydrology and soil conditions. Direct tree planting is done to complement natural regeneration and normally is done as enrichment planting or in areas where natural regeneration has failed. Successful mangrove restoration requires among others, good knowledge of type of mangrove species to be planted and its site requirements. To increase the chance of success and effectiveness, experts from the Forestry and Fisheries Departments and Institute of Marine Science will be used to identify the best species that can survive in the area.

Based on the preliminary assessment and initial consultation with some community members and interviews with women of different age groups in in all five project sites, livelihood activities to be supported by the project were selected (this will require further consultation during the preparation of a full proposal). Support to these activities means the project will be investing the AF resources in livelihoods with high economic returns thus enhancing not only the livelihoods and wellbeing of the people of Zanzibar but also their resilience to climate change impacts.

This project will be implemented through the government ministries and local authorities such as the Department of Environment (DOE) in the Second Vice President`s Office, Zanzibar Environmental Management Authority (ZEMA) and the Ministry of Agriculture, Natural Resources, Livestock and Fisheries (MANRLF). Therefore, operationally there will be no need for a new office and new staff. Furthermore, pensions and insurance will be paid by the executing agencies as these costs are already covered by the employer and can be accounted for as co-financing by the government. The operational costs will also be reduced through the involvement of the local government authorities where the interventions will be implemented to support in some aspects of the project including monitoring and evaluation.

[24] Yu, R. and Packard, D. 2012. Assessing the Viability of Desalination for Rural Water Supply in Chwaka, Zanzibar. Independent Study Project (ISP) Collection. 1471. https://digitalcollections.sit.edu/isp_collection/147

[25] IUCN. 2021. Nature based solutions. https://www.iucn.org/theme/nature-based-solutions/about. Downloaded in 2021.

Table 3. Project costs and benefits

Project Component	Project Cost (USD)	Concrete adaption benefits	Avoided losses	Trade-offs
1.Support to water supply infrastructures for domestic use and irrigation	970,000	• Increased food availability due to improved agricultural practices • Water availability for domestic use, crop and livestock production • Reduced time spent by women and children in fetching water • Increased household income • Increased knowledge on water resources management • Increased resilience to climate change impacts	• Crop and livestock loss due to drought and flooding • Food insecurity • Malnutrition • Loss of time to fetch water	• Supply of water by other means such as boreholes or piped water from other distant sources which increases cost to the government • Dependence on food aid because households cannot produce sufficient food for families • Time spent for school work and other household duties at the expense of time spent to fetch water by schoolchildren
2.Restoration of saltwater affected farmlands and degraded coastline	1,400,000	• Increased soil fertility • Increased water resources management • Restored ecosystem functions • Increased crop productivity • Minimized impacts of sea-level rise	• Soil erosion • Beach erosion • Loss of life and property due to floods • Degradation of water resources • Low agricultural productivity • Food insecurity	• Increased government spending to provide support to persons affected by extreme weather events • Reduced productivity due to loss of suitable land for crop production • Loss of vegetation cover • Loss of biodiversity
3.Conservation and Climate Smart Livelihood activities	300,000	• Enhanced resilience to climate change impacts • Increased household income • Reduced income poverty • Improved management of marine ecosystems • Improved nutrition within the household	• Abject poverty • Degradation of marine and coastal resources • Food insecurity • Malnutrition • Health problems	• Unsustainable use of marine and coastal resources • Loss of biodiversity • Increased vulnerability to climate change impacts • High adaptation cost – the government will have to increase spending by providing food and other social services to the vulnerable and incapacitated communities

4. Institutional capacity building of local government authorities and communities in planning and implementation of climate change adaption actions and dissemination of project results and lessons learnt	296,000	• Increased capacity of local government authorities and communities to plan and implement climate change adaption interventions • Increased coordination of climate actions at local level • Increased resilience to climate change impacts • Increased capacity to communicate project outcomes and key lessons learnt	• Inability to foresee climate impacts • Increased vulnerability to climate change impacts • Loss of livelihoods • Food insecurity • Abject poverty	• Increased victims of climate impact impacts due to poor planning and unpreparedness of local government authorities • Increased adaption cost • Unsustainable climate change adaption interventions

D: Describe how the project 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 consistent with both national and international strategies and plans. It is consistent with plans of the Revolutionary Government of Zanzibar including Zanzibar Development Vision 2020 (2000/2020), Zanzibar Strategy for Growth and Reduction of Poverty III (2016/2020), Zanzibar Climate Change Strategy (2014), Agriculture Sector Review (2015), National program under the Tanzania Social Action Fund (TASAF), Environmental Policy (2013), African Union Agenda (2063), East Africa Community Climate Change Policy (2011), Sustainable Development Goals (SDGs) 2030, National Adaptation Programme of Action (NAPA), 2007, National Climate Response Strategy (2021) and Tanzania Nationally Determined Contributions (NDC) 2021.

Zanzibar Development Vision 2020: Zanzibar Development Vision 2020 is the basic tool towards development of Zanzibar. The Vision 2020 provides direction on various issues including Climate change and Sustainable Management of environment by encouraging renewable energy resources, conservation and protection of the environment and sustainable utilization of natural resources. The strategy direction for Zanzibar Vision 2020 emphasizes on promotion of sustainable tourism, fishing and industrial sector, strengthen trade sector, promotes human resource development, encourages information and information technology, encourage environmental protection and the promotion of good governance, capacity building and peace and stability.

Zanzibar Strategy for Growth and Reduction of Poverty III, 2016-2020: The Zanzibar Strategy for Growth and Reduction of Poverty III comes up with key results areas to ensure that the strategy is focused, prioritized and results-based (i) Enabling Sustainable and Inclusive Growth (ii) Promoting Human Capital Development (iii) Providing quality services for all (iv) Environmental Sustainability and Climate Resilience (v) Adhering to Good Governance Principles.

Zanzibar Climate Change Strategy, 2014: The Strategy aims to provide a national response framework for addressing the impacts of climate change and ensure commitment and engagement of all stakeholders in addressing the impacts. The Strategy provides guidance to mainstreaming of climate change adaptation, strengthen institutional coordination arrangements and encourage the adoption, transfer and diffusion of technologies that enhance low carbon pathway towards sustainable economy.

Zanzibar Environmental Policy, 2013: The overall objective of Zanzibar Environmental Policy (ZEP) is to pave the way for the protection, conservation, restoration and management of Zanzibar's environmental resources, such that their capacity to sustain development and maintain the rich environmental endowment for the present and future generations is not impaired.

***Zanzibar Climate Change Action Plan, 2016-2021*:** The aim of the Action Plan is to identify the specific implementation activities to deliver the Strategy, setting out the priority options for adaptation and low carbon development, and providing a costed, climate-finance ready pipeline of projects and programmes. The ZCCAP has been aligned with the objectives of Vision 2020, MKUZA-II and other development strategies that aim to eradicate poverty and improve the livelihoods of people by enhancing capacity to address climate change in the strategies.
The ZCCAP assessed priority risks and opportunities for Zanzibar in order to identify and prioritize adaptation and low carbon options, especially those that can be considered for climate finance. Zanzibar is also implementing a

Local Adaptation Programme of Action initiative which focuses on community-based approaches and local development planning and complements the ZCCAP. Among the Fast-Track options include interventions that focus on resilient coastal and marine areas and ecosystem services, climate-smart agriculture and natural resource management and sustainable forests and energy. All these interventions have been embedded in the proposed activities identified in this proposal.

National Adaptation Programme of Action (NAPA), 2007: The overall vision of Tanzania's NAPA is to identify immediate and urgent Climate Change Adaptation Actions that are robust enough to lead to long-term sustainable development in a changing climate. It will also identify climate change adaptation activities that most effectively reduce the risks that a changing climate poses to sustainable development.

Tanzania Nationally Determined Contributions (NDC), 2021: Tanzania Nationally Determined Contributions (NDC) as commitment in respect to the global response to the threat of climate change. The priority sectors for both adaptation and mitigation have been identified and mitigation targets have been set that are likely to support low emission development pathway and economic growth while contributing to reduction of greenhouse gases.

Second National Communication (SNC) to the UNFCCC, 2014: The SNC provides an update of quantitative assessment of greenhouse gas emissions from major sectors and activities, and developed climate change scenarios on the potential impacts of the projected changes, using 2000 as the base year.

National Climate Change Response Strategy (NCCRS), 2021-2026: The NCCRS is an updated National Climate Change Strategy (NCCS, 2012) that has taken on board new developments and reviewed progress with the objective of enhancing the country's resilience to the adverse impacts of climate change that will facilitate the pursuance of low emission development pathways so as to achieve sustainable development. It provides a way to align climate change interventions with the national development agenda of industrialized economy.

National Environmental Action Plan (NEAP), 2013-2018: NEAP developed to support the country towards meeting key international environmental obligations, which include conventions related to Biodiversity and Forests, Climate Change, Sustainable Land Management; Environmental Pollution, Hazardous Waste and Chemicals Management; Sustainable Oceans, Coastal Zones, and protection of Coral Reefs.

EAC Climate Change Policy, 2011: The purpose of the Policy is to guide EAC Partner States and other stakeholders on the implementation of collective measures to address climate change impacts and causes in the region through adaptation and mitigation measures while sustaining social and economic development. The adaptation objective for EAC Climate Change Policy is to institute and implement measures which will improve the adaptive capacity and resilience of the East African region to the negative impacts of climate change.

Sustainable Development Goals (SDGs): The proposed project will tackle the issues directly related to the SDGs such as Goal 1. End poverty in all its forms everywhere, Goal 2. End hunger achieve food security and improved nutrition and promote sustainable agriculture, Goal 6. Ensure availability and sustainable management of water and sanitation for all, Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all, Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable, Goal 13. Take urgent action to combat climate change and its impacts, Goal 14, Conserve and sustainably use the oceans, seas and marine resources for sustainable development and Goal 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

E. Describe how the project 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*

The proposed project is aligned with relevant national technical standards and meets requirements stipulated by Environmental Management Act (Cap.191 of 2004) and Environmental Impact Assessment (EIA) and Environmental Audit (EA) Regulations (GN 474, revised 2018). The project is also in line with the Zanzibar Environmental Management Act, 2015 (Act No.3 of 2015) and Zanzibar National Forest Resources Management Plan (2010 – 2020). Other important and relevant national standards (both for Tanzania and Zanzibar) related to rural water supply, agriculture, forestry, aquaculture, fisheries, environment, tree planting, coastal management, food security and land use planning will be considered during further steps of project design and during implementation. In so doing the project will comply and contribute to national policies, plans, strategies and programs designed by both the United Republic of Tanzania and the Revolutionary Government of Zanzibar. Furthermore, this project is relevant to the Environmental and Social Safeguard policy of the Adaptation Fund (AF). The project design has adhered to the "free, prior and informed consent" principle by working with local communities at each stage of the project design. This will also be adhered to during the development of full proposal.

The construction of water reservoirs on some sites means this project will require a full Environmental and Social Impact Assessment (ESIA) as per the required EIA and Audit Regulations.

F. Describe if there is duplication of project with other funding sources, if any.

The proposed project and its interventions will avoid any duplication of actions and funding sources. During conceptualization and designing of this project, consultations were made with North A, North B, Wete and Kangani district councils and relevant sector ministries whereby it was clear that no similar interventions exist in such districts and Shehias. This will further be confirmed during the development of the full project proposal where a more detailed stakeholder consultation will be conducted. The site Kiongwe was selected in this project as a follow up village to continue with the construction of the dike as a continuation of the previous project under the Adaptation Fund.

This ensured that no duplication of project or funding sources is done. However, there are some projects in other sites of Zanzibar which are implementing some activities related to climate resilience and adaptation to climate change. The table below shows some of related projects for climate change adaptation conducted in Zanzibar. Lessons learnt from these other projects will be reflected during the preparation of a full proposal, especially on the aspect of implementation of climate smart activities, capacity building, identifying gaps and challenges encountered during the implementation of the interventions as well as carrying out study visits in areas where communities have implemented the actions successfully. All these will help to provide a better focus on the proposed activities to make them more realistic and implementable.

Table 4: Climate change related projects/programs in Zanzibar

Project/Program and status	Objectives	Synergy with the proposed project
Enhancing climate change resilience in Zanzibar (August 2018- December, 2021) - ongoing	Institutional support to the Revolutionary Government of Zanzibar in developing climate strategy and adaption action plan. The project was implemented by UNDP.	**No duplication**. The proposed project does not target decision makers but rather communities vulnerable to climate chocks. As such the proposed project seeks to implement concrete adaption actions that will tangibly transform livelihoods.
Economics of Climate Change in Zanzibar with funding from UKAID (2012) - completed	To quantify the economic impact of climate change to Zanzibar.	**No duplication.** This was purely a research project/program. However, the proposed project focuses on concrete adaption interventions.
Decentralized Climate Finance Project (April 2016-May 2017)	The project aimed to strengthen capacity of key actors that shape the decentralized climate finance landscape and to support cost-effective economically productive local adaptation.	**No duplication**. This was a pilot project.
Developing core capacity to address adaptation to climate change in productive coastal zones of Tanzania (July 2014- June 2015) - completed	Capacity building in climate change adaptation. Was implemented by UN Environment with funding from GEF, Least Developed Countries Fund (LDCF).	**No duplication**. The project constructed sea walls in Kisiwa Panza ward, Mkoani District in Pemba (75 m) and Kilimani ward, Kaskazini District, Unguja (5 groynes), supported planting more 231.5 ha of mangroves and 10 ha of coastal vegetation in Ukele, Tovuni, Tumbe and Kisiwa Panza in Pemba and Kilimani and Kisakasaka, in Unguja. It is can be seen that none of the sites covered by the LDCF project are not included in the proposed project with exception of Tovuni in which the project will augment to mangrove restoration efforts The proposed project will build on the mangrove restoration initiatives in Tovuni-Pemba whereby it plans to restore 5 ha. Thus, this project will not duplicate what was done in Tovuni but rather augment what was done already.

Project/Program and status	Objectives	Synergy with the proposed project
Action for Strengthening Civil Society Organizations on Climate Change Governance and Accountability in Zanzibar. (December 2017 – January 2018)	The project is being implemented by Zanzibar Climate Change Alliance (ZACCA) and involves both Unguja and Pemba. Its main objective is capacity building through community radio programmes and Training of Trainers.	**No duplication.** The project sites include Donge, Jozani, and Kitogani in Unguja and Mgelema in Pemba. The project interventions include restoration and planting mangroves, cookstoves, beekeeping, and climate-smart agriculture. While the project interventions are similar to what is proposed in this proposal, none of the sites targeted by ZACCA are included in the proposed project. Thus, the proposed project will not duplicate what has already been done in the project site. It will support new interventions in the shehias of Makoba, Mafufuni, Kiongwe Kidogo and Tovuni whereby none has attempted to curb the sea water inundation in such areas. For example, in Mafufuni, to date about 30 ha of rice farms have been flooded with sea water and no solution exist.
Enhancing Climate Change Resilience of Coastal Communities of Zanzibar (Approved 6/01/2020)	The project's objective is to build capacity of smallholder farmers to address climate change impacts through practical and innovative solutions that have tangible outputs.	**No duplication.** Taking note of the nature of activities and size of the islands, most of the activities may look similar but conducted in different localities within the islands and using different groups to actively participate in climate resilience practices. Selected sites have already been identified and the new projects has selected new areas for implementation of project activities. The site Kiongwe which has been included in this project will involve an extension of the dike (a new area), whereas new participants will be selected to participate in capacity building and entrepreneurship skills activities.

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

This project has been designed based on the lessons learned from other similar projects and adaptation needs arising from stakeholders. The project's learning and knowledge component is captured under Components **1** (1.1.4, 1.2.4), **2** (2.1.4), **3** and **4** (all activities). Components 1 to 3 focus on developing entrepreneurship skills or expertise to group members for individual project activities, whereas Component 4 activities will enhance the capacity of key implementing sectors and communities to adopt climate smart practices, manage adaptation assets as well as disseminate the good practices that have been successful in their areas. The project will organize and conduct study visits within the project sites (Unguja and Pemba) and sites outside the project areas but with similar challenges to help farmers learn and share experience. Communities will actively participate in project activities by learning and practicing climate change adaption technologies and practices.

Project results and lessons learnt will further be disseminated at national and international levels through conferences, symposia, meetings, workshops and various peer reviewed journals. Successes and challenges will also be

disseminated through radio programs, TV, newspapers, YouTube, Facebook and video documentaries. Furthermore, learning and knowledge management will be an integral part of the M& E framework- Therefore, the M&E officer will be required to collect, document and facilitate the dissemination of all the project results and lessons learnt.

The need to build ownership for sustainability through active involvement of key stakeholders must be met by ensuring that key stakeholders including local communities and traditional authorities are fully informed and involved in decision making, understand and support adaptation objectives along with community responsibilities and benefits. In addition, building human and technical capacity in key institutions to implement resilience measures are also important to project sustainability.

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.

At the concept note stage, key institutions were involved in the planning process and initial design. Site selection was based on the areas prioritized in the Atlas as areas with high level of vulnerability and immediate measures are required to address them. Individual sites were visited and consultation with Shehas (village leaders) and a few community members was carried out for a quick appraisal of the key issues, to gather views as to whether the project will be accepted and the willingness of community members to participate during the implementation of activities. Possible sites where reservoirs will be constructed have also been identified, pending further approval by the Engineering team. Upon approval of the concept note, a more detailed consultation will be carried out, starting with the key sectors and then followed by an appraisal in all sites to get a deeper understanding of issues and agree on the priority activities to be undertaken by the project (the current activities are based on consultation with only a few community members and visual observations during the visits).

Based on the AF requirements, an Environmental and Social Impact Assessment will be conducted in line with the requirements of ZEMA and AF's Environmental and Social Policy.

Categories of Stakeholders consulted

a) Sectoral level Stakeholders (MDAs):

The following stakeholders will be consulted during the preparation of a detailed proposal:

SVPO – DoE (Unguja and Pemba), Ministry of Finance and Planning, Planning Commission, Ministry of Land, House, Water, and Energy (MLHWE) Planning Commission, Zanzibar Environmental Management Authority (ZEMA), Department of Irrigation, Department of Agriculture, Department of Fisheries, Department of Forestry and Non-Renewable Natural Resources (DFNR), Zanzibar Water Authority (ZAWA), Head of Ministry of Agriculture, Natural Resources, Livestock and Fisheries, Pemba.

b) LGAs Level Stakeholders:

Unguja: Urban District, North A and North B District Councils

Pemba: Wete District, Mkoani District

c) Community, Famers Associations and NGOs Level Stakeholders:

Any Association that addressed climate change issues in the selected districts.

Table 5. Stakeholder involvement in the implementation of project activities

Potential Stakeholders	Description of the Roles
Local Government Authorities (Wete and Mkoani Councils, North A and North B District Councils, Urban Municipality)	Project activities will be executed in the rural areas of the District authorities where key actors within the District Councils have direct role of managing project activities. These include district officers (forestry, land, environment, community development, fisheries) and extension officers. The authorities have a role to mobilize community to participate in the project activities, monitor project progress, support community natural resources management program including approval of bylaws for safeguarding water resources.
Sectoral government	All sector Ministries and their Departments relevant to this project are key and the project will be keen to ensure they are widely consulted. Sectors such as Agriculture, Forestry, Environment, Fisheries, Water and Lands are relevant to this project and their inputs are necessary during project implementation at both PMU and Steering Committee levels.
Farmer groups/cooperatives	These are stakeholders that are part of the farmers but established to oversee and advocates farmer's rights in agriculture sector including managing rice fields, water utilization and follow up of access to farming inputs. In this project they will be used to mobilize farmers to actively engage in project activities. They will also receive training on how best to manage community groups, manage irrigation structures and enforcing the bylaws to realize positive projects outputs and outcomes. Members of the famer's associations are democratically elected, and they are about twenty with leadership structure.
Non-government organizations	These are specialized group of stakeholders that will be engaged by the project to raise community awareness on climate change issues, climate smart agriculture and water resource management. They will work under the guidance of project team and district authority and in close consultation with farmers associations.
Farmers	These are grass root project beneficiaries that will be mobilized through their local institutions to participate in project implementation including climate smart agriculture practices, trainings and awareness raising sessions, water sources protection and community meetings. Farmers are key stakeholders that will be used to provide feedback and lesson learned from project activities as they will practice the interventions on the ground.
Technical based (IMS, SUA)	For technical advice on the proposed research and aquaculture related projects.

Figure 5. Initial consultation with stakeholders at Kizingo (Urban district)

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

Funds requested from the Adaptation Fund will be used to support capacity building of coastal communities in Unguja and Pemba to adapt to the impacts of climate change through implementation of practical interventions to produce tangible and sustainable impacts. Communities in North A and B, Urban, Wete and Mkoani districts will continue to be negatively affected from the impacts and fail to meet the livelihood needs. A more justification for funding can be evaluated by analyzing the project and without project scenarios as described below:

Component 1: Support to water supply infrastructures for domestic use and irrigation (US $970,000)

With the current practice (no AF scenario), communities will have no capacity to address the challenge of inadequate sustainable water supply for irrigation farming and domestic use in the project area. This means that communities will continue to depend on rainfed agriculture which may or may not result to harvesting reasonable crop yields since rains are not reliable. Most of the households will face shortage of food and poor household income thus leading to food insecurity and abject poverty. The most affected groups will be women and children, especially female headed households that solely depend on farming for their livelihoods. Women, in particular, are highly impacted compared to men due to their increased workload of fetching water and farming activities for the household. As for schoolchildren, shortage of water in school will result in poor hygiene that will most affect girls as they will be forced to fetch water for use in school which means misuse of the precious time that could be utilized for studying.

AF funding to construct water infrastructures will enable water availability throughout for both farmers and livestock keepers. Moreover, the construction of water reservoirs for rainwater harvesting will not only reduce flood risks and

supply water for irrigation systems but also enable water supply for domestic use. By funding rainwater harvesting structures the AF will have enabled Zanzibar to achieve Sustainable Development Goal 6 (Ensure availability and sustainable management of water and sanitation for all).

Component 2: Restoration of saltwater affected farm lands and degraded coastline (US $1,400,000)

Without AF funding, there will be more degradation of soil in farmlands due to saltwater intrusion, thus having less arable land that can be utilized for crop production and causing increased food insecurity. Continued clearance of mangroves will cause further degradation of marine resources, loss of ecological balance and loss of ability to sequester Carbon. Furthermore, there will be no buffer zone created by mangroves, thus allowing beach erosion to occur at a faster rate than normal. Therefore, without AF funding to support the restoration of mangroves, woodlots for fuelwood and construction of dikes to prevent saltwater inundation, communities will continue to suffer from the effects of climate change given the fact that RGZ has a significantly high adaptation deficit. Furthermore, without the construction of protection seawall means beach erosion will continue which will result in the loss of valuable land in the Urban district. The beach erodes because supply of sand to the beach cannot keep up with the loss of sand to the sea, which is currently removed by some unauthorized persons, thus disturbing the ecology of the area. The area will also be prone to floods, which will result in loss of some settlements near the beach. As depicted in Figure 4, if no action is taken immediately, that means even a few existing trees that currently offer some level of protection will disappear.

With the AF funding, the project intends to halt the progress of saltwater inundation by promoting climate smart agricultural practices and promoting use of saltwater tolerant varieties on degraded land, restoration of mangrove vegetation, construction of protection wall at Kizingo (Urban district) and dikes in selected sites. By funding mangrove restoration, tree planting activities and construction of dikes and seawall, the AF will enable communities to cope with sea water inundation in their farmlands thus being able to resume with farming activities. This is envisaged to not only boost crop yield but also increased groundwater recharge through increased infiltration in the soil. The availability of AF will facilitate the establishment of Water Users Associations which will play very important role in protection of river catchment areas.

Component 3: Conservation and Climate Smart Livelihood activities (US $ 300,000)

In many parts of Zanzibar islands, the current farming practices are not climate resilient causing farmers to experience very low yields. Without AF funding, communities are more likely to continue suffering from climate change impacts owing to inability to implement climate resilient livelihood activities. Saltwater intrusion has forced farmers to abandon their farms as they can no longer be used for cultivation, hence causing poverty to households, especially those that dependent on agriculture for their livelihoods. The economic cost of losing land which has been previously used for agriculture cannot be compensated if there are no alternative generating activities that can produce equally socio-economic benefits to the affected communities.

With AF funding, farmers affected by saltwater inundation will have capacity to implement alternative and climate resilient livelihoods, the proceeds of which can be used to purchase food. Livelihood diversification will enable communities to have assured income for buying foods and other household needs as well as create employments. Activities such as horticulture production and nursery establishment require some labor inputs; some people will be employed and hence contributing to the economic development of the country. The activities to be implemented will complement other climate adaptation initiatives by the government of Zanzibar in the framework of Zanzibar Strategy

for Growth and Reduction of Poverty III, and Zanzibar Climate Change Strategy 2014. Furthermore, the project will complement to coastal management plan and other conservation initiatives of coastal resources for enhanced resilience to climate change impacts.

Overall, the project is geared to complement the ZRG's poverty reduction efforts, inclusive blue and green economic growth that consider environmental standards and climate resilience measures.

Component 4: Institutional capacity building of local government authorities and communities in planning, implementation of climate change adaptation actions and dissemination of project results and lessons learnt (US 296,000)

Without the AF funding, communities in the target districts have limited capacity to effectively implement climate change adaptation interventions. It is likely that the pace to incorporate climate adaptation related issues into district development plans and implementing adaptation actions on will be slow and may in some instances be impossible. Without AF resources climate change vulnerable communities in Urban, North A, North B, Mkoani and Wete districts are more likely to continue being food insecure and in abject poverty.

With AF funding the districts will be able to facilitate the implementation of adaptation actions with a possibility to scale up the interventions in other sites found in their respective districts. Furthermore, the districts will be able to integrate adaptation costs in district planning and financing mechanisms.

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

Sustainability aspect was taken into consideration by involving key stakeholders from the design stage. This is demonstrated by involving Urban, North A, North B, Wete and Mkoani district councils which have legal mandate to oversee development activities in the project sites. Roles and responsibilities of each stakeholder will be clearly demonstrated in the implementation plan in the detailed project proposal. Maintenance of all infrastructures that will be developed will be done by appointed community members in each Shehia, whose capacity will be built by skilled officers from the Sectors. Moreover, the project will build the capacity of Shehia level institutions in managing the infrastructures to be developed. Farmers and livestock keepers will be trained on how to implement various climate smart technologies which can be sustained beyond the project period. Implementation of activities will involve a fair presentation of gender and youth in the formed committees.

A Monitoring and Evaluation (M & E) framework will be prepared to track progress of project activities and facilitate decision making as to whether the proposed interventions have the intended results, whether progress goes according to plan and identifying areas for action and improvement. The project will be evaluated as mid-term and end of term to ensure that interventions will have intended impacts. An exit strategy will be prepared to ensure that investments made by the project are sustained beyond the project period.

In terms of political and policy sustainability of the project, there is a very good political will from local and national political leaders such as Shehas and members of Representative Council of Zanzibar. Relevant policies in Zanzibar support all project components. Thus, the project has full support at all levels. Therefore, the district and Shehia extension officers will provide technical assistance to the communities even after project termination. Following project termination some project activities will be mainstreamed in the district's Medium Term Expenditure Framework. This will be particularly possible because the district and Shehia officers will have gained sufficient capacity to be able to transfer knowledge and skills to other community members.

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

The proposed interventions in the project proposal include: construction of water harvesting structures, dikes, protection wall, mangrove restoration, improvement of agricultural and livestock practices and tree planting. Any project with activities that involve construction is grouped as **Category A,** which hence requires a full Environmental and Social Impact Assessment. This is in accordance with the existing regulatory framework in Zanzibar and Tanzania mainland. Identification and analysis of potential risks that would emanate from the implementation of project activities will be carried out in detail to ensure that proper mitigation measures are in place for the observed negative impacts, and an Environmental and Social Management Plan (ESMP) prepared, in accordance with the requirements of Environmental and Social Standards for ZEMA, NEMC and the AF.

a) **Compliance with the Law**

The Zanzibar Environmental Management Act, 2015 requires that prior to the implementation of development projects that will involve activities such as those related to construction of reservoirs must have a detailed Environmental and Social Impact assessment (ESIA). ESIA will set out environmental and social guidelines to be followed to minimize the impacts that will be encountered for all activities during implementation of this Project. The ESIA will also have an Environmental and Social Management Plan in place as a guide to mitigation and monitoring of the foreseen impacts. This is also in line with the Environmental Management Act (EMA, 2004) and EIA and Audit Regulations (2005, revised 2018) and the requirements of the AF.

b) **Access and Equity**

The project is set for the requirement of individuals living in Zanzibar, their presence and their need is the key factor towards this project. Participatory methods will be used to maximize participation of project beneficiaries, and selection of members for the management of project will be done by selecting members from each group/ethnic area. Every person will be free to access the project provided he/she follows the set guidelines during its implementation.

c) **Marginalized and Vulnerable Groups**

All development projects are safeguarded with National and local set rules in which vulnerable groups are protected by law. The Zanzibar Development Vision, 2020 enhances opportunities for and protection of vulnerable and disadvantaged groups as orphans, the physically and mentally disabled, old people with no relatives or other means of support. The Vision also extends opportunities to vulnerable and disadvantaged groups by assisting individuals or disabled groups to cope with disability, advocates participatory roles for private enterprises, people's organizations and communities in collaboration with the private sector, in skills development and promotion of quality of life of people with disabilities and other disadvantaged groups. The project will ensure that vulnerable groups are properly integrated and provided with equal opportunities during its implementation.

d) **Sustainable Development Goals (SDGs)**

All proposed activities aim to contribute towards the achievement of SDGs, with specific focus on Goals 1, 2, 3, 5, **6**, 10 and 13. The project will ensure that it adheres to the stated goals and contribute towards the envisioned sustainable development agenda.

e) **Gender Equity and Women's Empowerment**

The Zanzibar Development Vision, 2020 caters for the development of social environment conducive for peace harmony, protection and development for all; ensures empowerment of people of both gender and all ages to fully participate in the development process. The proposed project will ensure that it complies with the stated requirements at all stages of its development, to remove gender bias in access to resource, participation in decision making and ownership of property, to enhance equal access to education and employment at all levels and improve the position of women in society.

f) **Human Rights**

The Constitution of Zanzibar has stipulated requirements of ensuring that all human rights are preserved and protected and that the duties of every person are faithfully discharged, and requires all government organs and servants to adhere to the international treaties on human rights and good governance. In this regard the proposed project will comply with what has been stipulated in the constitution.

g) **Core Labor Rights**

The aim is to promote sound worker-management relationships and enhance the development benefits of a project. During the implementation of this project, all workforce will be sourced within the islands of Zanzibar. Different risks may arise like accidents, which will be managed by implementing safety standards at workplace, in compliance with the existing Labour laws and regulations. These include use of personal protective equipment (PPE), inducting and training workforce on safety procedures and comprehensive risk assessment at field level. The company/individual who will be involved in the implementation of project must be a member of Workers Compensation fund (WCF). The safeguard is in place to ensure that workers are treated fairly, in a non-discriminate manner and provided safe and healthy conditions.

h) **Indigenous Peoples**

Communities within the selected project sites are culturally homogeneous and speak one language which is Kiswahili, which makes it easier to communicate any messages that relate to the implementation of project activities.

i) **Involuntary Resettlement**

Implementation of project activities does not require resettlement. On sites where water reservoirs will be constructed this will be public land that will be utilized after consultation and agreement by the whole beneficiary communities.

j) **Protection of Natural Habitats**

This project aims at Promoting soil and water conservation techniques for improved water protection and crop productivity. In particular, the degradation of mangrove vegetation through charcoal making, salt pans and building poles business is a key factor contributing to the current problem of sea water inundation in most of farmlands. Most of areas in the selected project sites have been cleared of mangrove forests and are now exposed to sea water inundation. This project intends to progress soil and water conservation innovations that will ensure restoration of mangrove vegetation, degraded land and improve the protection of river catchments. By promoting soil and water conservation interventions will enhance soil fertility, soil structure and soil moisture which is critical for plant growth.

k) **Conservation of Biological Diversity**

This safeguard measure aims to avoid or minimize adverse impacts on biodiversity and habitats and carry out restoration where necessary. In areas where such a threat has been identified in the ESIA report, a risk assessment and its impacts will be conducted to determine its severity and device proper mitigation measures. Initial consultations and observations of the proposed sites have not indicated the presence of any species of significant biodiversity status so far. However, implementation of project activities will ensure minimum disturbance, especially on areas that are not required to be altered.

l) **Climate Change**

The proposed activities have ensured that proper measures are taken that enhance resilience to climate change, reduce/remove greenhouse gases and enhance food security and improvement of livelihoods. All implemented activities constitute concrete adaptation actions and enhancement of nature-based solutions, identified and prioritized in the ZCCS, ZCCAP and the Nationally Determined Contributions.

m) **Pollution Prevention and Resource Efficiency**

During project implementation there is a chance of environmental pollution to occur and there will be waste generation, Proper preventive maintenance for all machines and vehicles to be used in project activities will be will be carried out. Wastes produced will be managed in line with best environmental and health requirements with emphasize on reuse or recycle. The proposed project works are expected to generate Solid, Liquid and Gaseous. All measures aim to avoid project related emissions of climate pollutants and generation of hazardous and non-hazardous waste and manage risks and impacts associated with pesticide uses where applicable. Where applicable, the project will promote the recycle of waste material.

n) **Public health and safety**

This safeguard addresses safety and security risks and impacts of the project on the health and safety of affected communities and their proposed mitigation measures. For projects like those related to infrastructure development, measures must be put in place to minimize community exposure to project related traffic and road safety risks, diseases and contact with hazardous materials. There will be hazards from project activities such as dust emission, noise and vibration from machines, which can be managed by provision of personal protective equipment like masks, ear plugs and gloves for workers involved in the project.

Where a proposed project has the potential to generate emergency events such as explosion, fire, leaks or spills, a Risk Hazard Assessment (RHA) will be conducted. If necessary, an Emergency Response Plan (ERP) will be designed to address un-anticipated events that may arise from both natural and man-made hazards. The ERP will take into account the emergency prevention, preparedness and response arrangements that are in place. The proposed construction activities will not require the preparation of ERP. However, some level of social interaction between the project workforce and local community members, which may increase the chance of contracting HIV/AIDS, or in recent cases, COVID19 infections. Induction and awareness programs for project workers shall be prepared.

o) **Physical and Cultural Heritage**

This safeguard aims to protect cultural heritage from the adverse impacts of project activities, identified as an integral part of sustainable development and promotes equitable sharing of benefits from their use. Where the project will involve having impacts on tangible and intangible cultural heritage, and where avoidance is not possible, measures will be taken to implement globally recognized practices and prepare a Cultural Heritage Management Plan, where

detailed mitigation measures will be prepared. However, initial assessment have indicated that activities identified in this proposal will not be implemented in sites of cultural importance to communities.

p) **Lands and Soil Conservation**

This project intends to progress soil and water conservation innovations that will ensure restoration of mangrove vegetation, degraded land and improve the protection of river catchments. The proposed soil conservation activities will positively contribute to adaptation and mitigation of climate change impacts.
Table 6 provides a summary of the projected risks and proposed measures to address the risks.

Table 6. Compliance requirements for the proposed risks and measures to address the risks.

Environmental and Social Principle	**Compliance requirements**	**Risk and potential impacts**	**Details of potential risks**	**Measures to address risk**
Compliance with the Law	x	Risk: Low Potential impact: High	Possible workplace accidents during construction	The full proposal will be compliant with all relevant existing national laws and regulations
Access and Equity	x	Risk: Low Potential impact: Low	Not expected	The project will ensure equitable access to project benefits by all community members
Marginalized and Vulnerable groups	x	Risk: Low Potential impact: Moderate/High	Failure to address the needs of vulnerable and marginalized groups will deny them access to some project benefits	Although during concept note development marginalized and vulnerable groups were consulted, more intensive consultations will be done during full proposal development
Human Rights	x	Risk: Low Potential impact: Moderate/High	Not envisaged	The project will adhere to national and international human rights standards, policies, rules and regulations
Gender Equity and Women's Empowerment	x	Risk: Moderate Potential impact: Moderate/High	If the needs of men and women are not equally addressed the project may experience difficulties during implementation	Gender will be mainstreamed in all project components
Core Labour Rights	x	Risk: Low Potential impact: High	- Possible workplace hazards and accidents - Possible child labor	The project will adhere to core labour rights during implementation
Indigenous Peoples	No observed risks	Risk: Low Potential impact: Low	Not anticipated	No differentiation in ethnicity observed in the islands or in project sites
Involuntary Resettlement	No observed risks	Risk: Low Potential impact: Low	Not anticipated	No involuntary resettlement is expected to take place
Protection of Natural Habitats	x	Risk: Low Potential impact: High	Destruction of natural habitats not anticipated	Project activities aim to promote conservation and restoration of natural habitats
Conservation of Biological Diversity	x	Risk: Low Potential impact: High	Loss of biodiversity not anticipated	- Constructed water harvesting structures will not be done in ecologically sensitive areas.

Environmental and Social Principle	Compliance requirements	Risk and potential impacts	Details of potential risks	Measures to address risk
				- Project activities related to restoration of ecological balance aim to enhance biodiversity conservation - Use indigenous species for mangrove restoration and planting of trees
Climate Change	x	Risk: Low Potential impact: High	Not anticipated	The project will contribute to climate change adaptation measures. No GHG emissions anticipated
Pollution Prevention and Resource Efficiency	x	Risk: Low Potential impact: High	Possible solid waste generation during construction	Adhere to established national and international pollution standards
Public Health	x	Risk: Low Potential impact: High	- Possible emergence of respiratory diseases (COVID19)	The project design will ensure that public health is not adversely affected
Physical and Cultural Heritage	No observed risks	Risk: Low Potential impact: Low	Not anticipated	Baseline study will be conducted to identify the presence of physical and cultural heritage sites (for example: graveyard site). If the site is found to be of cultural importance a new location will be selected
Lands and Soil Conservation	x	Risk: Low Potential impact: Moderate/High	Not anticipated	The project will promote conservation of soil and land resources

Grievance Management

The executing entity will work towards ensuring that the project direct and indirect beneficiaries are served to the required standards. The PMU will work to ensure that expectations of the communities are met. Therefore, any grievance from the communities will be resolved using the existing governance structures. The grievance management mechanism is designed with the objective of solving disputes at the earliest possible time, which will be in the interest of all parties concerned and therefore, it implicitly discourages referring such matters to the national level government authorities or national level courts for resolution.

A Grievance Committee will be established at the shehia and District levels for dealing with any grievances as they arise. At Shehia level, the Committee will include the Sheha, Shehia Coordinator, Environmental Officer, Land Officer and Community Development Officer/Social Welfare Officer. At District level, the Committee will include District Administrative Executive Secretary, Assistant Director of District Council responsible for Agriculture, Natural Resources and Environment. Others include District Land Officer, District fisheries Officer District Legal Officer and other invited members related to the grievance.

The procedure for handling grievances will be as follows:

1) The affected person shall file his/her grievance in writing, to the Shehia. The grievance note should be signed and dated by the aggrieved person. Where the affected person is unable to write, he/she shall obtain assistance to write the note and emboss the letter with his/her thumbprint.

2) The Shehia may resolve those disputes depending on the nature of the complaint and where the mandate lies for the issue concerned. Unresolved issues/disputes beyond their mandate are referred to adjudication to the Shehia Grievance Committee (SGC). The SGC will record all the complaints received, whether and how the Shehia resolved them and which complaints were forwarded to the Shehia Project Focal Person (SPFP).

3) If the aggrieved person does not receive a response or is not satisfied with the outcome within the agreed time, s/he may lodge her grievance to the District Grievance Committee. The District Grievance Committee will then attempt to resolve the problem (through dialogue and negotiation) within 14 days of the complaint being lodged. If no agreement is reached at this stage, then the complaint can be taken through the formal court process, i.e. to the Village Land Council, the Ward Tribunal where relevant, District Tribunal and the High Court (Land Division) at the National level (this is in case the grievance is related to land)

PART III: IMPLEMENTATION ARRANGEMENTS

A. Describe the arrangements for project implementation.

The Designated National Authority (DNA) for UNFCCC and all climate change projects in Tanzania is the Vice President Office. The DNA oversees all actions and interventions related to climate change and communicate to UNFCCC and its associated Boards or Committees. The project will be implemented by the AF-accredited NIE (NEMC) and will be executed by the Revolutionary Government of Zanzibar through the DOE, SVPO which is responsible for overseeing all environmental issues including climate change in Zanzibar. DOE will work closely with MANRLF, ZEMA, ZAWA, Districts of North A, North B and Urban in Unguja and Mkoani and Wete.

The Project Management Unit (PMU) will be comprised of Project Coordinator, Irrigation Engineer, Project Accountant, M & E officer and Project driver, all to be seconded within the government through DOE, ZEMA and MANRLF. The PMU will be guided by the Project Steering Committee (PSC), which will be constituted by members from the relevant ministries and departments, SVPO, MANRLF; Ministry of Finance and Planning; Ministry of Land, House, Water and Energy and local government authorities notably North A, North B, Urban, Mkoani and Wete districts

The project coordinator will be seconded to the project from DOE, SVPO, the Irrigation Engineer from MANRLF, the project accountant and M&E officer from ZEMA, project driver from DOE, SVPO and Livelihoods officer from MANRLF. Those seconded to the project will receive a modest monthly allowance for their time spent in the project. Other officers from partner institutions and departments will receive some allowance when they get involved in field activities. The M &E officer, apart from monitoring the project progress he/she will also be responsible for coordinating ESMP activities. He/she will also be responsible for documenting and disseminating the project results and lessons learnt to fulfill the knowledge management aspect as stipulated in component 4.

B. Describe the measures for financial and project risk management

Risk type	Risk Category	Risk Level	Mitigation Measures
Financial risk	Timely disbursement of funds	Low	Fund requests and project progress reports will be timely prepared, communicated and submitted to the Adaptation Fund and other relevant stakeholders to ensure adequate feedback is provided to speed up fund's disbursement. The Project Team will follow required standards and templates as provided by the Adaptation Fund to ensure proper reporting and avoid unnecessary delays
	Financial control risk	Low	Appropriate structures at the ministerial level and local government authorities exist for proper management and control of the public funds. The project will follow these structures and international accounting standards (IAS) and to all Generally Acceptable Accounting Principles (GAAP) to meet all accounting requirements related to reporting, control and transparency and auditing.
Project risk	Project performance	Low	Project Team will be carefully constituted based on skills and capacity to manage project on Climate change intervention as well good monitoring tools to facilitate implementation of this project. Detailed work plans will be developed and be approved by both the Project Steering Committee and NEMC.
	Participation of stakeholders	Low	Participation of stakeholders will consider widely involved from early stages of the project design, implementation, monitoring and evaluation during the entire life of project cycle. Involvement of key stakeholders at community level and inclusion of vulnerable to climate change adaptation communities and groups such as youth, women, local leaders, community beneficiaries, and farmers association as well as responsible ministries will facilitate to mitigating any risks related to stakeholders' involvement.

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

The following proposed projects will be considered as Category A (which require proposed construction of water reservoirs and seawall will likely cause some environmental impacts such as loss of biodiversity due to land clearing, oil spill from the equipment leading to the contamination of soil and dust pollution due to excavation. Moreover, sea dike construction may lead to soil erosion. The population and workers will be sensitized on health risks — and mainly HIV/AIDS and COVID-19 related risks.

Individual project activities will be analyzed according to the ZEMA, NEMC and AFs' Environmental and Social Policy requirements in order to identify potential risks and appropriate mitigation measures. An Environmental and Social Management Plan (ESMP) will be prepared according to the set requirements, with the aim to:

- assessing possible measures to avoid minimize and / or mitigate risks identified;
- develop a monitoring plan
- promote a policy for high quality of environmental and social practices.

All the costs related to mitigation measures and monitoring of environmental and social parameters will be included in the project budget.

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

The Monitoring and Evaluation framework of the project will be designed according to the procedures set by NEMC and by the AF. The Results framework gives the performance indicators against which the project will be evaluated and specifies the baseline as well the objectives to be achieved. The M&E plan includes monitoring of environmental parameters to meet the requirements of ESMP. The detailed M&E plan will be prepared and agreed upon within a month after the project starts.

E. Include a results framework for the project proposal, including milestones, targets and indicators.

The Results framework will be prepared and attached in a detailed proposal.

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

A. Record of endorsement on behalf of the government[26] *Provide the name and position of the government official and indicate date of endorsement. The endorsement letter should be attached as an annex to the project proposal.*

Mohammed Khamis Abdulla, Deputy Permanent Secretary, Vice President's Office	Date*: Date: 9th August 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 (National Strategy for Growth and Reduction of Poverty 2010-2015; National Climate Change Strategy 2021, Tanzania Vision 2025 and in the National Adaptation Programme of Action (NAPA) 2007) 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: 4th August 2021	Tel. and email: **+255 753 240 517**, nieaf@nemc.or.tz / kasigazi.koku@gmail.com
Project Contact Person: Nassir Ally	
Tel. +255773245398 And Email: nassirtahiir@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: Government Endorsement Letter

Letter of Endorsement by Government

UNITED REPUBLIC OF TANZANIA
VICE PRESIDENT'S OFFICE

Telegraphic address: "MAKAMU",
Telephone: **+255 26 2329006**
Fax. No.: **+255 26 2329007**
E-mail: km@vpo.go.tz

In reply please quote:
Ref. No: **BA.90/201/01/101**

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

9th August, 2021

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

Subject: Endorsement for *Climate Change Adaptation in Saltwater stressed and Freshwater Deficient Communities in Zanzibar*

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

Accordingly, I am pleased to endorse the above project Concept Note with support from the Adaptation Fund. If approved, the project will be implemented by National Environment Management Council (NEMC) and executed by First Vice President's Office in Zanzibar.

Sincerely,

Mohammed Khamis Abdulla
Deputy Permanent Secretary, Vice President's Office

Annex 2: Project Formulation Grant request form

Project Formulation Grant (PFG)

Submission Date: 9th August 2021

Adaptation Fund Project ID:

Country/ies: **United Republic of Tanzania**

Title of Project/Programme: **Climate Change Adaptation in Saltwater stressed and Freshwater Deficient Communities in Zanzibar**

Type of IE (NIE/MIE): **National Implementing Entity (NIE)**

Implementing Entity: **National Environment Management Council (NEMC)**

Executing Entity/ies: **First Vice President's Office, Zanzibar**

A. Project Preparation Timeframe

Start date of PFG	**10th October 2021**
Completion date of PFG	**30th December 2021**

B. Proposed Project Preparation Activities ($)

Describe the PFG activities and justifications:

List of Proposed Project Preparation Activities	Output of the PFG Activities	USD Amount

Desktop literature review	Detailed literature review, a list of reviewed literatures	1100
Stakeholders workshops for validating the project design and inputs for full proposal development	Workshop reports, validated project design, improved design, inputs to the design process	6,500
Field visits in the project area for validating project design and obtaining inputs for full project proposal development	Validated project design	6,800
Detailed analysis of project components	Well described and detailed Project components	2,200
Development of project log frame and results framework	Detailed Project Logframe and Results Framework developed	1,500
Detailed project budget development	Detailed and concrete project budget	1,000
Preliminary Environmental Impact Assessment (EIA) of the proposed project	EIA report, EIA review report and Environmental Clearance Certificate	3450
Full project proposal development	Full Project Proposal developed	4,900
Implementing Entity's Management Fee		2550
Total Project Formulation Grant		30,000

C. Implementing Entity

This request has been prepared in accordance with the Adaptation Fund Board's procedures and meets the Adaptation Fund's criteria for project identification and formulation

Implementing Entity	Signature	Date (Month,		Telephone	Email Address

Coordinator, IE Name		day, year)	Project Contact Person		
Fredrick. Mulinda		9th August 2021	Nassir Ally	+25573245398	nassirtahiir@gmail.com

Annex 3

ASSESSMENT OF GENDER ISSUES OBSERVED DURING THE INITIAL STAKEHOLDER CONSULTATIONS IN SELECTED SITES OF UNGUJA AND PEMBA ISLANDS

1. Background

The economy of Zanzibar islands is highly dependent on climate and has a high level of vulnerability to weather related events. Agriculture sector has direct contribution to the livelihoods of many people, providing more than 75% of the foreign exchange earnings. Increasing wave activity and wave heights are a factor in recent increase in saltwater intrusion on the islands. In recent decades, Zanzibar has seen rising temperature, increased rainfall variability, higher wind speed and extreme weather events which have significantly contributed to food insecurity. Nowadays, a reasonable number of acres of arable land are no longer suitable for agriculture. Such a problem is coupled with increasing saltwater intrusion in the groundwater system, hence affecting freshwater supply. The decline of arable land and freshwater resources pose threat to the livelihoods of men and women of Zanzibar. The country's rural poor, particularly subsistence farmers who are mostly women and livestock keepers, will be affected the most. Indeed, Zanzibar is at risk in terms of agricultural productivity loss due to climate change impacts. Livelihood enhancement through application of innovative adaptation mechanisms in the agricultural sector is urgently needed to improve food production and support livelihood activities especially in coastal rural communities.

2. Gender and Climate change

The Zanzibar Climate Change Strategy considers gender in its plans and activities. Considering the fact that men and women in Zanzibar are engaged in different climate sensitive activities, the climate impacts to such activities will be different. For example, the impacts of sea surface temperature on seaweed farming will be significantly felt by women. The poor are particularly vulnerable to climate change on the islands, because of their limited livelihood base, poor access to markets and services, and low adaptive capacity. In general, the strategy recognizes the importance of ensuring that climate adaptation actions address gender and distributional inequalities. This is in line with Gender Policy of the AF. Gender-sensitive approaches for climate change adaptation responses require a robust understanding that climate change has differential impacts on women and men. It requires an understanding of existing and prevailing inequalities between women and men, and of the ways in which climate change can exacerbate these inequalities. Conversely, it also requires an understanding of the ways in which these inequalities can exacerbate the impacts of climate change on women and men. For example, women and girls may have less access to vital information on mitigation or adaptation strategies because of the cultural and religious norms. Even where there is lack of hard evidence, it is commonly recognized that climate change exacerbates existing inequalities in the key dimensions that are not only the building blocks of livelihoods, but are also crucial for coping with change, including for example: wealth; access to and understanding of technologies; education; access to information; and access to resources.

3. Objective of the assessment and output

Implementation of effective climate resilience measures requires a coordinated approach in addressing the impacts. To address these issues requires critical examination of the roles played by different groups so that proper intervention measures that will address the needs of all affected groups are put in place. The purpose of carrying out this assessment is to acknowledge differences between and among women and men, based on unequal distribution of resources, opportunities, constraints and power and to ensure that different needs of these groups are clearly identified and addressed at different stages of the project cycle. Addressing the identified concerns at the design stage will promote women's participation and engagement in community activities and promote better informed, gender-responsive and effective adaptation interventions. Table 1

below highlights gender related issues identified during the initial stakeholder consultations that needs to be addressed during the preparation of a detailed proposal.

Table 1. Gender related issues and mitigation measures for different project components

Project component	Gender issue	Proposed measure	Number of beneficiaries
Component 1: Support to water supply infrastructure for domestic use and irrigation	• Water scarcity forces people (more often women and children) to travel longer distances looking for unsafe water • Gender based conflicts including incidents of abandonment or separation of couples due to water scarcity and food shortage • Schoolchildren (especially girls) forced to fetch water for use in toilets • 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 reservoir governance system to guide representation of women, youth and vulnerable groups in the village water reservoir committee (ensure proportional presentation of different groups) • Water harvesting structures to address the shortage	• 6576 women and 5558 men will benefit the domestic water reservoir and irrigation interventions • At least 1000 students will benefit from the constructed structure at the school • The village water reservoir committee will have an equal presentation of men, women and youth
Component 2: Restoration of saltwater affected farmlands and degraded coastline	• Women and children especially orphans suffer the most and are more vulnerable to food insecurity whenever there is crop failure due to seawater inundation • Beach erosion will have more impact to women who are engaged in mariculture • Proper and inclusive criteria for selection of beneficiaries to ensure 50% of all people involved to implement activities under this component are women	• Establish proper guidelines for selecting members of farmer and women groups • Improve knowledge on best farming practices for both men and women • Improvise measures to prevent beach erosion and coastal flooding • Improve knowledge of good mariculture practices to women • 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	• About 772 women and 584 men in Unguja 5804 females and 4974 males in Pemba will benefit from dike construction and mangrove restoration for preventing saltwater inundation in farmlands • A minimum 3000 community members (fishermen and fishmongers including some women) will benefit from the restoration of the seawall • At least 100 women will benefit from good mariculture practices • The Water User Association Management Committee will have an equal

Project component	Gender issue	Proposed measure	Number of beneficiaries
			presentation of men, women and youth
Component 3: Conservation and climate smart livelihood activities	Low participation of women and girls in some livelihood activities	• Establish proper and inclusive criteria for selection of beneficiaries to ensure a balanced and fair presentation of women, men and youth	• A total of 2,100 households will benefit from different climate resilient activities that will proposed in the selected villages. Activities include establishment of tree nurseries, improvement of horticulture crops, improved poultry and production of shellfish.
Component 4: Institutional capacity building of local government authorities and communities in planning, implementation of climate change adaption actions and dissemination of project results and lessons learnt	• Existence of barriers for female district officers to participate in climate change capacity building sessions • 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 interests over others	• Establish proper guidelines on participation of female district officers on climate change related capacity building activities. • Establish proper guidelines on participation of vulnerable groups in capacity building and other project activities • Ensure selection of at least 40% of women as participants in Capacity and knowledge management and other project interventions • Provide special preference for disabled participants • Gender groups especially women need to be supported and empowered to participate in capacity and knowledge management activities	• The capacity building activities of central government officers will include 5 ministry officers whereby at least 2 officers shall be women • The capacity building activities of local government officers will include 10 district officers whereby at least 4 shall be women and 20 Shehia leaders among whom at least 8 shall be women • Farmers will be selected from various farmers cooperatives groups that will be identified during the preparation of detailed proposal. Emphasis will be on equal presentation of men, women and youth, with preferential participation of disabled participants.
Implementation arrangements	Most key leadership roles are held by men	• Proper and inclusive criteria for selection of members of	• At least 2 women in PMU and at least 3 women in PSC

Project component	Gender issue	Proposed measure	Number of beneficiaries
		Project Management Unit (PMU) and Project Steering Committee (PSC) to ensure at least one third of both PMU and PSC members are women	