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INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT PAPER

ON A

PROPOSED ADDITIONAL LOAN  
IN THE AMOUNT OF US\$6.50 MILLION

AND A PROPOSED ADDITIONAL GRANT  
IN THE AMOUNT OF US\$9.25 MILLION

FROM THE STRATEGIC CLIMATE FUND

TO THE

REPUBLIC OF MOZAMBIQUE

FOR THE

CITIES AND CLIMATE CHANGE PROJECT – PILOT PROGRAM FOR CLIMATE  
RESILIENCE

October 1, 2014

Urban, Rural and Social Development Global Practice (GURDR)  
Country Department AFCS2  
Africa Region

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CURRENCY EQUIVALENTS  
(Exchange Rate Effective as of September 2, 2014)

Currency Unit = New Mozambique Metical (MZN)  
MZN 29.60 = US\$1  
US\$1.51 = SDR 1

FISCAL YEAR  
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AF	Additional Financing
AfDB	African Development Bank
AIAS	Administration for Water and Sanitation Infrastructure ( <i>Administração de Infra-estruturas de Água e Saneamento</i> )
ARAP	Abbreviated Resettlement Action Plan
CD	Country Director
CPS	Country Partnership Strategy
DA	Designated Accounts
DNDA	Directorate for Local Governance and Development ( <i>Direcção Local de Governação e Desenvolvimento</i> )
EIRR	Economic Internal Rate of Return
ESIA	Environment and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FM	Financial Management
GOM	Government of Mozambique
IDA	International Development Association
IFC	International Finance Corporation
IFR	Interim Financial Report
INGC	Institute of Disaster Management ( <i>Instituto de Gestão de Desastre</i> )
IP	Implementation Progress
ISR	Implementation Status Report
KfW	Kreditanstalt für Wiederaufbau
KM	Knowledge Management
LIDAR	Laser Interferometry Detection and Radar
MAE	Ministry of State Administration ( <i>Ministério da Administração Estatal</i> )
MCCCP	Mozambique Cities and Climate Change Project
MDG	Millennium Development Goals
MICOA	Ministry of Environmental Coordination ( <i>Ministério para a Coordenação Ambiental</i> )
MPD	Ministry of Development and Planning ( <i>Ministério de Planeamento e Desenvolvimento</i> )
MOPH	Ministry of Works and Public Service ( <i>Ministério de Obras Públicas e Habitação</i> )
MS	Moderately Satisfactory
PARPA	Poverty Reduction Action Plan ( <i>Plano de Redução da Pobreza</i> )
PDO	Project Development Objective
PPCR	Pilot Program for Climate Resilience
PPP	Public and Private Partnership
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
SIL	Sector Investment Loan
SLR	Sea Level Rise
SPCR	Strategic Program on Climate Resilience

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**REPUBLIC OF MOZAMBIQUE**  
**CITIES AND CLIMATE CHANGE PROJECT**  
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**REPUBLIC OF MOZAMBIQUE**

**CITIES AND CLIMATE CHANGE PROJECT**

**ADDITIONAL FINANCING Data Sheet**

<b>Basic Information - Additional Financing (AF)</b>	
Country Director: Mark. Lundell Senior Director: Ede Jorge Ijjasz-Vasquez Practice Manager: R. Mukami Kariuki Team Leader: Luiz Claudio Martins Tavares Co- Team Leader : Paula Pini Project ID: P146059 Expected Effectiveness Date: January 21, 2015 Lending Instrument: Investment Project Financing (IPF) Additional Financing Type: Scale-up	Sectors: water sanitation and flood protection (50%); sub-national government administration (50%). Themes: climate change (50%); other urban development (25%); city-wide infrastructure and service delivery (25%) Environmental category: B – Partial Assessment Expected Closing Date: December 15, 2018 Joint IFC: N/A Joint Level: N/A
<b>Basic Information - Original Project</b>	
Project ID: P123201 Project Name: Cities and Climate Change Joint Level: N/A Lending Instrument: Investment Project Financing	Environmental category: B – Partial Assessment Expected Closing Date: December 15, 2017 Joint IFC: N/A Fragility or Capacity Constraints [ ] N/A Financial Intermediary [ ] N/A Series of Projects [ ] N/A
<b>AF Project Financing Data</b>	
[x] Loan [ ] Credit [ x ] Grant [ ] Guarantee [ ] Other: Proposed terms:	
<b>AF Financing Plan (US\$m)</b>	
<b>Source</b>	<b>Total Amount (US \$m)</b>
Total Project Cost: 15.75 Cofinancing: N/A Borrower: Republic of Mozambique Total Bank Financing: Climate Investment Funds (loan) Climate Investment Funds (grant)	6.50 9.25
<b>Client Information</b>	
<b>Recipient:</b> Republic of Mozambique <b>Responsible Agency:</b> Administration of Infrastructure for Water and Sanitation (Administração de Infra-Estruturas de Água e Saneamento – AIAS) Contact Person: Olinda de Sousa, Director Telephone No.258823137450 Email: <a href="mailto:occsousa@hotmail.com">occsousa@hotmail.com</a>	

<b>AF Estimated Disbursements (Bank FY/US\$m)</b>				
FY	15	16	17	18
Annual	1.00	3.00	5.00	6.75
Cumulative	1.00	4.00	9.00	15.75
<b>Project Development Objective and Description</b>				
<p>Original project development objective: To strengthen municipal capacity for sustainable urban infrastructure provision and environmental management which enhance resiliency to climate related risks.</p> <p>Revised project development objective [N/A]</p> <p>Project description: Component 1 – Strengthening the municipal sector; Component 2: Enhancing resilience of Strategic Eligible Municipalities in coastal cities</p>				
<b>Safeguard and Exception to Policies</b>				
<p>Safeguard policies triggered:</p> <p>Environmental Assessment (OP/BP 4.01)</p> <p>Natural Habitats (OP/BP 4.04)</p> <p>Forests (OP/BP 4.36)</p> <p>Pest Management (OP 4.09)</p> <p>Physical Cultural Resources (OP/BP 4.11)</p> <p>Indigenous Peoples (OP/BP 4.10)</p> <p>Involuntary Resettlement (OP/BP 4.12)</p> <p>Safety of Dams (OP/BP 4.37)</p> <p>Projects on International Waterways (OP/BP 7.50)</p> <p>Projects in Disputed Areas (OP/BP 7.60)</p>			<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	
<p>Is approval of any policy waiver sought from the Board (or MD if RETF operation is RVP approved)?</p> <p>Has this been endorsed by Bank Management? (<i>Only applies to Board approved operations</i>)</p> <p>Does the project require any exception to Bank policy?</p> <p>Has this been approved by Bank Management?</p>			<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>	
<b>Legal Covenants</b>				
Financing Agreement Reference	Description of Condition/Covenant		Date Due	
<b>Conditions</b>				
Financing Agreement Reference	Description of Condition/Covenant		Date Due	
Section 5.01 of the Grant Agreement (GA).	Effectiveness:		Ninety (90) days after the date of the Grant and Loan agreements	
Section 5.01 of the Loan Agreement (FA)	In respect of the Grant Agreement: (a) The SCF/PPRC Loan Agreement has been signed and delivered, all conditions precedent to its effectiveness or the right of the Recipient to make withdrawals under it (other than the effectiveness of this Agreement) have been fulfilled			



	<p>In respect of the Loan Agreement:  (a) The SCF/PPRC Grant Agreement has been signed and delivered, all conditions precedent to its effectiveness or the right of the Borrower to make withdrawals under it (other than the effectiveness of this Agreement) have been fulfilled.</p>	
	<p>In respect of the GA and the LA:  (b) The Project Implementation Manual shall have been updated and adopted by the Recipient or the Borrower, as the case may be, in a manner satisfactory to the World Bank.</p>	

## I. Introduction

1. This Project Paper seeks the approval of the Executive Directors to provide an additional financing in an amount of US\$15.75 million (US\$6.50 million loan and US\$9.25 million grant from Strategic Climate Fund) to the Mozambique Cities and Climate Change Project (MCCCCP) (P123201), to be financed under the Pilot Program for Climate Resilience (PPCR).

2. The proposed Additional Financing (AF)<sup>1</sup> will scale-up the development impact of the MCCCCP by means of additional activities under Component 2 - Enhance Resilience of Strategic Municipalities in Coastal Cities. The City of Beira is considered to be the municipality most exposed to current and future climate risks in Mozambique<sup>2</sup>. The project will seek to build climate resilience by supporting the sustainable management of natural drainage through green infrastructure investments. This will reduce urban flooding and deliver a range of other environmental benefits to the inhabitants of the city. The AF will also seek to build on experience in Beira by extending the implementation of methodological approaches to the identification and sustainable management planning of urban green infrastructure to other municipalities in Mozambique – including green mapping and approaches to develop longer-term, sustainable financing for the management of green infrastructure assets.

3. Mozambique is a pilot country for the PPCR and its Strategic Program on Climate Resilience (SPCR) was prepared by the Ministry of Environmental Affairs Coordination (MICOA) and the Ministry of Development and Planning (MPD) with support from the World Bank, the African Development Bank (AfDB) and the International Finance Corporation (IFC). The overall goal of Mozambique's SPCR is: *“Improved quality of life and long-term resilience to climate change for vulnerable people living in areas exposed to climate change.”* The Mozambique's SPCR sets-out a program of policy and institutional reforms, pilot investments, studies and knowledge management initiatives to integrate climate risk and long-term climate resilience into core development planning and implementation, with the aim to generate transformational changes through scaled up actions in the priority sectors. The SPCR pilot investments are focused on the following key priority areas: coastal cities; transport; water resources management; agriculture; natural resources; and forestry.

4. The proposed AF is one of the three World Bank-supported pilot<sup>3</sup> investments included in the SPCR for Mozambique, namely: the green infrastructure and flood control in the city of Beira. The two other pilots are: (i) Transforming hydro meteorological services (approved by World Bank Board in April 2013); and (ii) Introducing climate-resilience into the design and management of Mozambique's roads.

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<sup>1</sup> The Government of the Republic of Mozambique (GOM) has requested that this SPCR pilot be processed as an AF to the MCCCCP (see Annex 3). This request is in line with the Bank priority of seeking to streamline and harmonize activities within existing institutional structures, and with the existing program of work, while also avoiding fragmentation of portfolio.

<sup>2</sup> Impact of climate change on disaster risk in Mozambique, *Mozambique National Institute for Disaster Management (INGC)*, study funded by Denmark, United Nations Development Programme (UNDP), and the German development agency GTZ (2010); *Mozambique Country Note on Disaster Risk Management*, World Bank (2009); *The Economics of Adaptation to Climate Change*, World Bank (2010); *Mozambique Strategic Program for Climate Resilience*, World Bank (2011); *Turn Down the Heat: Why a 4<sup>o</sup> World Must be Avoided*, World Bank (2013).

<sup>3</sup> Other PPCR funded pilots in Mozambique are financed by the AfDB and IFC.

## II. Background and Rationale for Additional Financing

5. Consistency with CPS, PARPA III and Millennium Development Goals (MDGs). The proposed AF is consistent with the two strategic pillars of the Country Partnership Strategy (CPS) FY12-15: (i) Vulnerability and Resilience, and (ii) Governance and Public Sector Capacity. Similarly, the AF is aligned with two pillars of the Government's Poverty Reduction Action Plan (PARPA III): Fostering Human and Social Development and Good Governance. Also, the AF will be instrumental to the attainment of some of the MDGs linked to Environmental Sustainability such as integrating the principles of sustainable development into national policies and programs; and improving the standard of living of slums dwellers.

6. This AF supports the Bank's twin goals by: contributing to ending extreme poverty by reducing losses of assets and outbreaks of water-borne diseases amongst the poorest population living in Beira, the large majority of which live in low-lying areas frequently affected by floods that are also highly contaminated with untreated domestic sewage; promoting shared prosperity by improving urban-environmental quality of a highly degraded urban area, which will increase the tangible and intangible value of all assets in both the direct and indirect project areas and will also offer recreational opportunities for all Beira's inhabitants.

7. Consistency with the PPCR goals. The proposed AF will contribute to the PPCR goal of initiating transformational change<sup>4</sup> through adopting an inclusive and participatory process to design and implement the AF. The AF will introduce an innovative approach to city planning, by focusing on the long-term climate risk and resilience that could have transformative impacts in the area of urban development in the country as whole. The proposed green infrastructure development under the AF will create tested technical and knowledge basis, including guidelines, for the dissemination in other cities in Mozambique, leveraging the PPCR transformative impact.

8. Original Loan. The MCCCCP is a US\$120 million Sector Investment Loan (SIL), approved on April 3, 2012, which became effective on July 18, 2012. The Project Development Objective (PDO) is to strengthen municipal capacity for sustainable urban infrastructure provision and environmental management which enhance resiliency to climate related risks. The project has the following two components: (i) strengthening the municipal sector (US\$35 million), and (ii) enhancing resilience of strategic eligible municipalities in coastal cities (US\$85 million). Aligned with the different nature of each component, the project has two implementing agencies: the Ministry of State Administration (MAE) implements Component 1, and the Administration of Water and Sanitation Infrastructure (AIAS) implements Component 2. The AF will scale-up implementation of Component 2 by financing green infrastructure investments to protect and improve the natural environment within the urban area that plays a key role in abating flooding in the city of Beira. These include: the banks of the Chiveve River, sections of the banks along the open-air canals, and some low-lying areas identified for flood retention

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<sup>4</sup> On October 2013, World Bank President Jim Kim wrote the article "How Ho Chi Minh City's Filthy Canal Became a Park". The article praised the transformational results of a Bank financed project that supported the transformation of this once-filthy waterway into a model for improving urban natural environment in difficult settings around the world, which controls floods in a city severely affected by extreme climate impacts, eliminated water-borne diseases and provides highly appreciated recreational opportunities.

basins. Lessons and experience from implementation at Beira city level will inform municipal planning support to 20 other cities covered by Component 1 of the MCCCCP. It is anticipated this will leverage the transformational impact of the PPCR-financed activities at the national level.

9. Status of Implementation and Implementation Status and Results (ISR) ratings. Project implementation is rated Satisfactory for Development Objective and Implementation Progress, and for compliance with loan covenants. Financial Management (FM) rating were downgraded to MS in the August, 2013 ISR, because there was a FM issue related to the use of project funds for activities not eligible under the credit for Component 1 (explained in detail in paragraph 10 below). These issues have since been resolved. There are no environmental, social or other safeguard problems. The drainage feasibility study for Beira is being updated, which is also providing the inputs needed to initiate the preparation of the environmental and resettlement instruments. The procurement guidelines are being followed. As of September, 2014 the project has disbursed US\$18.6 million of the International Development Association (IDA) Credit. Over US\$25 million have been committed through signed contracts and procurement activities for large works contracts with total value greater than US\$60 million are on-going. Current disbursement arrangements are adequate and Interim Financial Reports will continue to be used as report method for the original and AF funding sources.

10. Strengthened Financial Management Capacity. Ineligible expenditures of US\$221,034.00 were incurred under the parent project by the MAE, executing agency for Component 1. These funds have been reimbursed and the Government has now taken steps to strengthen FM procedures by granting the Component 1 Project Implementation Unit responsibility for management of project funds through the financial management system of MAE. Previously this responsibility was delegated to MAE's civil servants not involved in project implementation. AIAS, which is the executing agency for Component 2 and also for the proposed AF, has properly performed all FM procedures to date.

11. Rationale for Additional Financing. Mozambique is one of two African countries on the list of 10 high risk countries globally that face the greatest risks to climate change. The proposed AF to the MCCCCP will further enhance Beira's resilience to existing and future climate impact by providing support to another critical issue - protection of natural drainage, which is widely acknowledged by the donors' community as a key issue, but has not yet received direct financing support. The City of Beira, a delta-city which lies in a low-lying area, is considered to be the most exposed to current and future climate risks in Mozambique. Rising sea levels are gradually contributing to severe erosion along the coastline adjacent to the city center. High ground water table, tropical cyclones and severe storms regularly cause severe flooding in the city and these have a particular impact on poorer households in the lowest lying areas of the city. Encroachment of urban development into mangroves, existing green areas and into areas that help drain the city are exacerbating exposure to climate risks by reducing storm protection and downward infiltration of rainwater, and thus increasing flooding. As this combination of issues poses a challenge to a number of Mozambique's coastal cities, planned efforts to tackle these problems in Beira will generate lessons and experience that would be of relevance to other urban areas in Mozambique.

12. Urban green space – including parks, creeks, undeveloped floodplain areas, dune and mangrove systems - play a key role in reducing climate risks to the city, by receiving, absorbing

and channeling excess water during flooding. While the dunes and mangroves (now the focus of support from other donors, including Switzerland) provide much needed protection against coastal erosion and severe coastal storms in Beira, parks and undeveloped floodplain areas help reduce flooding in the city by soaking-up rainfall and complement the drainage services provided by the man-made open drainage canals built during the 1960's and currently being rehabilitated with IDA support as part of MCCCCP. Unfortunately, many of the city's creeks are becoming encroached by unregulated urban land uses. Hence these 'free' environmental services are gradually being degraded.

13. Rising sea levels will increase coastal erosion – causing land loss, displacement of human population and the loss of coastal wetlands – with implications for fisheries and coastal protection, and saline intrusion into freshwater systems and aquifers in low lying areas. Sea level rise (SLR) will also exacerbate the scale and impact of storm surges associated with tropical storms and cyclones. This was assessed using modeling studies supported by World Bank<sup>5</sup>. For the central coast city of Beira, the 100 years return period storm surge can be expected to occur every 60 years by 2050, even under the low SLR scenario used by the study, every 40 years under the medium-SLR scenario, and every 33 years under the High SLR scenario.

14. The AF will address the issues described above by financing activities that improve planning of urban green infrastructure for building climate resilience, help restore the functioning of natural drainage channels in the city to complement the ongoing renovation of the open canal system, and then promote the sharing of knowledge and experience with other cities. More specifically, the AF financing will (i) map, delineate and improve the planning of green infrastructure assets in the city, (ii) prepare concept and detailed designs for green infrastructure investments for selected areas within the city of Beira, including: a linear, tidal, parks along the Chiveve River, along sections of the open-air drainage canal banks, and along low lying areas identified for flood retention basins, (iii) undertake public works to implement the green infrastructure investments in the selected areas, and (iv) promote the sharing of knowledge with Government, municipalities and key stakeholders by supporting multiple events to disseminate information on the green infrastructure benefits and detailed technical issues. The AF will also introduce a zero-budget disaster recovery contingency fund<sup>6</sup> that could be triggered in the event of a natural disaster through formal declaration of a national or municipal state of emergency, or upon a formal request from the Government in the wake of a disaster. Upon triggering, reallocation of project funds from other project components and activities could be undertaken to facilitate rapid financing of goods and services. Eligible activities could include clearing and rehabilitation of drainage, sanitation and water supply infrastructure.

15. A comprehensive urban-environmental initiative supporting strengthening the Municipality of Beira resilience to present and future climate-related impacts has been created with support from the donor community. Activities aligned with this initiative include: (i) ongoing development of urban and port development plans supported by the Netherlands; (ii) rehabilitation of the coastal protection infrastructure, supported by Switzerland; (iii) implementation of an early warning system and emergency response program, supported by German Cooperation through Gesellschaft für International Zusammenarbeit (GIZ); (iv) rehabilitation of the sanitation and underground drainage systems, supported by the European

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<sup>5</sup> World Bank (2010), *The Economics of Adaptation to Climate Change*.

<sup>6</sup> This component will be financed through IDA funds; therefore, it is not eligible for PPCR funds.

Investment Bank; (v) ongoing improvements of the municipal urban-environment and financial systems, supported by Denmark, Switzerland and Austria; (vi) increasing municipal capacity to manage drainage systems (under preparation), supported by the Nordic Development Fund; and (vii) improvement of the hydraulic capacity of the Chiveve River (under preparation), supported by the German Cooperation, through Kreditanstalt für Wiederaufbau (KfW). Also aligned with this broad donors' initiative, the ongoing IDA-financed MCCCCP includes activities to support the sustainable rehabilitation of the drainage canals which takes into account climate change considerations.

16. Primary beneficiaries are the poorest inhabitants of Beira, who are the most affected by floods since they live mostly in low-lying areas where floods are more frequent and intense, and by diseases outbreaks after the floods. Approximately 70 percent (300,000) of Beira's inhabitants live in unplanned neighborhoods settled in low-lying areas and deprived of basic infrastructure services. The green investments supported by this AF will reduce flooding in the drainage basin where they are located. These investments will also reduce flooding throughout the city of Beira because they will contribute to lower the groundwater table level. Efforts will also be made to ensure that these residents remain the beneficiaries of the project in the medium term (e.g. through zoning, subsidies and other regulatory measures).

17. The number of primary beneficiaries within the Chiveve River basin (estimated to be around 50,000 people), which is the main area targeted by the proposed green infrastructure investments supported by the AF, was calculated based on a hydrological mathematical model which provided the information for the development of flood maps showing likely flooding scenarios with and without the project. These scenarios were evaluated according to different number of years and intensity of event recurrence (1, 10, and 50). Approximately 90 percent of primary beneficiaries within the Chiveve River are poor. Women and children are included among the primary beneficiaries. They constitute the group most exposed to floods, permanent high levels of humidity in their homes, and direct contact with flood water highly contaminated with untreated sewage, which causes water-borne diseases. Contamination of women and children is more likely to occur because they stay longer periods within the household area.

18. Secondary beneficiaries include all Beira's inhabitants (400,000 people) in general given multiple benefits such as: (i) reduce exposure to floods and increase city resilience to cope with the expected scenario of increasing severity of intense rainfall events as predicted by a number of climate models; (ii) create disincentives for irregular urban encroachment on the remaining natural drainage areas; (iii) create recreational alternatives in the city; (iv) reduce malaria, cholera and diarrheic outbreaks associated with each flood event; (v) contribute to abate the urban phenomena of the 'heat island effect'; and (vi) generate lessons and experience for other municipalities.

19. Closing date. The AF is expected to be implemented within a 3-year period. However, an extension by one year of the original project closing date is also being proposed to accommodate delays incurred in securing this AF. The new closing date will be December 15, 2018.

20. Special factors. There are no special factors or governance issues related either to the sector or with the project. There is no open INT investigation in Mozambique related to the

project. The team also confirms that no procurement is planned or underway that uses de-barred firms. No exceptions to Bank policies are required.

21. Rationale for Other Modifications: Whilst processing the proposed additional financing, a number of small modifications to the project documents are proposed to reflect actual progress and more generally to increase the project's development effectiveness and likelihood of success, recognizing the dynamic nature of project circumstances. The proposed restructuring, includes: (a) adjustments to the intermediate outcome indicators which focus on the progress of the key activities and streamline the monitoring framework, and (b) updating target values reflecting the refocus of activities and to recalibrate, where necessary, towards revised and meaningful projections.

### III. Proposed Changes

22. PDO and Results Framework. The PDO would remain unchanged: To strengthen municipal capacity for sustainable urban infrastructure provision and environmental management which enhance resiliency to climate related risks. However PDO indicator (iii) is replaced by the following core indicator: Area (ha) provided with drainage services. This change has been made in order to incorporate an available core indicator and provides a better alignment with the key project investments. In addition, there will be an increase in the number of beneficiaries and the associated target values, as a result of the scaling up of the project activities. Also, in order to reflect the PPCR support through the AF, three new Intermediate Result indicators for Component 2 are included as follows (see Annex 1 for details):

- Beira natural drainage courses improved and protected (Kms);
- Knowledge sharing activities to disseminate guidelines for green infrastructure in urban areas as key adaptation investments which increase resilience to climate change impacts (aligned with the PPCR core indicator 4<sup>7</sup>);
- Number of people (disaggregated by gender) benefited from the green infrastructure to cope with effects of climate change (aligned with PPCR core indicator 5<sup>8</sup>).

23. Further to the above, target values for PDO indicator (ii), were recalibrated to reflect revised projections related to support provided through Component 1 activities and to re-establish meaningful targets. Component 2 intermediate results indicators were adjusted, to provide greater focus on the progress of the key activities and streamline the monitoring framework (see Annex 1 for details).

24. Project Structure, which includes two components, will remain the same. Two additional activities will be included under Component 2. These are:

- a. Improved management and development of natural drainage, including : (a) mapping natural drainage areas in Beira; (b) preparing green infrastructure detail designs for selected natural drainage areas, supervision of the implementation; (c) developing sustainable maintenance and management models; (d) carrying out community outreach campaigns; (e) undertaking scoping studies of green infrastructure assets in five other municipal areas which shall serve as for preparing guidelines for the Ministry of State Administration and municipalities for the integration of green infrastructure management into municipal planning and development, (f) developing and implementing knowledge sharing and dissemination activities for the Borrower's Eligible Municipalities; and (g) implementation of green infrastructure investments (see paragraphs 26 and 27 for more information on the proposed green infrastructure investments).
- b. Disaster contingency financing: establishment of an immediate response contingent financing mechanism to facilitate access to rapid financing for disaster response in the aftermath of a national disaster to be triggered through formal declaration by the Borrower of a national or regional state of emergency.

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<sup>7</sup> PPCR Core Indicator #4: Extent to which vulnerable households, communities, businesses and public sector services use improved PPCR supported tools, instruments, strategies and activities to respond to climate variability or climate change

<sup>8</sup> PPCR Core Indicator #5: Number of people supported by the PPCR to cope with the effects of climate change.



25. The description of Component 2 (iii) was not modified. However, the emphasis on provision of technical support, equipment, and advisory services to strengthen the resilience of the municipality of Nacala to control erosion will be prioritized during implementation.

26. Financing Plan. The proposed US\$15.75 million AF from the PPCR comprises a grant and a loan as follows: a US\$6.50 million loan and a US\$9.25 million grant, both funded by a Strategic Climate Fund Grant. Table 2 below presents the expected cost breakdown by component.

Table 1 – Proposed AF by Component

<i>Components and Subcomponents</i>	<i>Original Credit (US\$ Million)</i>	<i>Additional Financing (US\$ Million)</i>	<i>Original credit + AF</i>
	<i>IDA</i>	<i>PPCR / Strategic Climate Fund</i>	<i>IDA + PPCR / Strat. Climate Fund</i>
<b>Component 1 – Strengthening the Municipal Sector</b>	<b>35.00</b>	<b>0.00</b>	<b>35.00</b>
(i) Local level support for improved municipal governance	27.50	0.00	27.50
(ii) National level support for improved municipal governance	7.50	0.00	7.50
<b>Component 2: Enhancing Resilience of Strategic Eligible Municipalities in Coastal Cities</b>	<b>85.00</b>	<b>15.75*</b>	<b>100.75</b>
(i) Identification of key investments in selected municipalities	0.60	0.00	0.60
(ii) Strengthening the resilience of the municipality of Beira	61.90	0.00	61.90
(iii) Strengthening the resilience of the municipality of Nacala	6.40	0.00	6.40
(iv) Strengthening the resilience of the municipality of Maputo	12.30	0.00	12.30
(v) Component 2 coordination and management	3.80	1.00	4.80
(vi) Improving natural drainage management in the city of Beira	0.00	14.75	14.75
(vi) Disaster recovery contingency funds (zero-budget)	0.00	0.00	0.00
<b>Total</b>	<b>120.00</b>	<b>15.75*</b>	<b>135.75</b>

\*US\$ 6.50 million (Loan); US\$ 9.25 million (grant)

#### **IV. Appraisal Summary**

27. The proposed US\$15.75 million AF, funded by the PPCR, will finance improving natural drainage management in the city of Beira through green infrastructure investments, which incorporate climate resilient planning considerations, to increase resilience of Beira to control floods and address future climate change. The green infrastructure investments will improve and protect natural drainage which has been spared from urban encroachment. These, together with the IDA financed man-made drainage canals, function as an integrated system to control floods in the city. These systems reduce floods by lowering the ground water table levels throughout the year and by evacuating/storing storm water, especially when heavy rains and high sea tides coincide. Both the natural drainage courses as the man-made canals are in need of urgent improvements and protection to further respond to present and further floods.

28. The main green infrastructure investments under the AF will target a natural creek known as the Chiveve River (see images in Annex 1), which is 3.5kms in length. The Chiveve constitutes a natural river course flowing through an urbanized area. Its drainage basin covers approximately 1,320,000 square meters, encompassing the Beira downtown commercial area and low to medium income residential neighborhoods. A significant extension of mangrove vegetation is still present in the downstream section of the Chiveve River, while in the upstream section the most significant natural feature is its wide flood plain, water-saturated most of the year, where exogenous vegetation such as grasses, reed and some bushes are dominant. Photos from the 1960's show a much wider Chiveve river and large extensions of mangroves within the urban area. Today, the Chiveve is much narrower, and its flood plains and mangroves smaller. These remaining green areas are covered by excessive sedimentation, garbage, and are used for open air defecation practices. However, the remaining areas, which encompass the Chiveve river floodplain and banks and are still free from urban encroachment, continue to play an important role in draining ground and surface water, thus contributing to control flood levels in the city of Beira. Under climate change uncertainties, the key role played by this area to control floods significantly increases.

29. A preliminary feasibility study for the green infrastructure investments for the Chiveve River in Beira has been prepared. This conceptual design aims at enhancing the environmental services provided by the Chiveve River to the city of Beira, including flood control while also unleashing its potential as an urban amenity. In order to achieve this potential, main green infrastructure investments proposed include: (i) removal of excessive accumulated sedimentation covering the mangrove trees respiratory roots (pneumatophores) throughout the river floodplain area, which causes the degraded condition of this ecosystem, hinders the seedlings to emerge and triggering the visible lack of biodiversity, while also reducing the river flood plain storage capacity– this must be carried out by hand or by usage of small devices to avoid further damaging the mangrove trees while also preserving the natural wetland system; (ii) improvements in the existing secondary drainage system draining to the creek to increase its conveyance capacity while also adopting technical solutions to lessen urban run-off into the creek in order to control sedimentation; and (iii) improvements in the secondary road systems surrounding the Chiveve River in order to ensure the roads play the double role of protecting the river natural functions while also contribute to unleash its potential as an urban-environmental asset.

30. The above activities will be complemented by investments such as (i) creation of a walking/biking pathway surrounding the mangrove vegetation along the 3.5kms length of the Chiveve River – this will clearly define the limits of the environmentally protected area along the river slopes and waterway, while also creating a recreational facility greatly appreciated in urban area; (ii) landscaping investments to improve and expand the green coverage, and green spaces, and to create an urban amenity asset and clearly define limits of the area assigned to public use and environmental protection purposes; and (iii) provision of public urban furniture, such as benches, recreational equipment for children and adults, lavatories, as well some selective structures to support economic activities compatible with the protection of the Chiveve River and that have potential to generate revenues for the maintenance of the proposed set of investments.

31. The German Cooperation, through KfW, is supporting a parallel investment to improve the hydraulic performance of the Chiveve River. This includes the removal of sediments from the riverbed, improvements of the invert slope, and the installation of a hydraulic gate to control water exchange. In the 1980's, the Government filled in the Chiveve River mouth, installing a narrow underground conduit to allow the river outflow. The objective was to block the inflow of the high sea tides, which caused floods in the urban areas in the absence of gates. In a few years, this narrow conduct clogged and the Chiveve deteriorated: water was no longer renovated and stalled, the mangrove vegetation in the floodplain degraded, and sedimentation and waste accumulated both in the riverbed and floodplain. The preparatory studies have been concluded, detailed designs are ongoing, and implementation is expected to initiate in February 2015. In summary, KfW is developing a project to clean up and improve flushing conditions in the Chiveve river, and the Bank has been asked to help finance the protection and improvement of an existing but highly degraded greenbelt zone on its perimeters to transform the Chiveve river from an area considered by the city's inhabitants as a polluted, 'smelly', disease-harboring wasteland to one of a desirable urban amenity that offers ecosystem services (biodiversity, drainage, urban cooling and flood mitigation) as well as recreational opportunities.

32. Finally, the proposed AF will also finance green infrastructure investments of similar nature (but of more limited scale) as described for the Chiveve River in other smaller areas that also play an important role in drainage and storage of storm water. A preliminary identification of these areas was carried out by the ongoing hydraulic assessments being undertaken for the rehabilitation of Beira drainage canals, financed under the MCCCCP. In addition, the ongoing preparation of the Beira Urban Master Plan, financed by the Netherlands Government, has also focused on identifying areas for flood retention basins. These two ongoing studies are being developed in an integrated manner and adopting consistent approaches. Based on these ongoing studies, areas suggested for the additional green infrastructure investments under the AF include: (i) Sections of the banks along the open drainage canal (which rehabilitation is funded under the MCCCCP) free from urban encroachment and offering enough space for some green infrastructure investments; (ii) Areas surrounding low lying areas where frequently ground water surfaces and storm water accumulates. The selection of these areas will be made as part of the ongoing technical studies financed under the MCCCCP for the rehabilitation of the drainage system in Beira. It is expected that green infrastructure investments in these areas will discourage urban encroachment by offering attractive environment for community gathering and recreation, while also restraining the practice of irregular dumping of solid waste.

33. Lessons learned and knowledge management. Worldwide interventions financing green infrastructure investments in low income neighborhoods, in particular as part of slums upgrading programs targeting environmental sensitive areas such as river basins providing water for urban areas, have demonstrated that: (i) green infrastructure is highly appreciated by communities given the multiple benefits provided which increases its sustainability and helps to avoid irregular land use practices; (ii) dissemination of green infrastructure strategies and knowledge sharing is better achieved by involving stakeholders (community, students, government authorities, etc) during the process in order to facilitate the perception of the “ before” and “after” situation; (iii) developing green infrastructure design solutions must involve stakeholders in order to increase sustainability and disseminate knowledge and, this can be achieved by involving stakeholders in the designs of many of the green infrastructure features such as these related to recreational activities and environmental outreach campaigns; (iv) knowledge sharing of technical aspects is better achieved by adopting hands-on training involving the appropriate stakeholders (students, government authorities, professionals, etc.), such as facilitating their participation in the green infrastructure design phase and the supervision of the construction phase.

34. Economic Analysis. An economic analysis for the proposed AF was carried out using three approaches, as follows:

(a) Including the additional costs associated with AF into the cost benefit analysis carried out when the MCCCCP for Beira was evaluated. For doing so, the benefits associated with the MCCCCP were left constant, even though the actual benefits will be greater when the proposed AF is implemented, as it will bring along benefits associated with the enhancement of the environmental services provided by the Chiveve River as a potential urban amenity. The economic evaluation of the MCCCCP showed net returns of US\$49.5 million and an Economic Internal Rate of Return (EIRR) of 18 percent. When investment costs associated with AF are included, the project still generates returns as high as US\$38 million and an economic internal rate of return of 14 percent. The sensitivity analysis shows that the costs of the investment financed under the AF could increase as much as three times and the project will still generate positive results.

(b) Additional benefits of reducing flood risk are expected with the AF by creating an attractive environment for community gathering and recreation, through: (i) the creation of a walking/biking pathway; (ii) the provision of public urban furniture, such as benches, recreational equipment for children and adults, lavatories; (iii) the support of economic activities that have the potential of generating revenues; (iv) irregular dumping would be reduced through the provision of garbage bins; and (iv) in general, landscaping solutions to create a urban amenity asset. From an economic point of view, open spaces such as parks and recreation areas have positive effects on nearby residential property values; reduction of diseases caused by pollution and waste contact; increase of revenues from small businesses located in the area, and potential increase of property taxes. To estimate some of these benefits, the following assumptions were made: (i) increase in property value will occur, yet there is no information of the magnitude of the increase; and so results were estimated for different levels; (ii) businesses make a daily revenue of US\$250<sup>9</sup>; and reduction of loss of

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<sup>9</sup> In the cost benefit analysis carried out by KfW, these values are estimated as the result of the tourism development and in the Chiveve River basin 1 and the loss of income due to malaria and diarrhea diseases. More detail in KfW

income due to malaria and diarrhea diseases is about US\$34 per household per year. Results show that the additional benefits to be obtained will be about US\$2 and 4 million, when property value increases by 5 or 10 percent respectively. These additional benefits will increase the EIRR to 15 percent.

(c) The green infrastructure investments will help making sustainable other government investments, as it will preserve the area as an environmental asset, reduce flood risk, by receiving, absorbing, and channeling excess water during flooding. If the AF is not implemented these investments could be at risk of not generating the expected benefits.

35. **Financial sustainability:** The prime location of the Chiveve River in the central part of the city offers a unique opportunity to include the private sector in the implementation of sustainable management models. Public and private partnership arrangements (PPPs) can be put in place to attract private capital and ensure a self-sufficient management scheme with no additional cost to the already limited municipal finances. Over the last few years, the Municipality of Maputo has implemented a series of PPPs for similar purposes resulting in both a better quality of public space (parks) and additional municipal revenues. The Municipality of Beira is well aware of the role to be played by the private sector and is keen to come up with a PPP arrangement for the management of the investment proposed by this AF. As such, the Municipality of Beira has requested support from the AF to develop and supervise an appropriate PPP, including market assessments of the economic potential offered by the area, the development and processing of the contractual arrangements, and strengthening the capacity of the municipality to supervise the contract implementation. Such an approach, if properly designed and implemented, will ensure the financial sustainability of the investment through adequate maintenance at no additional cost for the municipality. This will be the first pilot of this sort in Beira that may result in other opportunities for PPPs capitalizing on the city's emerging but dynamic private sector. In addition to this arrangement for the maintenance of the greenbelt, the operation and maintenance of the drainage functions will be carried out by the Beira Autonomous Sanitation Service. Responsible for operation and maintenance of storm water drainage and sewerage systems, this entity is fully operational and has support from the MCCCCP as well as from the GIZ operation.

### **Safeguards Triggered**

36. The following safeguard policies were triggered in the original project: Environmental Assessment OP/BP 4.01, and Involuntary Resettlement OP/BP 4.12. No additional safeguard policy is triggered by the activities proposed for the AF. No change has been made to the original project EA Category: B – Partial Assessment. The description of the new activities proposed for the AF, their environmental and social impacts and mitigation measures have been included in the updated Environmental and Social Management Framework (ESMF) and the Resettlement Policy Framework (RPF) prepared for the Original Project. The ESMF and RPF have been re-disclosed in October 2013. An Environmental and Social Impact Assessment (ESIA) / Environmental and Social Management Plan (ESMP) and /or Resettlement Action Plan (RAP) will be prepared during implementation, based on the ESMF and RPF. An Abbreviated RAP has been prepared, consulted upon and disclosed in August 2014. The overall environmental and social impacts of both the original project and the proposed additional financing is expected to be

positive for all the inhabitants of Beira and especially for those in low income neighborhoods where recurrent flooding is a serious health and safety issue, while also triggering losses of limited assets. Negative impacts, however, may arise during cleaning and improvements of man-made or natural drainage ways. On the original project, the most sensitive social issue will be the resettlement of an estimate of fifty households, and compensation for impacts on fences, latrines, fruit trees and similar structures and assets that may need to be temporarily removed or relocated in order to rehabilitate the man-made drainage canals. The activities proposed for the AF do not entail such sensitive social issues because the designs for the green infrastructure investments can be flexible and limited to the areas free from urban encroachment.

37. An environmental and social impact study has been prepared for the KfW supported activities. The main environmental issue raised is the disposal of the sludge to be removed from the Chiveve riverbed. Laboratory analyses were undertaken on ten samples of the sludge along the river section to assess contamination from heavy metals and chlorides. Overall, the parameters analyzed were found to be within acceptable limits of concentration. Two disposal sites were indicated by the Municipality of Beira, which were also found appropriate with basic preparation measures. Additional laboratory analyses to assess further parameters are being carried out in Germany.

38. Mangal. A group of 34 households, comprising 44 families, is located in the downstream section on the right bank of the Chiveve River floodplain, in an informal settlement called Mangal. They are living in a severely polluted location affected by frequent floods and highly prone to waterborne diseases. No potable water is available, and the municipal water supply cannot be extended to this area since residential use is not allowed in the area given the risks associated with frequent flooding. Water is drawn from a poorly dug well located in the Chiveve River flood plain, where ground water is saline and almost certainly highly contaminated with fecal coliforms because the Chiveve River is used as an open-air latrine. Houses are made of predominantly scavenged materials (wood, bamboo, plastic sheeting) or wood taken from the mangrove habitat along the lower Chiveve, and located in an environmental area where settlements cannot be formally authorized, therefore land titles cannot be provided. Although these households will not be adversely affected by either KfW's project or the proposed investments by the Bank in urban green space, the Municipality of Beira nevertheless is in the process of resettling these families to an area safe from floods and appropriate for urban settlements, irrespective of whether KfW's or the Bank's proposed project proceeds. The resettlement package offered includes 44 titled urban land plots (one per family) in the area known as Nhangau, located approximately 11km from the removal area. Replacement homes made of sturdy materials will be provided with water supply services and electricity, and are part of a new neighborhood being developed in this city expansion area. The 44 families have already chosen their respective urban plots, and preliminary land title documents have been signed identifying the urban plot in the settlement development plan. The resettlement is planned to be concluded by June 2015. The information is included on the ESIA report developed by KfW and reviewed by the Bank. The families' livelihoods, derived primarily from sales of goods in informal road-side stands or on ground cloths, can continue in an improved situation at a road-side market located about 3km from the resettlement site. The Municipality has agreed to provide means of transport for the resettled communities for ease of access to schools, clinics, and the road-side market. Detailed information on the resettlement is provided on the environmental and social impact study developed as part of the feasibility study prepared for the

KfW project, even though the works financed by the KfW project do not require resettlement of the families at Mangal.

39. Goto is a very large, densely populated informal area located upstream on the Chiveve river, which will be the southern-most part of the proposed greenbelt project. A few households are located on the right (east) bank of the Chiveve river in this area, with latrines and other non-residential structures on the edge of the bank. In this area of the proposed greenbelt project, the proposed bikeway and pedestrian walkway are located on the left (opposite) bank of the Chiveve river. Relocation of structures or households, therefore, in the Goto area is not needed to develop the green infrastructure investments. The Chiveve river, however, is used as a dumpsite for solid waste by the nearby residents of Goto, and this issue is being addressed under the KfW project to ensure sustainability of the improvements in the area. In a similar manner and for similar reasons, relocation of the Mangal residents by the Municipality for community health and safety reasons also benefits the sustainability of the proposed Bank-financed green infrastructure project, particularly because this area of the project (Section 1 in the preliminary design) has highest potential for significantly improved aesthetic and biodiversity value. Public consultation on the relocation of the Mangal residents has been conducted as part of the ESIA developed for the KfW activities.

40. The proposed green infrastructures investments under the AF will temporarily affect existing crudely assembled racks consisting of stick, bamboo, wire, string, and in some cases plastic sheeting, and used for displaying different types of articles sold by street vendors. Improved displays for these vendors are planned to be built as part of the green infrastructure investments in the area. A Resettlement Action Plan (RAP) or an Abbreviated Resettlement Action Plan (ARAP) will include the mechanism for handling the temporary disturbance to business and vendors. These economic activities are compatible with the green infrastructure investments, provided sanitary facilities are offered as well as appropriate solid waste collection and disposal services. During the green infrastructure construction phase, it is envisaged that groups of the street vendors can temporarily move a few meters away while the improvements in this site is underway, with no adverse impact on their economic activity. The detailed plan to prevent the green infrastructure investments affecting these street vendors livelihood will be prepared in consultation with the vendors, and integrated with the green infrastructure design phase, which will provide specific information on the investments to be undertaken as well as on the new facilities that will be made available to the street vendors.

### **Implementation Arrangements**

41. Implementation arrangements are expected to be the same as those used for MCCCCP. The MAE, and specifically its Directorate for Local Government Development (DNDA), is the implementing agency for Component 1. The Administration for Water and Sanitation Infrastructure (AIAS), a specialized semiautonomous agency under the supervision of the Ministry of Works and Public Services (MOPH), is the implementation agency for Component 2. As explained above, the proposed AF will finance activities to be included under the Component 2 of the original project. No significant change in AIAS implementation capacity would be required since the activities proposed for the AF would be implemented in the city of Beira where the original project already implements a number of activities. The implementation of the activities under the proposed AF will be coordinated in the context of the overall PPCR-financed

activities in Mozambique. To ensure this coordination becomes effective, AIAS will maintain the PPCR project coordination units in MICOA and MPD informed with respect to the fiduciary, technical, and safeguards issues related to the implementation of the AF activities. In addition, AIAS will report to the PPCR project coordination unit on the results of the PPCR-AF funded activities in order to contribute to the broader PPCR M&E results monitoring framework and lessons learned. Also, PPCR project coordination unit will be invited to participate in the supervision of the implementation of the proposed AF activities carried out by the Bank project team. Funds for financing Monitoring and Evaluation (M&E), knowledge sharing and coordination activities have been ensured through consultant contracts and/or operational costs. AIAS capacity to carry out environmental and resettlement activities has been strengthened. Two environmental /social specialists have been added to the team to handle the Bank financed projects implemented by AIAS. Also, two full time specialists (an environmental specialist and a resettlement specialist) are part of the key team in the consultant contract developing the designs for the rehabilitation of the drainage canals in Beira.

## **Risks and Results**

42. The original project main risks were associated with the project Component 1 and they addressed both the implementation agency risks and low municipal capacities for planning, management, and technical functions. The Component 1 implementation rating since the project became effective on July 18, 2012 has been satisfactory. The following risk was associated with original project Component 2: municipal capacities for operation and maintenance of urban infrastructure may not be adequate to ensure sustainability of investments. The proposed measure to mitigate this risk is the project support to the municipal sanitation entities to ensure dedicated revenue stream, and equipment for the infrastructure O&M. This risk and proposed measure are also associated with the proposed AF.

43. As detailed above, the current ESMF and RPF accommodate the additional activities and safeguard risks, which have been assessed as Substantial for the original project. As the subprojects get identified, the ESIA's and RAPs will be prepared, based on ESMF and RPF guidance, and publicly disclosed in Mozambique and the Bank Infoshop, following a set of public consultations and Bank clearance. With respect to fiduciary aspects, no change in the implementation agency capacity to continue to perform satisfactory is anticipated. Close supervision both by the Bank team will continue to be carried out to ensure that disbursement targets continue to be met.



**Annex 1: Revised Results Framework and Monitoring  
Mozambique Cities and Climate Change – Pilot Program for Climate Resilience**

<b>Project Development Objective (PDO): To strengthen municipal capacity for sustainable urban infrastructure provision and environmental management which enhance resiliency to climate related risks.</b>															
PDO Level Results Indicators *	Core	Unit of Measure	Baseline 2011	Cumulative Target Values**						Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)	Comments / rationale for change under the AF	
				2012	2013	2014	2015	2016	2017						2018
(i) Number of project beneficiaries, of which female (%) [core indicator] <sup>10</sup>	<input checked="" type="checkbox"/>	Number of persons  % female	0			100,000	1,000,000	1,500,000	1,800,000	2,050,000	annual	Survey	DNDA/AIAS	People in the 20 Municipalities targeted by Component 1 and people directly benefiting from the direct investments under Component 2. Percentage of females based on national demographic data.	Target values increased to reflect additional works
(ii) Percentage annual increases in aggregate municipal own-source revenues <sup>11</sup>	<input type="checkbox"/>	%	0	0	0	10	20	30	40		annual	Annual Municipal Financial Statements	MAE/DNDA/PMU	Increases aggregated across all participating municipalities.	Target values recalibrated

<sup>10</sup> Aligned with PPCR Core Indicator #5: Number of people supported by the PPCR to cope with the effects of climate change.

<sup>11</sup> Disaggregated data will be available at the project level by municipality for this and for other indicators where data is being aggregated; this will allow a detailed monitoring to assess which municipalities are meeting their targets and making progress and which ones will require further support to improve their performance.

(iii) Area provided with drainage services	<input checked="" type="checkbox"/>	Ha	0				30	90	640	1200	annual	Reports from supervising consultants	AIAS	Measures catchment of improved drainage	Rephrased to adjust to core indicator. Target values also increased to reflect additional works
<b>INTERMEDIATE RESULTS</b>															
<b>Intermediate Result (Component One): Increased municipal capacity to sustainably plan, finance and manage climate resilient urban development.</b>															
<i>Intermediate Result Indicator One:</i> Disaggregated list of investments by type and/or sector:	<input type="checkbox"/>	Physical count	NA since grants is demand driven.				__km	__km	Km		annual	Annual Municipal Grant Execution Reports	Municipalities verified	Aggregate across 20 munis of physical results from Municipal Performance Grants. Annual targets not predefined because demand driven. Include roads, trucks, buildings etc. If reported investments relate to core indicators, these will be captured in the ISR as part of project	No change
<i>Intermediate Result Indicator Two:</i> Number of municipalities	<input type="checkbox"/>	Number (of 20 munis)	na	na	na	5	8	11	15		annual	Annual Reports from municipalities verified	MAEDN	Grant funds available for approved municipal investment	No change

which have achieved at least 70% financial execution of their annual Municipal Performance Grant by 31 Dec.												by auditor	D A P M U	plans. Financial execution is funds disbursed to pay valid contracts.	
<i>Intermediate Result Indicator Three:</i> Percentage annual increases in aggregate number of land plots titled (DUATs)	<input type="checkbox"/>	%	To be available at Effectiveness	0	0	10	20	30	40		annual	Annual Reports from municipalities and TA, verified by auditor	M A E/ D N D A P M U	Increases aggregated across all participating municipalities. Assessments during yr 1 will provide baseline data	No change
<i>Intermediate Result Indicator Four:</i> Percentage increase in aggregate number of properties in municipal cadaster measured annually	<input type="checkbox"/>	%	To be available at Effectiveness	0	0	10	20	30	40		annual	Annual Reports from municipalities and TA, verified by auditor	M A E/ D N D A P M U	“Properties in municipal cadastre” defined as properties which have sufficient information for IPRA billing.	No change
<i>Intermediate Result Indicator Five:</i> Number of municipalities which have implemented a municipal	<input type="checkbox"/>	Number (of 20 munis)	0	0	0	1	2	6	12		annual	Progress Reports from municipalities and TA, verified by auditor	M A E/ D N D A P	“Implemented” defined as employing a computer based system to execute the municipal budget and	No change

financial management system (cumulative)													M U	produce accounting statements.	
<i>Intermediate Result indicator Six:</i> Number of municipalities with approved environmental and drainage plans (cumulative)	<input type="checkbox"/>	Number (of 20 munis)	0	0	0	0	1	2	4		annual	Progress Reports from municipalities, verified by auditor	M A E/ D N D A P M U	Urban Risk Assessments will identify priority municipalities where drainage and environmental 19gmt. plans are required to improve climate resiliency	No change
<b>Intermediate Result (Component Two): Increased municipal capacity to sustainably provide drainage services to at risk urban neighborhoods.</b>															
<i>Intermediate Result Indicator One:</i> Beira – drainage channels rehabilitated to control flood	<input type="checkbox"/>	Kms	0	-	-			1	8	9.5	annual	Progress Report from AIAS	AI A S	Extension of civil works to rehabilitate drainage channels to increase resilience to climate change	No change
<i>Intermediate Result Indicator Two (AF)</i> Beira natural drainage courses improved and protected	<input type="checkbox"/>	Kms	0					1	2	4	Annual	Progress Report from AIAS	AI A S	Extension of green infrastructure build	Added
<i>Intermediate Result Indicator Three</i> knowledge sharing activities to	<input type="checkbox"/>	Number (of events)	0					2	4		Annual	Progress Report from AIAS	AI A S	Number of knowledge sharing events carried out	Added (aligned with PPCR Core Indicator )

disseminate green infrastructure in urban areas as key adaptation investments which increase resilience to climate change impacts <sup>12</sup>																			
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<sup>12</sup> Aligned with PPCR Core Indicator #4: Extent to which vulnerable households, communities, businesses and public sector services use improved PPCR supported tools, instruments, strategies and activities to respond to climate variability or climate change

## **Annex 2 - Project Description**

### **Mozambique Cities and Climate Change – Pilot Program for Climate Resilience**

This Annex provides the full project description, including new activities proposed under the Additional Financing (Component 2 part 6 & 7).

The objective of the Project is to strengthen municipal capacity for sustainable urban infrastructure provision and environmental management which enhance resiliency to climate related risks.

#### **Component 1: Strengthening the municipal sector**

1. Increase municipal capacity to sustainably plan, manage and finance climate resilient urban development, including through the strengthening the Borrower's institutions underpinning its municipal system in order to improve sustainable decentralized financing and management of the urban environment and infrastructure.

(i) Local level support for improved municipal governance

(a) Municipal Performance Grants: Support Eligible Municipalities through the financing of Sub-Projects, by providing Municipal Performance Grants.

(b) Improved Urban Planning and Land Use Management: Support including through: (A) the carrying out of climate vulnerability assessments, basic spatial planning studies and development and implementation of urban land management Instruments in all Municipalities as well as urban environmental and surface water management Instruments in those Municipalities vulnerable to climate related flooding and erosion; (B) the development and dissemination of methodologies for urban planning and land use and environmental management; and (C) the carrying out of training sessions for municipal staff and technicians.

(c) Enhancement of Municipal Financial Sustainability: Support to improve financial management and enhance municipal revenues, including through the: (A) development and dissemination of methodologies for revenue administration; (B) carrying out of training sessions in revenue administration and financial management for municipal staff; (C) provision of advisory services and equipment to strengthen the institutional capacity of the municipalities; and (D) development and implementation of financial and management systems.

(ii) National Level Support for Improved Municipal Governance

2. Strengthen key national institutions regulating and supporting the municipal system, by means of:

- (a) Capacity strengthening of the Ministry of State Administration and the Ministry of Finance to monitor the performance of the municipalities and develop improved intergovernmental and municipal policies and systems including through the development and implementation of the national policy and regulatory framework for municipal governance.
- (b) Strengthening of ANAMM to provide services to its member municipalities including through capacity building support activities and policy and regulatory advocacy on municipal and intergovernmental issues.
- (c) Establishment and operation of a PIU in DNDA to support the coordination and management of the Part A of the Project including through the provision of technical assistance, training, audits, goods and operating costs.

**Component 2: Enhancing resilience of strategic municipal coastal cities**

3. Enhancement of selected municipalities, including those in Beira, Nacala and Maputo Metropolitan Area for sustainable resilience to weather-related environmental threats, as follows:

- (i) Identification of key investment priorities in selected municipalities to strengthen resilience to climate related floods and erosion through the carrying out of: (a) an assessment of current needs, including the selection of the municipalities to be targeted, and projecting trends and scenarios taking into account climate change considerations; and (b) training sessions for the technical teams of AIAS on climate change impacts on sanitation.
- (ii) Strengthening Resilience of the municipalities of Beira to control floods, including through the: (a) development of a comprehensive study on integrated urban water management; (b) design and supervision of drainage rehabilitation works; (c) carrying out of drainage rehabilitation works including the relining of the primary channel (central) of Beira's drainage system; (d) carrying out of rehabilitation works affected by the works referred to in (c) of this sub-paragraph including fences, latrines, verandas, side-walks as well as provision of resettlement houses provided with basic infrastructure; (e) provision of advisory services and equipment to strengthen the institutional capacity of Beira's Autonomous Sanitation Service; and (f) carrying out of green infrastructure support.
- (iii) Strengthening the resilience of the municipality of Nacala to control erosion, including through the: (a) design and supervision of erosion control and drainage rehabilitation works, including associated environmental and social support; (b) carrying out of erosion control and drainage rehabilitation works, including those related to the three (3) primary channels of Nacala's drainage system; and (c) provision of advisory services

and equipment to strengthen the institutional capacity of Nacala municipality for managing drainage infrastructure and erosion control.

- (iv) Strengthening the Resilience of Maputo Metropolitan Area to control floods including through the development of a master drainage and sanitation plan for the area.
- (v) Establishment and operation of the PIU in AIAS to support the coordination and management of Part B of the Project including through the provision of technical assistance, audits, goods and operating costs.
- (vi) Improved management and development of natural drainage, including : (a) mapping natural drainage areas in Beira; (b) preparing green infrastructure detail designs for selected natural drainage areas, supervision of the implementation; (c) developing sustainable maintenance and management models; (d) carrying out community outreach campaigns; (e) undertaking scoping studies of green infrastructure assets in five other municipal areas which shall serve as for preparing guidelines for the Ministry of State Administration and municipalities for the integration of green infrastructure management into municipal planning and development, (f) developing and implementing knowledge sharing and dissemination activities for the Recipient's municipalities; and (g) implementation of green infrastructure investments.
- (vii) Disaster contingency financing: establishment of an immediate response mechanism to facilitate access to rapid financing for disaster response in the aftermath of a national disaster to be triggered through formal declaration by the Recipient of a national or regional state of emergency.



**Annex 3 – Project Costs (Original Credit + AF)**  
**Mozambique Cities and Climate Change – Pilot Program for Climate Resilience**

Project Costs (Original Credit + AF) <i>Components and Subcomponents</i>	<i>Original Credit (US\$Million)</i>	<i>Additional Financing (US\$Million)</i>	<i>Original credit + AF</i>
	<i>IDA</i>	<i>PPCR / Strategic Climate Fund</i>	<i>IDA + PPCR / Strategic Climate Fund</i>
<b>Component 1 – Strengthening the Municipal Sector</b>	<b>35.00</b>	<b>0.00</b>	<b>35.00</b>
(i) Local level support for improved municipal governance	27.50	0.00	27.50
(ii) National level support for improved municipal governance	7.50	0.00	7.50
<b>Component 2: Enhancing Resilience of Strategic Eligible Municipalities in Coastal Cities</b>	<b>85.00</b>	<b>15.75*</b>	<b>100.75</b>
(i) Identification of key investment priorities	0.60	0.00	0.60
(ii) Strengthening resilience of the municipality of Beira	61.90	0.00	61.90
(iii) Strengthening resilience of the municipality of Nacala	6.40	0.00	6.40
(iv) Strengthening resilience of the municipality of Maputo	12.30	0.00	12.30
(v) Establishing and operation of a PIU in AIAS	3.80	1.00	4.80
(vi) Improving natural drainage management in the city of Beira	0.00	14.75	14.75
(vi) Disaster recovery contingency funds (zero-budget)	0.00	0.00	0.00
<b>Total</b>	<b>120.00</b>	<b>15.75</b>	<b>135.75</b>

\*US\$ 6.50 million (Loan); US\$ 9.25 million (grant)

**Annex 4 - Operational Risk Assessment Framework (ORAF)  
Mozambique Cities and Climate Change – Pilot Program for Climate Resilience**

<b>Project Stakeholder Risks</b>				
<b>Stakeholder Risk</b>		<b>Rating: Moderate</b>		
<b>Description :</b> a1. Possible coordination issues among donors funding municipal projects could lead to multiple standards for municipal systems  a2: Possible lack of coordination among donors funding activities to increase the city of Beira resilience to climate related impacts could weaken this comprehensive effort being provided to the city.	<b>Risk Management :</b> a1. Devt Partner (DP) Decentralization Working Group has been in place and will continue to exist through the life of the project aiming to facilitate coordination and support to local authorities. a2. DPs have established a strong coordination to ensure appropriate integration of activities planned and under implementation aiming at strengthening Beira resilience to floods. The proposed AF will finance activities contributing to the DPs coordination.			
	<b>Resp:</b> Bank, Partners and GoM	<b>Stage:</b> Implementation	<b>Due Date :</b> project closing date	<b>Status:</b> Ongoing
b. Central government institutions responsible for decentralization programs often face conflicting incentives; this may lead to weakened or inconsistent support for strengthening municipal governance.	b1. Policy dialogue with central government will strengthen the regulatory and institutional bases which enable dynamic municipal governance. b2. Capacity building for municipalities to improve performance and sustainability will increase their legitimacy as institutions for local governance and urban management.			
	<b>Resp:</b> Municipalities	<b>Stage:</b> Implementation	<b>Due Date :</b> project closing date	<b>Status:</b> Ongoing
<b>Implementing Agency Risks (including fiduciary)</b>				
<b>Capacity</b>		<b>Rating: Substantial</b>		
<b>Description :</b> a. GoM implementing agency for Comp 1 has little project management capacity and has lost past personnel who understood Bank procedures through work on prior Bank projects. b. Low municipal capacities for planning, management, and technical functions related to focal areas in urban	<b>Risk Management :</b> a. PIU staffed by contracted personnel with project management and WB project experience will compensate for low ministerial capacities. b. Strong emphasis on local govt management and reporting systems and staff training will strengthen municipalities' management and technical capacities. c. Project will support establishment and strengthening of municipal sanitation agency with dedicated revenue stream, staff, and equipment for infrastructure O&M. d. The PIU will be assisted by an engineering consulting company with expertise in the execution hydraulic works. The selection process is ongoing and contract expected to be signed by October 2013. Also, it is proposed the AF finances the			

<p>planning ns municipal finances</p> <p>c. Municipal capacities for operation and maintenance of urban infrastructure are not adequate to ensure sustainability of investments</p> <p>d. Current satisfactory performance of the GoM implementing agency for Comp 2 might be negatively affected because the proposed AF will increase the number of activities to be implemented and also will require specific technical skills which the current team does not address.</p>	<p>cost of consultant with appropriate technical expertise to complement the implementation agency team.</p>			
	<p><b>Resp:</b> GoM</p>	<p><b>Stage:</b> Implementation</p>	<p><b>Due Date:</b> N/A</p>	<p><b>Status:</b> Ongoing</p>
<p><b>Governance</b></p>	<p><b>Rating: Moderate</b></p>			
<p><b>Description :</b></p> <p>a. Municipal sector is characterized by limited technical capacity, lack of systematic monitoring data and analysis, weak systems for ensuring fiduciary compliance, and absence of performance incentives.</p> <p>b. Ensuring appropriate central and municipal government coordination.</p>	<p><b>Risk Management :</b></p> <p>a. Project will support not only strengthening of municipal management capacities but also external controls through transparency of reporting and municipal audits as well as the establishment of performance based incentives for improved management.</p> <p>c: National policies define institutional arrangements and procedures aiming at ensuring proper coordination between central and municipal governments. The project has followed these policies and appropriate coordination levels are pursued through all the project activities.</p>			
	<p><b>Resp:</b> MAE and AIAS</p>	<p><b>Stage:</b> Implementation</p>	<p><b>Due Date:</b> N/A</p>	<p><b>Status:</b> Ongoing</p>
<p><b>Project Risks</b></p>				
<p><b>Design</b></p>	<p><b>Rating: Moderate</b></p>			
<p><b>Description :</b></p> <p>a. Strong focus on drainage investments managed by central govt may reduce incentives for sustainable O&amp;M by municipalities.</p> <p>b. Complexity of implementing municipal capacity building in 19 diverse municipalities may lead to dilution of effort and limited impact.</p> <p>c. Lack of clarity regarding technical standards for municipal financial management systems (IFMIS) may lead</p>	<p><b>Risk Management :</b></p> <p>a. GoM policy for autonomous municipal agencies for O&amp;M w specific revenue base defines foundation for sustainability of drainage infrastructure, following the example of Beira.</p> <p>b. Use by project TA of standard technical packages for multiple municipalities will facilitate economies of effort and horizontal learning among municipal staff, officials and communities.</p> <p>c. Policy dialogue with Ministry of Finance and support for MoF leadership will provide basis for a clear technical standard for municipal IFMIS; if adequate framework for municipal IFMIS is not established, funds may be reallocated for other activities.</p> <p>d. Performance element in municipal grants will strengthen incentives for producing measurable results and visible benefits to the public</p> <p>e. The ongoing project and the proposed AF finance activities to strengthen O&amp;M capacity at the municipal level.</p>			

<p>to multiple systems and duplication or wasted effort.  d. Municipal officials frequently focus on maximizing inputs rather than on service provision often limits project results and public benefits  e. Strong focus on drainage investments managed by central government may reduce incentives for sustainable O&amp;M by municipalities.</p>	<p><b>Resp:</b> GoM and municipalities</p>	<p><b>Stage:</b> Implementation</p>	<p><b>Due Date:</b> N/A</p>	<p><b>Status:</b> Ongoing</p>
<p><b>Social &amp; Environmental</b></p>	<p><b>Rating: Moderate</b></p>			
<p><b>Description :</b>  a. Rights of way for drainage channels may involve compensation for private structures and property affected (latrines, fences, part of a veranda), or the loss of an entire construction used for residential or commercial purposes.  b. Low municipal capacities for identifying and mitigating environmental and social risks and impacts.  c. Possible conflicts among private parties or between private parties and municipalities over land may result from municipal efforts to increase municipal land registration and titling.  d: It is not expected the proposed AF will require compensations for private structures and property affected (latrines, fences, part of a veranda) or the loss of an entire construction used for residential or commercial purposes. The technical designs for the investments to protect and improve natural drainage courses will be limited to the areas still free from urban encroachment.</p>	<p><b>Risk Management :</b>  a. The few large infrastructure investments will include funding and TA for safeguard compliance. ESMF and RPF provide adequate procedures for impact mitigation and compensation. Adequate project support to the resettlement process (as outlined in the RPF and to be followed up by a RAP) to ensure its satisfactory implementation and compliance with Bank policies.  b1. Investments funded by Municipal Performance Grants will be small and technically not complex. Simple safeguard screening procedures will identify any investments which present significant risks.  b2. Training for municipal staff in safeguard compliance will be provided by PIU; PIU staff will also monitor safeguard compliance by municipalities in use of project financed grants.  c. Land registration and titling methodologies to be employed will include extra-judicial conflict resolution mechanisms, including informal mediation and potentially arbitration mechanisms.  d: The project RPF will be updated to include the proposed AF and will be applied in case the AF affects any structure.</p>	<p><b>Stage:</b> Implementation</p>	<p><b>Due Date:</b> N/A</p>	<p><b>Status:</b> Ongoing</p>
<p><b>Program &amp; Donor</b></p>	<p><b>Rating: Moderate</b></p>			

<p><b>Description :</b></p> <p>a. Sustainable impact of drainage investments in Beira and Nacala requires broader municipal capacity building than sectoral issues supported by AIAS, especially for urban environmental management and general municipal finances.</p> <p>b. Potential proliferation of multiple municipal IFMIS systems through various aid-supported projects leading to inefficiencies and threats to system sustainability.</p> <p>c. Aid-financed assistance for municipal capacity building through multiple aid-supported projects risks coverage gaps and inconsistent technical approaches across various municipalities.</p> <p>d: Sustainable impact of drainage investments in Beira and Nacala requires broader municipal capacity building than sectoral issues supported by AIAS, especially for urban environmental management and general municipal finance.</p>	<p><b>Risk Management :</b></p> <p>a. Coordination with PDA project, as well as with several other donors assisting on climate change related issues, to ensure that project's TA to Beira and Nacala municipalities in environmental management and municipal finances do ensure broader institutional performance improvements which enhance local capacity for resilience to climate related risks.</p> <p>b. Support for leadership by Ministry of Finance to define policy and national standard for municipal IFMIS, linked to potential project financed TA for system devt and/or implementation.</p> <p>c1. Participation in GoM Decentralization Working Group to coordinate support for municipalities and harmonize technical methodologies</p> <p>c2. Technical coordination between Bank-funded project and donor funded PDA project facilitates harmonization of technical approaches and sharing of technical instruments for municipal capacity building.</p> <p>d: Coordination with PDA project, as well as with several other donors assisting on climate change related issues, to ensure that project's TA to Beira and Nacala municipalities in environmental management and municipal finances do ensure broader institutional performance improvements which enhance local capacity for resilience to climate related risks.</p>			
	<p><b>Resp:</b> GoM</p>	<p><b>Stage:</b> Implementation</p>	<p><b>Due Date:</b> N/A</p>	<p><b>Status:</b> Ongoing</p>
<p><b>Delivery Monitoring &amp; Sustainability</b></p>	<p><b>Rating: Moderate</b></p>			
<p><b>Description :</b></p> <p>a. Slow pace of municipal reform and capacity development may constrain the capacity of municipalities to achieve sustainability targets during project period</p> <p>b. Weak local private sector market for TA in municipal financial management and urban planning</p>	<p><b>Risk Management :</b></p> <p>a. Modest and gradually increasing performance targets tied to incremental implementation of technical assistance activities allow adjustment of the ambition of project targets to low level of institutional capacity among many beneficiary municipalities and enhance sustainability of performance gains</p> <p>b1. Major project-funded TA will be bundled in larger contacts to make them more attractive for international providers who offer greater expertise in urban planning and municipal finances.</p> <p>b2. Project design foresees engagement of university faculty members from the well-respected Architecture and Urban Planning Faculty who have extensive professional experience with urban planning and environmental management in the legal, institutional, physical and social contexts of Mozambican municipalities.</p> <p>b3. Project will also support the contributions of public sector specialists from the GoM Revenue Authority (under MF) and Administrative Court to enhance the quality of municipal finances.</p>			

	<b>Resp:</b> MAE	<b>Stage:</b> Implementation	<b>Due Date:</b> N/A	<b>Status:</b> Under preparation
<b>Other: Technical Risk</b>	<b>Rating: Moderate</b>			
<b>Description :</b> a. Municipal IT systems, including IFMIS, require complex technical solutions for system design, implementation, operation, and maintenance/support. There may be significant risks of unsustainable IT based systems at municipal level.	<b>Risk Management :</b> a1. Bank financed consultancy during preparation provided independent technical assessment of PDA-supported IFMIS “SGM” a2. Dialogue with GoM (MAE and MF) and PDA regarding establishing technical and institutions preconditions for SGM rollout will reduce risks of further investments. If necessary, project support will be delayed until these issues are clarified and adequately addressed a3. Close collaboration with MF technical unit (CEDSIIF) will ensure technical adequacy and regulatory compliance of any project-supported IFMIS (SGM or other), supplemented as needed by independent project financed consultants.			
	<b>Resp:</b> MAE	<b>Stage:</b> Implementation	<b>Due Date:</b> N/A	<b>Status:</b> Under preparation
<b>Overall Risk Following Review</b>				
<b>Implementation Risk Rating: Substantial</b>				
<b>Comments:</b> A substantial risk rating was selected due to implementation difficulties experienced by other on-going IDA projects in the urban sector in Mozambique.				