CIF CLIMATE INVESTMENT FUNDS

PROJECT TITLE:

PROJECT PREPARATION FOR THE CLIMATE RESILIENT WATER SERVICES FOR CUAMBA AND LICHINGA CITIES PROJECT

COUNTRY/REGION: MOZAMBIQUE

MDB: AFRICAN DEVELOPMENT BANK

AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE DE DÉVELOPPEMENT

WATER DEVELOPMENT AND SANITATION DEPARTMENT

CLIMATE INVESTMENT FUNDS- PILOT PROGRAM FOR CLIMATE RESILIENCE (PPCR)

Technical Assistance Proposal for Preparation for the Climate Resilient Water Services program for Cuamba and Lichinga Cities Project

JUNE 2023

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1 INTRODUCTION AND BACKGROUND

The proposed technical assistance (TA) seeks to increase the resilience of utilities, and communities – particularly women and youth - in the cities of Cuamba and Lichinga to frequent and extreme climatic events, to pervasive land degradation and to frequent siltation of dams through promoting resilient catchment-based integrated management. Mozambique completed its Strategic Program for Climate Resilience (SPCR) in 2011. However, significant TA is required to ensure that the investment areas endorsed for climate resilience achieve an adequate level of sectoral readiness. The Bank is prepared to support these activities in order to advance the priorities of Mozambique's SPCR in the water sector.

Mozambique is one of Africa's most vulnerable countries to climate change. Poverty, weak institutional development and frequent extreme weather events make Mozambique vulnerable. An estimated 58% of Mozambique's population is at risk of water-related hazards. The country is exposed to extreme weather events including droughts, floods and tropical cyclones. Cyclones are particularly devastating when they coincide with high tide or peak wet season flows, as occurred in 2019 with cyclone Idai, one of the strongest on record in the West Indian Ocean. Idai impacted 1.85 million people, resulting in 600 deaths; totally or partially destroyed over 200,000 houses; and caused a deadly cholera outbreak. Large areas of the country are exposed to droughts (every three to four years) and river/coastal storm surge flooding. Mozambique has a long coastline of about 2700 km, with more than 60% of its population of 22 million living in coastal areas, which exposes large numbers of people to sea-level rise and climate extremes.

In terms of vulnerability and readiness, Mozambique is ranked as highly vulnerable with low readiness, which calls for investments to improve readiness and urgency for action. Mozambique is vulnerable to the flooding of water sources, as it is situated downstream of nine major river systems which are already affected by climate variability; climate change is likely to exacerbate this vulnerability. The increased risk of floods and droughts, more variable rainfall and high population growth put water resources under pressure. Every year it is estimated that the country loses 1.1% of its GDP due to the impacts of droughts and floods on economic resources and activity. Climate change may lead to more severe drought and flooding. Evaporation rates and drought are projected to increase by later this century.

Mozambique's NAP (2022) identifies weak infrastructure for the capture, storage and channeling of water as the main limitation in the sector, that in turn affects sectors such as agriculture, health and environmental sanitation, and power generation. Water resources are also burdened by competing needs resulting from urbanization, agriculture, industrial growth, and ineffective water resource management.

Government, through the Water Supply Infrastructure and Asset Investment Agency, is intensifying efforts to mobilize investment finance to address this limitation. Feasibility and detailed design studies are planned for the two project cities of Cuamba and Lichinga. The cities are served by the heavily silted Mpopole Dam and Locumué Dam, respectively. The siltation and recurrent droughts are impacting the cities' ability to supply water throughout the year. The proposed project seeks to support Mozambique's increased efforts to construct climate-resilient water infrastructure. It will enhance a climate-informed design by enhancing climate-resilience capacities for the planning, development and management for improved water security in the two cities. It will engender adaptation technologies that focus on making the most efficient use of existing water resources and on sustainability of the storage options.

2 STRATEGIC RATIONALE

2.1 STRATEGIC THRUST

Mozambique ranks third among the African countries most exposed to multiple weather-related hazards. The government strives to promote a low carbon development and pursue a green economy through the integration of adaptation and mitigation measures in sectorial planning. Mozambique signed the Paris Agreement in 2016 and communicated its updated climate mitigation and adaptation commitments and priorities through its Nationally Determined Contribution (NDC) in 2021.

The country's number one priority response to climate change is adaptation in the context of addressing key vulnerabilities, building adaptive capacity addressing loss and damage, and increasing the resilience of communities, infrastructure, and ecosystems. The water sector is a key priority, and specific priorities include (i) increasing water resources management capacity (ii) Increasing access and capacity for water collection, storage, treatment and distribution (iii) Promoting more resilient rural sanitation solutions for floods and (iv) Conservation of rainwater in excavated and underground reservoirs in the South

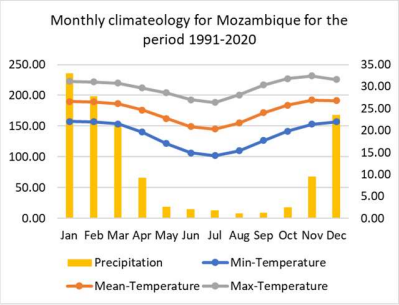
The increased risk of floods and droughts, more variable rainfall and high population growth put water resources under pressure. The action plan of the water sector to implement the sustainable development goals - 2015 – 2030, prioritises increasing the storage capacity: wherever feasible and the development of integrated development of water resources infrastructure for multiple uses with priority given to satisfying the basic needs in critical areas. Catchment based management of water resources is expected to increase the resilience of utilities, and communities – particularly women and youth - in the cities of Cuamba and Lichinga to frequent and extreme climatic events, to pervasive land degradation and to frequent siltation of dams. It will enhance the adaptive capacity of the population in these catchments.

The proposed technical assistance is consistent with the aspirations of Government of the Republic of Mozambique's (GRM) National Strategy for Development (2015-2035), which includes the following WASH and water resources management goals (i) Increasing access to basic water and sanitation services by 2035 (ii) service pricing that ensures full cost recovery and increased service coverage and (iii) sustainable sharing of international river basin and integrated water resources management.

2.2 WATER RELATED CLIMATE RISK PROFILE

The average monthly climatology for Mozambique is presented in Figure 1. October to March is hot and rainy, with temperatures along the north coast and inland in the Zambezi Valley averaging more than 35°C. April to September is cooler and drier, with night-time average temperatures in the south dipping below 15°C. The rainy season begins in November and peaks in January/February. Rainfall varies from 1,800 mm per year near the Zambezi Delta to 300 mm per year in the lowlands of the southern interior. The highlands of the northern and central regions are affected by the northeast monsoon in summer. Tropical cyclones from the Indian Ocean typically strike Mozambique in summer and are associated with the heaviest rainfalls[1.23.]

Figure 1: Monthly Climatology for Mozambique (1991-2020)[4]

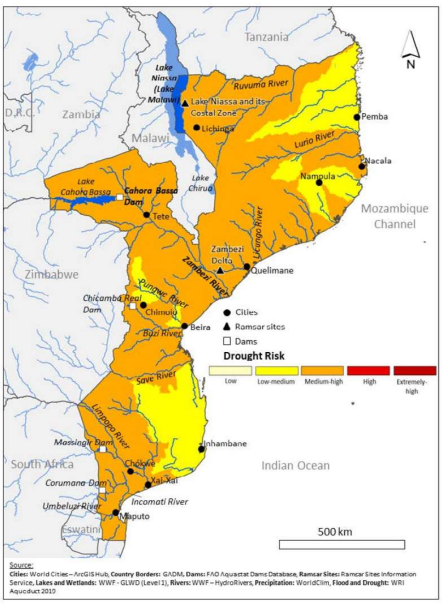


[1] FAO. 2016. Aquastat: Mozambique
[2] Netherlands Commission for Environmental Assessment. 2016. Climate Change Profile: Mozambique
[3] USAID. 2018. Climate Change and Health in Mozambique: Impacts on Diarrheal Disease and Malaria.
[4] https://climateknowledgeportal.worldbank.org/country/mozambique/climate-data-historical

The areas affected by climate risks are shown in Figure 2, while figure 3, shows the statistics on the population affected by droughts and floods. Each year, floods impact 350,000 people. The total costs of damages attributed to flood events from 1967-2023, is estimated at over $3.2 billion [5]. The population affected by droughts between 1997-2021 is estimated at 23.7 million people, and damages during the same period are estimated at $ 112 million.

Figure 2: Flood and Drought Risks in Mozambique[6]

DROUGHT RISKS



FLOOD RISKS

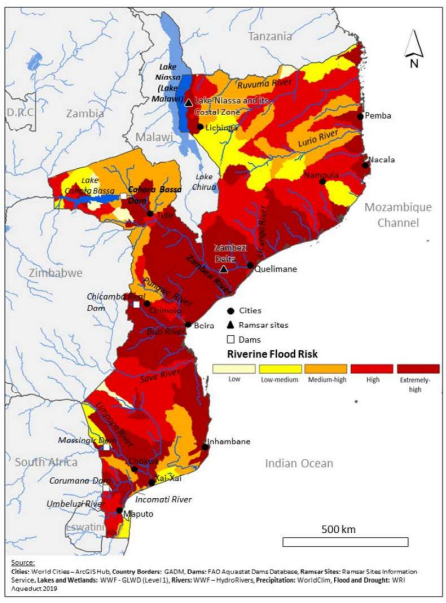
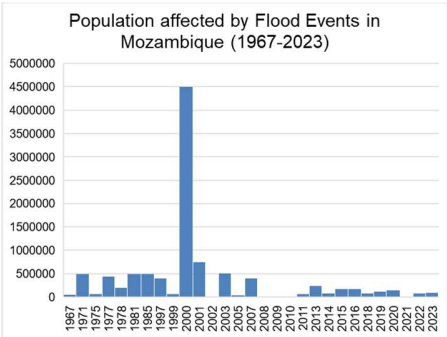
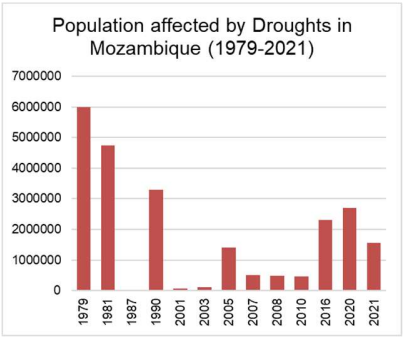


Figure 3: Key drought and flood statistics in Mozambique (EM-DAT)[7]





The risks and associated costs of climate change are linked to structural inequalities, which leave communities more exposed and vulnerable. Coping with climate change and its impact on water resources requires the collection and analysis of water resource data, better forecasting of weather and long-run climate change impacts, increasing stakeholder involvement through education, and the establishment of early warning systems. Climate change will increase the frequency of drought and flood risks. Catastrophic flooding in the south has been responsible for infrastructure damage and loss of human life[8].

[5] https://public.emdat.be/data
[6] USAID (2020); Mozambique Country Water Profile
[7] EM-DAT | The international disasters database; https://emdat.be/, accessed June 30, 2020.
[8] https://winrock.org/wp-content/uploads/2021/08/Mozambique_Country_Profile-Final.pdf

2.3 Climate Change Future Trends

The projected change in mean temperature and mean precipitation distributions are shown in figures 4 and 5. Global climate models project that temperatures will increase between 2.0 and 3.9°C. Climate change's impact on precipitation is less certain but total annual precipitation may decrease between 50–90 mm/year, primarily between October and December, with additional water losses from increased evaporation[9]. Increased temperatures will impact increased aridity and the length and severity of the dry season (December to March).

Figure 4: Projected change in mean temperature distribution SSP1, Mozambique, Multi Ensemble Model

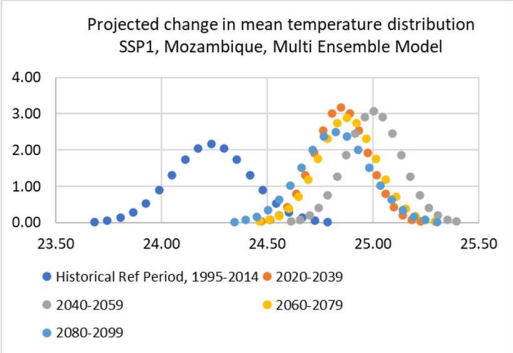
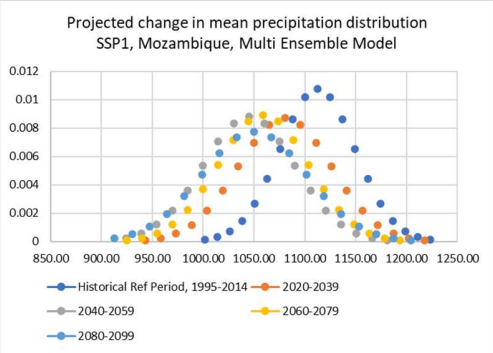


Figure 5: Annual average precipitation in Mozambique for 1986 to 2099.



Projected changes include (i) Average temperature increase of 1°C in the next 20 years; more marked temperature increases in the interior, southern and coastal areas (ii) Increase in the number of days exceeding 35°C (iii) Decrease in the number of nights below 25°C (iv) Increase in intensity of rainfall events and cyclones (v) No statistically significant rainfall changes, but likely continuation of delayed start and earlier end to the rainy season in the north and (vi) Increase in droughts for central and southern regions; more floods during rainy seasons. Climate change may lead to more severe drought and flooding. Water and sanitation infrastructure will face risks of damages; and services may be disrupted with greater frequency and at greater costs. These impacts may have adverse consequences for achieving SDG 6.

2.4 Climate Rationale

Expected increases in temperature and irregular spatial and temporal distribution of rainfall from climate change, will lead to more varied and unpredictable flows, affecting water security. Rising temperatures and the changing nature of drought periods will increase demand on water resources. The impacts of cyclones are also projected to worsen through a combination of sea level rise and urbanization along the coast[10]. These climate hazards entail significant risk to water resources and to Water Supply and Sanitation infrastructure. Mozambique's water and sanitation institutions are ill equipped to face the emerging challenges posed by climate change. There are limited financial resources, institutional capacity, and readiness to respond to climate impacts. Water sources are potentially affected by drought and flood in terms of quantity and quality. Yet, the systematic inclusion of climate risk assessments is not a common practice for feasibility studies, engineering design, and operational procedures to adapt to, and reduce the risk from, climate-related impacts. The technical assistance is well placed to contribute to climate change policies and measures, as outlined in Mozambique's Intended Nationally Determined Contribution which indicates climate change effects on reducing the availability of drinking water.

[9] World Bank Group. Climate Knowledge Portal Mozambique Projections https://climateknowledgeportal.worldbank.org/country/mozambique/climate-data-projections (accessed Mar 3, 2021).
[10] USAID. Climate Risk Profile - Mozambique; Washington, D.C., 2018.

3 PROJECT DESCRIPTION

3.1 PROJECT DEVELOPMENT OBJECTIVE

The technical assistance aims to increase the resilience of the planned water supply infrastructure, utilities, and communities – particularly women and youth - in the cities of Cuamba and Lichinga to frequent and extreme climatic events, to pervasive land degradation and to frequent siltation of dams through promoting resilient catchment-based integrated management.

The project interventions will entail: (i) a climate risk assessment with respect to water management and development in the two cities (ii) a vulnerability assessment for the planned water supply infrastructure (focusing on exposure, sensitivity to hazards and the adaptive capacity to implement adaptation measures that help avert potential impacts to the water supply systems) in the two cities (iii) development of a menu of adaptation measures including both a qualitative assessment, with economic analysis of baseline conditions before the project and with the project, in the two cities (iv) designing catchment-based technologies to address the causes and effects of reduced supply, flooding and inundation, and degraded water quality on the sustenance of water supply infrastructure (v) strengthening the capacity of technical staff in planning for climate resilient technologies and (vi) formulation and inclusion of climate-resilient pathways and adaptation measures in the detailed design. The pathways will highlight refinements or changes that can be made in wetter or drier climate futures to inform project design, implementation and operation for the two cities of Cuamba and Lichinga.

The TA will enhance water sector stakeholders' awareness and capacity in climate-resilient catchment-based planning and management. It will support counterparts in line agencies, utilities, local bodies, and planning, through training to build capacity, create an enabling environment, and improve absorptive capacity to (a) mainstream climate risk management in water sector (b) enhance access to climate finance and (c) promote collaboration between stakeholders.

3.2 PROJECT BENEFICIARIES

The direct beneficiaries will be the population of towns where water supply and sanitation schemes under the baseline project will be financed. The population of both Cuamba and Lichinga has grown rapidly in the recent past is forecast to continue at 4.4% p.a. The project will benefit the 62% of the 326,572 people in Cuamba City and the 87% of the 290,205 people in Lichinga City who did not have access to water supply in 2021[11]. The project will enhance learning and knowledge-sharing on the integration of climate resilience into water security and strengthen resilience to water-related shocks. Local authorities and service providers will benefit from climate-resilient water management. Lastly, the trained groups are expected to become more proactively engaged in sustainable catchment-based water management, which will in turn lead to improved water security outcomes.

3.3 PROJECT COMPONENTS AND ACTIVITIES

Component 1: Climate Risk Assessment for strengthened WSS infrastructure investments

Activity 1.1: *Climate risk assessment with respect to water management and development in the two cities.* The assessment will include identifying current climate risks, establishing the baseline climatology, and reviewing climate change projections under different emission scenarios. Tasks will include (i) analysis of available data and data source(s)-based on official national, data on changes, trends and seasonal

[11] http://www.ine.gov.mz/estatisticas/estatisticas-territorias-distritais/niassa

variations in air temperature, precipitation, winds, extreme weather events, etc. (ii) analysis of climate risks (iii) analysis of future scenarios of climate change, vulnerability of the project to climate impacts and (iv) Identification of adaptation and coping experience and strategies.

Activity 1.2 *Assessment of Sensitivity and Vulnerability of the WSS infrastructure components.* This will involve assessment for the planned water supply and sanitation infrastructure (focusing on exposure, sensitivity to hazards and the adaptive capacity to implement adaptation measures that help avert potential impacts to the water supply systems) in the two cities. This requires analysis of the interaction of biophysical and the socio-economic elements and covers; exposure to specific social/environmental stresses, sensitivities, and adaptive capabilities. Tasks will include (i) identification of vulnerability issues/groups and (ii) screening project interventions for sensitivity and risks.

Activity 1.3: Formulation of adaptation measures and design of catchment interventions. This activity involves the development of a menu of adaptation measures including both a qualitative assessment, before and with the project, in the two cities. Key tasks will include (i) formulation and prioritisation of potential adaptation activities (ii) development of an action plan for the implementation of adaptation measures and (iii) design catchment-based technologies to address the causes and effects of reduced supply, flooding and inundation, and degraded water quality on the sustenance of WSS infrastructure

Activity 1.4: Investment preparation (update of feasibility and engineering designs) for climate-adaptive technologies. This activity will involve the formulation and inclusion of climate-resilient pathways and adaptation measures (catchment -based technologies) in the detailed design. The pathways will highlight refinements or changes that can be made in wetter or drier climate futures to inform project design and implementation for the two cities of Cuamba and Lichinga.

Component 2: Strengthened knowledge for improved climate informed decision

This component will also support the strengthening of staff and community capacity of planning for climate resilient technologies. The TA will help to develop and disseminate a range of knowledge products to support resilient development. Dissemination will include various modalities, such as workshops, seminars, and/or training, use of social media platforms, and production of web-based materials, to facilitate wider reach and accessibility beyond the TA duration.

3.4 Project Cost and Financing

The TA is estimated to cost USD 725,000 finance through the CIF-PPCR funds. The summary of the expenditure is shown in Table 3.1: Eligible expenditures include: (i) consultant services; (ii) non-consultant costs for local training and workshops and (iii) operating costs essential to conduct the technical assistance, such as vehicle rental. The government will provide counterpart staff. The technical assistance consultants and housing accommodation, particularly in the field; data and information access; office supplies; secretarial assistance; and other in-kind contributions will be built into the cost of their services.

Table 3.1: Summary of the expenditure

S.N	Item	Qty	Amount (USD)	Disbursement category
1	Component 1: Climate Risk Assessment for strengthened WSS infrastructure investments	Lumpsum	600,000	Services
2	Component 2: Strengthened knowledge for improved climate informed decision		100,000	Workshops
	Total		700,000	

3.5 Lessons Learned and Reflected on the Project

The proposed TA builds on the lessons learned over the past decade, from the UN Habitat, and the Organization for Economic Cooperation and Development, regarding climate proofing water supply and sanitation investments. For example, droughts can be followed by torrential rain and floods. This indicates that dealing with climate change is locally oriented, multifaceted, and complex, and the sooner mitigation measures are designed and implemented the less steep will be the learning curve. The Project acknowledges this lesson by building the foundations of weather statistics, establishing the capacity to track water resources in real time, strengthen early warning systems, and explicitly building climate change into WSS sector designs and long-term planning. The UN HABITAT Climate Proofing Toolkit for Basic Urban Infrastructure, with a focus on water and sanitation of 2021, has provided relevant inputs on the preparation of the project. Best practices and learning experiences have been drawn from other AfDB funded projects of similar nature across Africa, like those from Malawi and Ethiopia.

4 Project Feasibility

4.1 Cost Effectiveness

The Project includes an optimized mix of interventions for a paradigm shift towards a climate-resilient water sector: water efficiency, support for mainstreaming of climate adaptation into WSS sector design and programming, and broad communication and awareness activities. The primary benefits will be accrued from implementation of catchment management based on the adoption of sustainable land and water management practices. The project's support is expected to result in environmental benefits, including: (a) reduced soil erosion; (b) reduced vulnerability to climate hazards and mitigated effects of droughts; (c) improved flow control and (d) improved sediment retention and flood control. The project's plausible ground for cost effectiveness is the multiple, gender and equity-based climate resilience benefits associated with climate proofing of WSS infrastructure investments in the two cities. This combination with interventions under the baseline operation will allow for increased resilience and optimisation of synergies and the minimization of costs.

4.2 Gender and Equity

Reducing gender inequality and social exclusion has become a top priority in all the country's development frameworks and interventions. Women form the majority of the population in the two towns: 51.2% of the total population of Lichinga City (241,204 in 2017 Census); and 50.6% of the population of Cuamba (167,928 in 2017). Whether it is time lost in water collection or in looking after the sick, missed education opportunities or vulnerabilities at health centers, impacts of inadequate access to potable water supplies are disproportionally felt by women.

The landscape approach adopted for catchment management will ensure the inclusion of socio-economic different communities within the landscape. Women are key stakeholders in the landscape economy and will be consulted during Project preparation. Their participation in project activities, including those that have attracted more male participation in earlier projects such as participation in water user associations, will be encouraged under this project. Ensuring women's participation and promoting their decision-making roles will inform the design of the proposed WASH infrastructure to better suit their needs.

The TA includes actions to ensure women actively participate in (i) program-related public consultations and (ii) management decisions of community catchment management services. The project will also involve local women technical professionals in coordination activities in the preparation of the climate

proofed detailed designs. This will strengthen their capacity in incorporating climate-proofing measures for water supply and other infrastructures. A gender action plan will be prepared to enhance the inclusion of climate sensitive gender considerations into the updated project designs for the two cities.

4.3 DISABILITY AND INCLUSION

Persons with disabilities will participate across project interventions in catchment-based water resource management, stakeholder consultations and outreach activities, in line with SDG 10 Persons with disabilities will be empowered to take on leadership and management positions at the community, local, and national levels to foster innovative catchment-based water management solutions.

5 IMPLEMENTATION ARRANGEMENTS

5.1 IMPLEMENTATION ARRANGEMENTS

The recipient of the project preparation grant will be the Minister of Economy and Finance of the Government of Mozambique. AIAS will be the Executing Agency. The Project will have a Project Coordination Unit (PCU) to coordinate activities with the various agencies of the Government and provide guidance to project implementation.

5.2 IMPLEMENTATION SCHEDULE

The TA will be implemented over a period of 24 months expected to begin in October 2023 and end in September 2025. The detailed Implementation Schedule is attached as Appendix 2.

5.3 PROCUREMENT

Procurement will be carried out by the Executing Agency, AIAS in line with the project procurement arrangements for the Inclusive Urban Sanitation in Chimoio Project, under preparation. For each contract to be financed by the Grant, the different procurement methods or consultant selection methods; estimated costs; prior-review requirements; and time frame will be agreed between the Grantee and the Bank and will be provided in the Procurement Plan for the project.

5.4 FINANCIAL MANAGEMENT

Financial management will be according to the guidelines provided by the Bank and the Government procedures. Financial management for the Grant will follow that of the Inclusive Urban Sanitation Chimoio Project arrangement. The AIAS, as the Project EA, will be responsible for financial management including planning and budgeting, record keeping, accounting and reporting. The Executing Agency will open a special account in United States Dollars (USD) with the Central Bank of Mozambique with the corresponding local currency operating accounts at a local commercial bank. The grant financing will be audited by the Auditor General or his appointee, according to Terms of Reference agreed with the Bank. The audit report will be submitted to the Bank six (06) months after the end of the financial year.

5.5 RESULTS MONITORING AND EVALUATION

A result-based monitoring and evaluation plan will be put in place to track the achievement of the objectives, targeted results and outputs; document lessons, challenges and inform measures for resilience improvement. The purpose is to ensure that interventions are moderating climate change impacts and enhancing beneficial project qualities. A Monitoring and Evaluation Plan, including results monitoring and reporting to the CIF, will be prepared within the Inclusive Urban Sanitation in Chimoio Project report. The AIAS will prepare progress reports on a quarterly basis, which will highlight the progress towards meeting

the project's targets as reflected in the result-based logical framework. These reports will track the progress of implementation toward meeting the project development objective and indicators. Upon completion of the technical assistance, the Bank Task Manager will prepare a simplified Project Completion Report, within one month of project closure, which will recap the various interventions conducted during the technical assistance.

5.6 SUSTAINABILITY

The project is designed to reduce natural resources and environmental sustainability threats within selected catchments. This is expected to be accomplished through sustainable land and water management investments made according to catchment plans that reflect both stakeholder participation and priorities and scientific inputs. Given that it is difficult to effectively manage what is not measured, the baseline project will invest in water resources, water quality and groundwater monitoring to build a solid knowledge base for environmental management for the catchments that serve the two cities. The project will also aim at increasing production and productivity in the selected landscapes through physical water infrastructure investments and the promotion of economic value chains in staple crops, cash crops, livestock, agro-forestry and forestry. Better managed assets in the catchments are expected, in turn, to increase the incentives for maintenance and conservation for the catchments that serve the two cities.

5.7 STAKEHOLDER ENGAGEMENT APPROACH

The project will engage an array of stakeholders ranging from policy makers to direct beneficiaries from the community. This will build on work by various CSOs/NGOs, especially related to catchment management and capacity-building activities. Stakeholder participation will be ensured at all stages of the project cycle, from identifying information needs to vulnerability assessment, planning and choosing priority adaptation measures. Stakeholder mapping will be undertaken to identify and analyse the key actors in the water supply and sanitation sector, bearing in mind their relevance to climate change, area of operation, mandates, roles and responsibilities, capability, gender, and equity. The aim of the stakeholder engagement will be to ensure a multi-stakeholder involvement from a Gender and Equity perspective in catchment-based water resources management and in climate proofing the infrastructure investments. This will help to generate interventions for stakeholders' involvement and commitment in the implementation and monitoring and evaluation of the climate proofing measures.

5.8 KNOWLEDGE BUILDING

The TA will develop the appropriate knowledge and institutional platforms to promote integrated catchment-based water resources planning and management. Knowledge will be captured and disseminated through reporting from the executing agency, supervision reports and project-specific reports. Training workshops will be held at national, district and community level to enhance Knowledge, Attitude and Practice (KAP) regarding climate proofing.

6 KEY RISKS AND MITIGATION MEASURES

Institutional capacity and sustainability risks are rated, high. Investments in catchment management are long term by nature, and their impact is difficult to monitor and dependent on a critical mass of activity being achieved. The TA explicitly designed to provide input into a lending program, with the TA concentrating on upstream preparation for interventions in selected hotspot catchment areas and other targeted areas critical for maintenance of ecological infrastructure and for flood risk management. This approach will allow local experience to be gained and lessons learned to guide scaled up operations in later phases. Secondly, there are complexities and risks of failure involved with work at the community

level: Livelihoods-based catchment management at the community level is often unsustainable if designed without considering socio-economic conditions and strengthening local capacities and institutions. Experience has shown that strong community leadership and building interest and motivation are key determinants of success. The TA will therefore focus on establishing successful models amongst the most motivated communities, and awareness of best practices among communities and leaders.

7 RATIONALE FOR PPCR FINANCING / INVESTMENT CRITERIA

This proposal seeks to advance one important component of Mozambique's underlying climate resilience priorities from its 2011 Strategic Program for Climate Resilience (SPCR), which has to date remained unfunded. By providing funding toward TA for climate proofing and other project activities, the TA will contribute to investment priorities areas under the SPCR- promoting climate resilient urban development and infrastructure and is in line with Track 1C of the BDRP funding window. This TA also meets the overarching criteria of the PPCR funding window in terms of an advanced level of readiness, as Bank engagement in the project area has been well established through the planned baseline operation.

8 CONCLUSION

Climate proofing is one of the strategies for reducing climate risks and vulnerability of water sector infrastructure investments, thereby ensuring their high performance and sustainability. It is imperative that policymakers, planners, practitioners, engineers and utility managers ensure that the potential impacts of climate change are factored in the design, construction, location, and operation of current and future infrastructure investments. This calls for integrating climate change risks and opportunities in the design, operation and management of the water supply and sanitation infrastructure. Climate proofing of this critical infrastructure will reduce loss of lives, as well as physical damages and interruptions in water supply and sanitation services. This technical assistance is therefore timely and will provide incremental adaptation benefits by promoting good governance, building adaptive capacity and strengthening the resilient of water supply systems to climate variability and change.

9 APPENDIX

9.1 APPENDIX 1: PROJECT COST AND FINANCING

Component	Activities	Inputs	Units	Quantity	Amount (USD)
Component 1: Climate Risk Assessment for strengthened WSS infrastructure investments	Activity 1.1: Climate risk assessment with respect to water management and development in the two cities. Activity 1.2 Assessment of Sensitivity and Vulnerability of the WSS infrastructure components. Activity 1.3: Formulate adaptation measures and strategy and design of catchment interventions. Activity 1.4: Investment preparation (update of feasibility and engineering designs) for climate-adaptive technologies.	Consultant	Lumpsum	600,000	600,000
Component 2: Strengthened knowledge for improved climate informed decision	Knowledge management for improved decision-making at all levels.	Consultant	Lumpsum	100,000	100,000
	Sub Total				700,000
	MPIS				35,000
	Total Grant				735,000

9.2 APPENDIX 2: TA IMPLEMENTATION SCHEDULE

Component		2023	2024									2026								
	Activities	Q4	Q1			Q2			Q3			Q4			Q1			Q2			Q3		
Component 1: Climate Risk Assessment for strengthened WSS infrastructure investments	Activity 1.1: Climate risk assessment																						
	Activity 1.2 Assessment of Sensitivity and Vulnerability																						
	Activity 1.3: Formulate adaptation measures and strategy																						
	Activity 1.4: Investment preparation (update of feasibility and engineering designs) for climate-adaptive technologies.																						
Component 3: Knowledge management for improved decision-making at all levels.	Knowledge management																						