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IDA/R2016-0043/1

March 10, 2016

Closing Date: Tuesday, March 29, 2016 at 6 p.m.

FROM: Vice President and Corporate Secretary

Mozambique - Water Services and Institutional Support Project II

Project Appraisal Document

Attached is the Project Appraisal Document regarding a proposed credit and a proposed grant to Mozambique for the Water Services and Institutional Support Project II (IDA/R2016-0043), which is being processed on an absence-of-objection basis.

Distribution:

Executive Directors and Alternates
President
Bank Group Senior Management
Vice Presidents, Bank, IFC and MIGA
Directors and Department Heads, Bank, IFC and MIGA

Document of
The World Bank

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Report No: PAD1453

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT
IN THE AMOUNT OF SDR 48.2 MILLION
(US$66.5 MILLION EQUIVALENT)
AND
PROPOSED GRANT
IN THE AMOUNT OF SDR 17.1 MILLION
(US$23.5 MILLION EQUIVALENT)

TO THE

REPUBLIC OF MOZAMBIQUE
FOR A

WATER SERVICES AND INSTITUTIONAL SUPPORT PROJECT II

March 8, 2016

Water Global Practice
Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective as of February 29, 2016)

Currency Unit	=	New Mozambique Metical (MZN)
MZN 45.25	=	US$1
US$ 1.38	=	SDR 1

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AdeM	Maputo Regional Water Utility *(Águas da Região de Maputo)*
CPF	Country Partnership Framework
CPS	Country Partnership Strategy
CRA	Water Regulatory Council *(Conselho de Regulação de Águas)*
CORAL	Local Regulatory Commission *(Comissão Reguladora Local)*
DA	Designated Account
DALY	Disability-Adjusted Life Years
DSCR	Debt Service Coverage Ratio
ERR	Economic Rate of Return
ESMF	Environmental and Social Management Framework
FIPAG	Water Supply Asset Holding and Investment Fund *(Fundo de Investimento e Património do Abastecimento de Água)*
FM	Financial Management
GMWSP	Greater Maputo Water Supply Project
GoM	Government of Mozambique
GRS	Grievance Redress System
IBNET	International Benchmarking Network Methodology
ICB	International Competitive Bidding
ICT	Information and Communication Technology
IFC	International Finance Corporation
IRR	Internal Rate of Return
ISP	Implementation Support Plan
IVA	Independent Verification Agent
MEF	Ministry of Economy and Finance
MZN	Metical – National Currency
M&E	Monitoring and Evaluation
NCB	National Competitive Bidding
NPV	Net Present Value
NRW	Non-revenue Water
NWDP	National Water Development Project
OCHA	Office of Coordination for Humanitarian Affairs
PDO	Project Development Objective
PQG	Five-Year Plan (*Programa Quinquenal do Governo*)
QCBS	Quality- and Cost-Based Selection

RECO	Responding to Customer Expectations *(Respondendo as Expectativas dos Consumidores)*
RPF	Resettlement Policy Framework
WASIS	Water Services and Institutional Support Project
WHO	World Health Organization
YLL	Years of Life Lost

Regional Vice President:	Makhtar Diop
Country Director:	Mark Lundell
Acting Senior Global Practice Director:	Jennifer J. Sara
Practice Manager:	Jonathan S. Kamkwalala
Task Team Leader:	Luiz Claudio Martins Tavares
Task Team Leader:	David Malcolm Lord

MOZAMBIQUE
Water Services and Institutional Support Project II

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PAD DATA SHEET

Mozambique

Water Services & Institutional Support II (P149377)

PROJECT APPRAISAL DOCUMENT

AFRICA

Report No.: PAD1453

Basic Information		
Project ID P149377	EA Category B - Partial Assessment	Team Leader(s) Luiz Claudio Martins Tavares,David Malcolm Lord
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ] Financial Intermediaries [ ] Series of Projects [ ]	
Project Implementation Start Date 29-Mar-2016	Project Implementation End Date 31-Aug-2022	
Expected Effectiveness Date 30-Sep-2016	Expected Closing Date 31-Oct-2022	
Joint IFC No		

Practice Manager/Manager	Senior Global Practice Director	Country Director	Regional Vice President
Jonathan S. Kamkwalala	Jennifer J. Sara	Mark R. Lundell	Makhtar Diop

Borrower: Ministryof Economy and Finance			
Responsible Agency: Government of Mozambique			
Contact:	Adriano Maleiane	Title:	Minister
Telephone No.:	25821490006	Email:	gcimagem@atm.gov.mz

Project Financing Data(in USD Million)					
[ ]	Loan	[X]	IDA Grant	[ ]	Guarantee
[X]	Credit	[ ]	Grant	[ ]	Other

Total Project Cost:	146.00	Total Bank Financing:	90.00
Financing Gap:	56.00		

Financing Source	**Amount**
BORROWER/RECIPIENT	0.00

International Development Association (IDA)	66.50
IDA Grant	23.50
Total	90.00

Expected Disbursements (in USD Million)

Fiscal Year	2017	2018	2019	2020	2021	2022	2023			
Annual	1.00	2.00	20.00	24.00	20.00	19.00	4.00			
Cumulative	1.00	3.00	23.00	47.00	67.00	86.00	90.00			

Institutional Data

Practice Area (Lead)

Water

Contributing Practice Areas

Cross Cutting Topics

[ ] Climate Change
[ ] Fragile, Conflict & Violence
[ ] Gender
[ ] Jobs
[ ] Public Private Partnership

Sectors / Climate Change

Sector (Maximum 5 and total % must equal 100)

Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Water, sanitation and flood protection	Water supply	100		
Total		100		

☑ I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.

Themes

Theme (Maximum 5 and total % must equal 100)

Major theme	Theme	%
Urban development	Urban services and housing for the poor	100
Total		100

Proposed Development Objective(s)

The objectives of the Project are to: (i) Increase water service coverage in key cities of Mozambique's territory; (ii) Strengthen the institutional and regulatory capacity for water supply services in the northern, central and southern regions of Mozambique's territory; and (iii) Support Mozambique to respond promptly and effectively to an Eligible Crisis or Emergency.

Components

Component Name	Cost (USD Millions)
Component 1: Rehabilitation and Expansion of Water Supply Production and Distribution	116.10
Component 2: Institutional Support	18.90
Component 3: Output-Based Payments for Low-Income-Household Connections	6.00
Component 4: Contingent Emergency Response	0.00
Component 5: Capacity Building and Operational Support to CRA	5.00

Systematic Operations Risk- Rating Tool (SORT)	
Risk Category	**Rating**
1. Political and Governance	Moderate
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	Low
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Moderate
6. Fiduciary	Moderate
7. Environment and Social	Low
8. Stakeholders	Low
9. Other	Moderate
OVERALL	Moderate

Compliance		
Policy		
Does the project depart from the CAS in content or in other significant respects?	Yes [ ]	No [X]
Does the project require any waivers of Bank policies?	Yes [ ]	No [X]
Have these been approved by Bank management?	Yes [ ]	No [ ]
Is approval for any policy waiver sought from the Board?	Yes [ ]	No [X]
Does the project meet the Regional criteria for readiness for implementation?	Yes [X]	No [ ]

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	**X**	
Natural Habitats OP/BP 4.04		**X**
Forests OP/BP 4.36		**X**
Pest Management OP 4.09		**X**
Physical Cultural Resources OP/BP 4.11		**X**
Indigenous Peoples OP/BP 4.10		**X**
Involuntary Resettlement OP/BP 4.12	**X**	

Safety of Dams OP/BP 4.37		**X**
Projects on International Waterways OP/BP 7.50	**X**	
Projects in Disputed Areas OP/BP 7.60		**X**

Legal Covenants

Name	Recurrent	Due Date	Frequency
Maintenance of Adequate Cost-Recovery	**X**		Yearly

Description of Covenant

Schedule 2. Section V. A. (a) - The recipient shall ensure that: the tariffs for the water systems under the responsibility of the Water Supply Asset Holding and Investment Fund (Fundo de Investimento e Patrimonio do Abastecimento de Agua (FIPAG) shall reflect the principle of full cost-recovery and shall be sufficient to cover operating expenses, depreciation, and cost of capital in a reasonable time horizon for all said systems. These tariffs shall be assessed yearly to ensure that they satisfy these requirements.

Name	Recurrent	Due Date	Frequency
Maintenance of Adequate Cost-Recovery	**X**		Yearly

Description of Covenant

Schedule 2. Section V. A. (b) - The recipient shall ensure that: within 12 months following the mid-term review, measures shall be taken to cover the financing needs referred to in (a) as necessary.

Name	Recurrent	Due Date	Frequency
Maintenance of Adequate Cost-Recovery	**X**		Yearly

Description of Covenant

Schedule 2. Section V. A. (h) - The recipient shall ensure that: the terms and conditions of the Subsidiary Agreement between FIPAG and the recipient with regard to financing shall have the same terms and conditions as the Financing Agreement between IDA and Mozambique, and the respective amounts shall be converted to Meticais at exchange rates applicable at the time of disbursement of the relevant proceeds of the Financing to FIPAG.

Name	Recurrent	Due Date	Frequency
Contracts with the four regional utilities to operate the water supply assets	**X**		Yearly

Description of Covenant

Schedule 2. Section V. A. (c) - The recipient shall ensure that: the Regional Utilities have been incorporated as corporations under the laws of the Recipient by no later than November 1, 2016.

Name	Recurrent	Due Date	Frequency
Contracts with the four regional utilities to operate the water supply assets	**X**		Yearly

Description of Covenant

Schedule 2. Section V. A. (d) - The recipient shall ensure that: FIPAG maintains at all times during the Project, contracts with the Regional Utilities to operate the water supply assets under FIPAG's responsibility; the said contracts to address the financial obligations undertaken by FIPAG under various loans and credits extended to FIPAG and the sustainability of the future investments in the water supply systems, including any applicable lease fees payable to FIPAG.

Name	Recurrent	Due Date	Frequency

Contracts with the four regional utilities to operate the water supply assets	**X**		Yearly

Description of Covenant

Schedule 2. Section V. A. (e) - The recipient shall ensure that: an escrow account has been established for each Regional Utility, into which all revenues from the provision of services shall be deposited, for the purpose of payment of applicable lease fees and operator tariff.

Name	**Recurrent**	**Due Date**	**Frequency**
Water tariffs review	**X**		Yearly

Description of Covenant

Schedule 2. Section V. A. (f) - The recipient shall ensure that: FIPAG submits to CRA, by August 31 of each year, a proposal for tariff revision based on the audited expenses of the prior Financial Year, with reasonable projections of the cost of service, including operating expenses, applicable depreciation, and cost of capital, for the following three Financial Years for each of the Regional Utilities.

Name	**Recurrent**	**Due Date**	**Frequency**
Water tariffs review	**X**		Yearly

Description of Covenant

Schedule 2. Section V. A. (g) - The recipient shall ensure that: CRA reviews and issues a resolution annually on the proposed tariff revision and reasonable projections of tariffs for the following three Financial Years by November 30 of each year, even if the adjustment of tariffs approved by CRA is zero. Should there be an increase in tariffs; CRA shall publish a resolution in the Official Gazette no later than December 31 of each year, with implementation of the new tariff by March 1 of the following year.

Conditions

Source Of Fund	**Name**	**Type**
IDA	FIPAG and CRA Subsidiary Agreements	Effectiveness

Description of Condition

V.5.01. (a) & (b) - Subsidiary Agreements have been executed on behalf of the recipient and of each Project Implementing Entity.

Source Of Fund	**Name**	**Type**
IDA	Project Implementation Manual	Effectiveness

Description of Condition

V.5.01. (c) - The Recipient has adopted the Project Implementation Manual, in form and substance satisfactory to the Association.

Source Of Fund	**Name**	**Type**
IDA	Hiring of the Independent Verification Agent	Disbursement

Description of Condition

Schedule 2. Section IV.B.1 (b) - With respect to Component 3, no withdrawals shall be made before the independent verification agent has been hired in a manner satisfactory to the Association and upon submission to the Association to its satisfaction of the evidence mentioned n the PIM.

Source Of Fund	**Name**	**Type**
IDA	Emergency Expenditures under Component 4	Disbursement

Description of Condition
No withdrawal shall be made: (c) under Category (4) of the table of the disbursement table in the Financing Agreement for Emergency Expenditures under Component 4 of the Project, unless and until IDA is satisfied, and notified the recipient of its satisfaction, that all of the conditions (stated in the same para) have been met in respect of said activities.

Team Composition

Bank Staff

Name	Role	Title	Specialization	Unit
Luiz Claudio Martins Tavares	Team Leader (ADM Responsible)	Lead Water and Sanitation Specialist		GWADR
David Malcolm Lord	Team Leader	Senior Water Supply and Sanitation Specialist		GWA03
Antonio L. Chamuco	Procurement Specialist (ADM Responsible)	Senior Procurement Specialist		GGO07
Elvis Teodoro Bernado Langa	Financial Management Specialist	Financial Management Specialist		GGO13
Christian Borja-Vega	Team Member	Economist		GWASP
Kristine Schwebach	Safeguards Specialist	Senior Social Development Specialist		GSU07
Lucson Pierre-Charles	Team Member	Program Assistant		GWA01
Luis M. Schwarz	Team Member	Senior Finance Officer		WFALA
Luz Meza-Bartrina	Counsel	Senior Counsel		LEGAM
Maria Isabel Nhassengo-Massingue	Team Member	Procurement Assistant		AFCS2
Nuno Maria Brilha Vilela	Safeguards Specialist	Consultant		GENDR
Odete Duarte Muximpua	Team Member	Operations Analyst		GWASA
Paulo Jorge Temba Sithoe	Safeguards Specialist	Environmental Specialist		GEN01
Rildo Santos	Team Member	Language Program Assistant		GSU13

Extended Team

Name	Title	Office Phone	Location
Elisabeth Sherwood	Consultant		Washington

Locations					
Country	**First Administrative Division**	**Location**	**Planned**	**Actual**	**Comments**
Mozambique	Sofala	Dondo	**X**		
Mozambique	Cabo Delgado	Pemba	**X**		
Mozambique	Sofala	Beira	**X**		

Consultants (Will be disclosed in the Monthly Operational Summary)

Consultants Required? Consulting services to be determined

I. STRATEGIC CONTEXT

A. Country Context

1. Mozambique has seen substantial economic growth since the end of its devastating 15-year-long civil war in 1992. Between 1993 and 2013, real gross domestic product growth averaged 7.4 percent annually. The early years of this growth was the result of post-conflict investment in infrastructure and agriculture. More recently, this growth was generated from high foreign direct investment in large, rapidly expanding extractive industries and related infrastructure investments, with limited linkages to local economies.

2. Despite this strong economic growth, Mozambique remains one of the poorest countries in the world, ranking 178 out of 187 countries in the 2013 Human Development Index. Poverty has fallen only slightly, from 56 percent in 2003, to 52 percent in 2009. Nearly 60 percent of the population lives on less than US$1.25 per day (2008). Among numerous other statistics confirming the country's relative poverty, inadequate water supply and sanitation results in regular cholera outbreaks (on average 7,500 cases per year), widespread diarrheal disease (on average 715,000 reported cases per year), high child mortality (108 per 1,000 live births) and stunting in children under the age of five years (43 percent)[1]. The burden of water- and sanitation-related diseases is heavier in some of Mozambique's principal cities, with 20 percent of cholera cases and 6 percent of diarrheal cases in the last five years concentrated in the cities of Pemba, Tete and Beira. The World Health Organization (WHO) estimates that approximately 17 percent of under-five deaths in Mozambique are the result of diarrheal diseases, the largest single cause of childhood deaths.

B. Sectoral and Institutional Context

3. Urban water supply in Mozambique has improved dramatically over the past decade. The Government began to undertake serious water policy reforms in 1998, when it first set out its policy of a delegated management framework for the sector. Under the policy, water supply assets remain the property of the Government, to be managed by a state-owned asset holding company, while water supply systems are operated under contract by independent providers, on a commercial basis.

4. The reform process has been guided by the Government's water sector policy, including the delegated management framework, and has involved the creation of an institutional landscape that promotes: (a) a clear separation of functions (policy, investments, operation and service regulation); (b) autonomy, local/regional accountability and efficiency in service delivery; and (c) full cost-recovery and financial sustainability. The long-term, strategic objectives of the sector reforms are to achieve universal coverage, to support independence through enabling self-financing or private-sector financing of investments, and to create robust institutional structures and supporting mechanisms that respond to local demands for sustainable water service delivery.

5. Under the first phase of these reforms, the Government established an asset holding company – the Water Supply Asset Holding and Investment Fund (*Fundo de Investimento e Património do Abastecimento de Água* (FIPAG)) – for the water supply assets of large urban areas, and established an independent water regulator – the Water Regulatory Council (*Conselho de Regulação de Águas* (CRA)). Most large secondary and tertiary city water systems are currently operated by FIPAG.

[1] Disease data from Ministry of Health and mortality data from National Statistics Institute (MICS 2008)

6. In November 2011, an update of the water supply policy and strategy was approved by the council of ministers. The strategy envisages 80 percent service coverage for the urban population by 2025, reaffirms the delegated management framework, promotes commercial sustainability in the operational regions of FIPAG, and supports local private-sector involvement in water supply operations and capacity building. Under the proposed support, FIPAG will establish three autonomous, decentralized, regional utilities (north, central and south), each responsible for water supply in five to seven cities.

7. The World Bank has played a key role in supporting the reforms outlined above and in financing key capital investments. In 1998, the Bank financed the first National Water Development Project (NWDP), and later financed its follow-on, the NWDP II. These projects focused investments in the five major cities of Maputo, Beira, Nampula, Quelimane, and Pemba and began support for the delegated management framework. NWDP I and II were followed in 2007 by the World Bank's support for a first phase of WASIS (P104566) – a US$15 million-equivalent IDA credit and US$15 million Africa Catalytic Growth Fund grant targeting selected investments in rehabilitation and expansion of networks in the water supply systems serving the cities of Beira, Quelimane, Nampula, and Pemba. Successful implementation of the project during the first two years helped to attract additional financing to support the scaling up of investments, including US$37 million from IDA and US$16.6 million from an Australian trust fund.

8. The investments in infrastructure and capacity building have significantly increased levels of service and decreased non-revenue water (NRW) in the target cities. For example, coverage has improved significantly – between 2009 and 2014, connections in the secondary city of Beira grew from fewer than 20,000 to nearly 52,800, a 164 percent increase; connections in Tete and Moatize increased from 7,700 to over 30,800, a 300 percent increase; and connections in Pemba increased from 8,500 to around 14,800, a 74 percent increase. In addition, between 2009 and 2014, NRW decreased from 49 to 42 percent in Tete and Moatize and from 38 to 29 percent in Pemba. Furthermore, operational performance and customer service has improved – the percentage of bills that are issued based on meter reading are now above 98 percent in Beira, 94.3 percent in Tete and Moatize, and 75 percent in Pemba.

9. Despite these impressive achievements, piped water coverage remains below national targets, in particular in the peri-urban areas of Mozambique's fastest-growing secondary cities. Three strategic systems in central and northern Mozambique have been identified for infrastructure investments to provide support to and facilitate economic growth and to provide a platform for the next phase of institutional reforms. These systems support important nodes along strategic economic growth corridors that have received significant investment in natural-resource exploitation and agricultural production. Rapid development in these areas has led to a population influx (largely to urban areas), as well as commercial development, thereby increasing the demand on existing water infrastructure and services.

10. The identified cities are among the largest in the FIPAG service areas, representing approximately 60 percent of treated water sold directly by FIPAG and covering 54 percent of the population in the service areas. Under the limited funding of WASIS I, investments focused on urgent rehabilitation of production capacity and expansion of the distribution network in the target cities. However, as pressure on the systems builds, they face challenges regarding service. In 2014, in Tete/Moatize (which on average supplies water for about 19 hours per day), 60 percent of households are connected; in Pemba (with only 6 hours of supply per day), 46 percent are connected; and in Beira/Dondo (with about 14 hours per day of supply), 45 percent are connected. In addition to the growing demand and a limited tertiary network, these systems are currently under stress because of incomplete water production and distribution infrastructure.

11. The proposed WASIS II investments focus on expanding water production, transmission and distribution facilities and, through network expansion, are expected to substantially benefit peri-urban areas of the cities, which largely house new arrivals. These areas are both underserved – with residents relying on expensive (up to MZN1,000 per m^3) trucked-in water and/or untreated water from locally dug wells or local rivers – and rapidly growing – as they absorb migrants from the surrounding countryside. Given the profile of most new migrants to these cities, these service improvements are likely to primarily benefit the poorer residents of the target cities. Furthermore, the proposed cities represent the major urban and service centers in some of the poorest provinces of Mozambique: Tete, Sofala, and Cabo Delgado provinces, with poverty rates of 58.7 percent, 58 percent and 45.1 percent respectively.

C. Higher Level Objectives to which the Project Contributes

12. Water services are an integral part of the Bank's support toward the twin goals of ending extreme poverty and promoting shared prosperity. More generally, there is a direct link between access to improved water services and the incidence of water-borne diseases and public health. Improving access reduces coping costs, leads to time savings and increases productivity – wide economic impacts with disproportionate and direct benefits to the poor. Women and children are among those who benefit most from access to improved services. Furthermore, it is well recognized that the reliability of water infrastructure services is a key factor affecting industrial productivity, efficiency and competitiveness. As such, improved water supply as an infrastructure service will help to facilitate economic growth and creation of jobs.

13. More specifically, the project has a clear poverty focus and includes design elements to target and extend benefits to poor households. As of today approximately 35 percent of domestic connections in FIPAG consume less than 5 m^3 per month (31 liters per capita per day); an additional 30 percent consume between 5 and 10 m^3 per month (62 liters per capita per day). These consumption levels are typical of lower-income households (who are unlikely to have in-house appliances). These households are the target of project activities that will extend networks (Component 1) and connect households through the provision of payments to operators to cover the cost of connections (Component 3). Improved access to water in peri-urban areas will also contribute to better health and quality of life. The project will also contribute to the promotion of shared prosperity, through activities which support improved quality of water services (including operational reliability and efficiency). These investments will (a) progressively reduce inequalities in access between and within rapidly expanding secondary cities; and (b) improve the capacity of water institutions to provide improved services to a broader segment of the urban population.

14. The proposed project will contribute to the achievement of higher-level objectives of the Government and the Bank. The Government has recently completed its five-year plan for 2015–2019 (*Programa Quinquenal do Governo* (PQG) 2015–2019), which was approved by Parliament in April, 2015. Priority II (human and social capital development) specifically highlights the provision of safe sources of water to urban populations, with a target of reaching 90 percent access to safe sources of water. Specifically, the PQG calls for investments in (a) the rehabilitation and expansion of water supply systems, (b) reductions in water losses, and (c) new household connections. The proposed project forms a part of the PQG and will contribute also to the safe drinking water Sustainable Development Goal targets for water and sanitation and hygiene.

15. The World Bank's current program in Mozambique was developed and is consistent with the Bank's 2012-2015 Country Partnership Strategy (CPS) (Report No. 66813, February 8, 2012), which was

fully aligned with the Government's previous five-year plan and its associated Poverty Reduction Action Plan (PARPA). The proposed project is consistent with the existing CPS's two cross-cutting pillars: (a) supporting competitiveness and employment; and (b) reducing vulnerability and increasing resilience. The CPS also has a foundational objective of strengthening governance and public sector capacity. Support for key infrastructure investments is a core part of the CPS's support for competitiveness and employment, in particular the provision of water services, and increased access to potable water is included as a CPS outcome indicator. The Bank is in the process of preparing a Systemic Country Diagnostic, which in turn will inform the Bank's next Country Partnership Framework (CPF) (2016–2019), currently under preparation. Under Objective 7 – Improve access to water and sanitation services – the draft CPF aims to reduce the incidence of water- and sanitation-related diseases by providing improved access to water and sanitation services to an additional 1.1 million people living in peri-urban areas and small towns. The proposed project is consistent with and will contribute to Objective 7 of the draft CPF.

16. This project contributes to the Bank's strategy for Africa by ensuring that key domestic sectors and utilities support competitiveness and employment and by closing the infrastructure deficit in the water sector, which affects both private-sector competitiveness and the health and welfare of the population through lost time and reduced productivity of women and girls, who carry the greatest burden of fetching water for their families.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

17. The project development objectives (PDOs) are to: (a) increase water service coverage in key cities in Mozambique's territory ; (b) strengthen the institutional and regulatory capacity for water supply services in the Northern, Central and Southern regions of Mozambique; and (c) support Mozambique to respond promptly and effectively to an Eligible Crisis or Emergency.

B. Project Beneficiaries

18. The project is expected to benefit more than 800,000 people residing within the project areas. Around 318,000 people will be provided with access to piped water services through new household connections. The remaining beneficiaries are predominantly existing customers who will benefit from improvements in the quality of services (for example, the system in Pemba currently supplies water for six hours per day; this is expected to increase to about 14 hours per day with support of the project. The project has been designed to specifically benefit low-income households residing in peri-urban areas. Water supply services will be extended to these areas, and uptake will be supported through a targeted connection payment program (Component 3) that aims to reach 70,000 households in the project cities and the Greater Maputo area. Project experience indicates that women and girls benefit disproportionately from water service expansion through reduced time spent collecting water.

C. PDO-Level Results Indicators

19. Key indicators to measure progress towards achievement of the PDO include:

(a) Number of people in urban areas provided with access to an improved water source under the project (core indicator).

(b) Direct project beneficiaries (percentage of whom are female) (core indicator).

(c) Number of implemented and monitored regulatory frameworks with the regional utilities (annual).

(d) Number of completed and independently audited financial statements (annual).

20. In addition, intermediary indicators have been identified to measure the more specific infrastructure and institutional objectives expected to result from each component (see Annex 1).

III. PROJECT DESCRIPTION

A. Project Components

21. The proposed project is a follow-on from the successful WASIS I project, which closed on October 31, 2015, and is designed to expand piped water provision in the target cities and to support the next phase of institutional reforms in the urban water sector. The reform process has been guided by the Government's water sector policy, including the delegated management framework and an institutional landscape that promotes: (a) a clear separation of functions (policy, operation and regulation); (b) autonomy, local/regional accountability and efficiency in service delivery; and (c) full cost-recovery and financial sustainability. The long-term, strategic objectives of the sector reforms are to achieve universal coverage, to support independence through enabling self-financing or private-sector financing, and to create robust institutional structures and supporting mechanisms that respond to local demands for sustainable water service delivery.

22. Specifically, the proposed Project consists of priority water supply investments in three major systems that serve five urban areas in the northern and central regions: (a) Pemba; (b) Beira and Dondo; and (c) Tete and Moatize. At the time the Project is presented to the IDA Board of Directors, there is a financing gap of US$56 million to complete all the activities described and appraised herein. The Government will endeavor to secure additional funds from Donors, furure IDA resources or Government's own funds before the end of the second year of Project implementation and has confirmed that investments in the cities of Tete and Moatize will not be undertaken prior to the financing gap being filled. Should the financing gap not be filled by the end of year two, the project would be restructured and the activities realigned.

23. The project will also support the creation of regional water utilities in the Northern, Central and Southern regions of Mozambique.[2] The proposed infrastructure investments will enable an increase in coverage and will address key infrastructure constraints to improving efficiency and quality of services. Furthermore, the proposed water supply infrastructure will support and leverage institutional objectives, including the creation of the regional utility companies.

24. WASIS II has been structured around five components. A summary of activities to be financed under each component is provided below. Additional details are provided in Annex 2.

[2] Strategic and financial advisory services for the establishment of regional water utilities are being provided by the International Finance Corporation (IFC).

Component 1: Rehabilitation and Expansion of Water Supply Production and Distribution (Total Cost: US$116.1 million; IDA Financing: US$66.5 million; Financing Gap: US$49.6 million).[3]

25. *Subcomponent 1.a: Rehabilitation and Expansion of Water Supply Production (US$66.1 million).* Subcomponent 1.a aims to increase production capacity in the three systems serving the cities of Pemba, Beira and Dondo, and Tete and Moatize[4] including through the expansion and refurbishment of wellfields, refurbishment of an existing intake, expansion and refurbishment of water treatment facilities, rehabilitation and expansion of transmission infrastructure, pump stations, and associated fittings.

26. *Subcomponent 1.b: Rehabilitation and Expansion of Water Distribution (US$50.0 million).* Subcomponent 1.b investments will increase service coverage in the three water distribution systems serving the cities of Pemba, Beira and Dondo, and Tete and Moatize[5], including through the: (a) construction of new distribution centers and rehabilitation of existing ones to increase storage with ground reservoirs and pressure through elevated water towers within the existing footprint; (b) expansion and rehabilitation of water supply networks; (c) provision of equipment comprising installation of district meters and pressure control valves within existing pipelines and telemetry systems; and (d) provision of approximately 60,000 new household meters and associated materials for domestic connections.

27. **Component 2: Institutional Support (Total Cost: US$18.9 million; IDA Financing: US$12.5 million; Financing Gap: US$6.4 million)**. The institutional development activities to be implemented under Component 2 will support the decentralization of FIPAG operations by establishing and reinforcing three regional utilities, i.e. *Águas do Sul, Águas do Centro, and Águas do Norte*, including the purchase and installation of a commercial system with system components focusing on billing and commercial management, customer service policies and procedures (including citizen engagement, gender and disability considerations, and complaints handling/recourse mechanisms), establishment of corporate governance structures, policies and procedures, including human resource issues associated with skills/professional development and equal opportunity and gender policies, and asset management systems and indirect NRW-reduction programs.

28. This component will also support project management, supervision for contracts under Component 1, audits, training, and various technical studies as needed, as well as technical assistance to FIPAG for the implementation of environmental and social safeguards.

29. The Bank-financed activities under this component will include technical assistance to support FIPAG in the establishment of the regional utilities and training and support during the initial stages of operations. This will include purchase and installation of a commercial system, with system components focusing on billing and commercial management, customer service policies and procedures (including citizen engagement, gender and disability considerations, and complaints handling/recourse mechanisms), establishment of corporate governance structures, policy and procedures, including human resources issues associated with skills/professional development, and equal opportunity and gender policies. Priority activities may also include key technical issues, including asset management systems and indirect NRW-reduction programs. This component and the activities to be financed will be flexible and responsive to the needs and demands of the newly created regional utility companies.

[3] Includes contingencies costs
[4] Investments in Tete and Moatize will not commence until the financing gap has been filled
[5] Investments in Tete and Moatize will not commence until the financing gap has been filled

30. **Component 3: Output-Based Payments for Low-Income-Household Connections (Total Cost: US$6.0 million; IDA Financing: US$6.0 million)**. The objective of the component is to increase access to piped-water connections for low-income households in the cities of the central and northern regions of the recipient and in the Maputo region by providing output-based payments to the regional utilities to support the provision of water services to the poor by facilitating the uptake of connections for low-income households through grant payments to reimburse the costs of eligible connections. This component will also support FIPAG to structure tariffs and establish other mechanisms to improve poverty targeting for low-income customers to ensure sustainability of the proposed interventions, including related studies and hiring of the independent verification agent.

31. This component will build upon the successful experience of the recently closed Global Partnership on Output-Based Aid Project (P104945) in Maputo, which supported about 30,000 subsidized connections in peri-urban areas. The component will continue support for connections in Maputo (in parallel to the activities of the Greater Maputo Water Supply Project (GMWSP)) and will replicate and extend the program to the project cities in the central and northern regions.

32. The connections will be implemented by the utilities and verified by an independent verification agent contracted by FIPAG. The output-based payments will be made by FIPAG to the utilities based on the results of a two-phase verification process: (a) after the installation of functioning yard-taps to eligible households (70 percent of the payment); and (b) after the demonstration of continued service for a period of three months (30 percent of the payment). The second phase of verification is intended to ensure continuity of service delivery. The output-based payment in effect subsidizes households to connect to the piped water system, but will be paid to the utilities. The payment covers the works cost of installing new connections (currently MZN2,000–3,000 per connection). About 70,000 household connections are expected to be subsidized over a six-year period in Greater Maputo and the five project cities. In addition to covering the labor costs of eligible connections, this component will finance the verification process and beneficiary surveys.

33. The verification process will ensure eligibility requirements are adhered to, providing assurance towards the component objectives of targeting and expanding access specifically for the poor. Following the procedures of the recent completed Global Partnership on Output-Based Aid Project in Maputo, the output-based payments will be made based on the IVA quarterly report, after verification is completed.

34. Furthermore, in the design of this component and, more generally, in the project, longer-term ability-to-pay constraints have been carefully considered. The Bank will continue to support FIPAG and CRA through providing technical advice for tariff structuring and other mechanisms to improve poverty targeting for low-income customers and to ensure sustainability of the proposed interventions.

35. **Component 4: Contingent Emergency Response (Zero-budget)**. This component will support potential disaster-recovery needs in FIPAG water systems by providing immediate response to an eligible crisis or emergency, as needed. This may include supply of critical parts and equipment, minor civil works rehabilitation, supply of fuel, rent of generators, and rapid transportation of chemicals and critical parts by express mechanisms.

36. **Component 5: Capacity Building and Operational Support to CRA (Total Cost: US$5.0 million; IDA Financing: US$5.0 million.)**. The objective of this component is to expand quality-of-service and financial regulatory mechanisms for urban water supply in Mozambique, including a detailed

impact evaluation to measure and assess outcomes related to the project's institutional and infrastructure investments.

37. This component will expand quality-of-service and financial regulatory mechanisms for urban water supply in Mozambique, including through the: (a) carrying out of impact evaluation activities to measure the outcomes of the Project; (b) scaling up of the information and communication technology (ICT) based platform for customer complaints and support for recourse mechanisms (RECO) and rollout thereof within Mozambique; (c) creation of local regulatory mechanisms to monitor and enforce parameters of local regulation, including the establishment of the local regulatory commissions (*Comissões Regulatorias Locais* [CORALs]) and carrying out of training of community representatives and focal points; and (d) review of subsidies for low-income customers.

38. The project will also support the regional utilities, through CRA, to improve key performance indicator and data management systems by establishing procedures for the utilities to report information within a country system that is aligned with the International Benchmarking Network Methodology (IBNET) database.

B. Project Financing

39. **Lending instrument**: The proposed lending instrument is an Investment Project Financing comprising an IDA credit and grant (Financing) for Special Drawing Rights (SDR) 65,300,000 (US$90 million-equivalent), to be implemented over six years. Selection of the Investment Project Financing was based on its flexibility and suitability to incorporate financing for a broad range of activities, including a number of specific investments, technical assistance and capacity enhancement measures. Due to financing limitations within the IDA 17 envelope, this project is being presented to the Board with a financing gap of US$56 million.[6] Specifically, the project has been prepared and appraised for a total amount of US$146 million, of which US$90 million equivalent has been allocated from IDA 17. Of the US$90 million allocated from IDA 17, US$23.5 million equivalent will be provided as a grant, to be used for the costs of Components 3 and 5 and partial costs related to Component 2. The balance, US$56 million equivalent, is the financing gap.

40. Financing for Component 1, US$66.5 million equivalent IDA credit, will be provided to FIPAG by Government on a reimbursable basis and on the same terms and conditions as the IDA Credit, converted to meticais at exchange rates applicable at the time of disbursement of the Financing resources. Financing for Components 2, 3 and 4 will be provided to FIPAG by GoM on a non-reimbursable basis to support the poverty-focused connection program to low-income households and institutional support activities. Financing for Component 5 will be provided to CRA by Government on a non-reimbursable basis.

41. As discussed above, the Project is presented with a financing gap of US$56 million, of which US$42.3 million under Component 1 and US$6.4 million under Compnent 2 for investments and institutional support to the cities of Tete and Moatize and US$7.3 million for Contingencies.

[6] The concept-stage Project Information Document, approved and disclosed in June, 2014, was for a total project value of US$186.0 million. This included investments in the water supply systems serving Pemba, Nacala, Beira and Dondo, and Tete and Moatize. In addition it included supply of connection materials for Chimoio, Manica and Gondola. The scope of the project was subsequently reduced to US$146.0 million, to be financed through the IDA Credit of US$90.0 million, acknowledging the US$56.0 million financing gap.

Table 1: Project Costs and Financing

Project Components	Total Project Cost (US$ millions)	IDA 17 Grant (US$ millions)	IDA 17 Credit (US$ millions)	Financing Gap (US$ millions)	% Financing
Sub-component 1.a: Rehabilitation and Expansion of Water Supply Production	61.9	0.0	47.0	14.9	100
Sub-component 1.b: Rehabilitation and Expansion of Water Distribution	46.9	0.0	19.5	27.4	100
Component 2: Institutional Support	18.9	12.5	0.0	6.4	100
Component 3: Output-Based Payments for Low-Income-Households Connections	6.0	6.0	0.0	0.0	100
Component 4: Contingent Emergency Response	0.0	0.0	0.0	0.0	100
Component 5: Capacity Building and Operational Support to CRA	5.0	5.0	0.0	0.0	100
Contingencies Costs (%)	7.3	0	0	7.3	100
Total Project Costs	**146.0**	**23.5**	**66.5**	**56.0**	**100**

C. Lessons Learned and Reflected in the Project Design

42. **Component 2: Institutional Support.** The establishment of three regional utilities follows from the experience of the effort to lease utility operations on a city-by-city basis during the original WASIS and the greater understanding of the challenges of improving operational efficiencies within systems of limited scope. The lack of success of the bidding out of the operation of secondary cities in 2009 resulted in FIPAG revisiting the financial sustainability of all the systems and considering regional groupings in order to encourage efficiencies and cross-subsidization from stronger to less viable systems. The administrative grouping resulted in the sharing of goods and equipment procurement, technology, and administration, resulting in some economies of scale and improved efficiencies. The formal establishment of three regional utilities operating under commercial principles will enable FIPAG to test managerial decentralization as well as to facilitate inter-regional benchmarking.

43. **Component 3: Output-Based Payments for Low-Income-Household Connections.** Several lessons from the recently completed Output-Based Aid for Coverage Expansion Project are incorporated into Component 3. Most important, the component provides faster and more efficient payments for new connections to low-income households than exists under normal procedures, which allows the payment of the household connection fee over an 18-month period. In contrast, Component 3 provides payment to the utility in full between six and nine months following the connection. The component also covers the connection application fee normally required from new households, which was reported to be a significant constraint to low-income households during the previous project. In addition, Component 3 will work in parallel with Component 1, which supplies meters and associated connection materials. Pre-financing these materials was identified as a constraint during the earlier project as well. Note that, although the operator in the earlier project preferred to receive the connection payment following a single verification, this component proposes to continue to require a dual-verification process, with 70 percent of the payment made following verification of the connection and 30 percent of the payment made following verification of three months of service, billing, and payments.

44. **Component 4: Contingent Emergency Response**. This contingency financing mechanism draws from the lessons and experience of implementation under the original WASIS and increased knowledge of changing hydrological and meteorological conditions in Mozambique. Specifically, during the original WASIS project life cycle, a number of IDA-financed activities, and, more generally, FIPAG's operations were affected by natural disasters, including severe flood events and droughts. Mozambique is particularly exposed to tropical cyclones and is also the third most at-risk country from water and weather-related hazards in Africa. Related to the impacts of climate change, there are also indications of an increase in the frequency and intensity of extreme events. Component 4 has been introduced into the project to enable FIPAG to respond rapidly through emergency rehabilitation and recovery activities. This will support FIPAG to continue delivering services during challenging circumstances. It is crucial to immediately restore a minimum level of supply in water systems to minimize disease. During the WASIS I this support was limited to fuel, electricity, and some replacement parts; this proved insufficient to quickly reestablish services in the face of serious natural disasters. By having a specific component in the project, FIPAG can advance expenditures to reestablish the services quickly and be reimbursed later. This was not possible in WASIS I.

45. **Component 5: Capacity Building and Operational Support to CRA.** Including both the water supply operator (FIPAG) and the regulator (CRA) under a common project framework provides important support to the overall goals of improving water supply services. In Zambia, for example, limiting support to only the water utility was identified by the Bank team as a major constraint during the early implementation of the Water Services Performance Improvement Project (P071259). WASIS II binds both agencies to a common development objective, but also increases the exposure and understanding of the agencies' perspectives on sector issues, challenges, constraints and incentives. The design of implementation arrangements, such that each agency is responsible for management of their own activities, facilitates ownership in the process, allows sufficient independence, and supports institutional capacity development.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

46. Institutional and implementation arrangements will follow the successful arrangements of the original WASIS I. Components 1, 2, and 4 of the project will be implemented by FIPAG, the asset-holding agency responsible for investments in urban water supply in the largest cities in the country. FIPAG, with support from an independent verification agent, will also manage Component 3, but the connections (for which eligible costs will be reimbursed under this Project) will be made by the utility operators. Component 5 will be implemented by CRA, the water regulator.

47. Since its establishment in 1998, FIPAG has been directly involved with the implementation of numerous projects financed by the Bank and other development partners. Under this project, there will be a specific Project Agreement between IDA and FIPAG, and a subsidiary Lending Agreement signed between FIPAG and the Ministry of Economy and Finance (MEF). The fiduciary, safeguards, and monitoring and evaluation systems used by FIPAG are integral parts of the agency and are acceptable to the Bank. The project will be implemented by the Projects and Investment Directorate, a unit of FIPAG staffed by a number of FIPAG professionals and supported by a handful of international technical advisors. This directorate has major project experience, including WASIS I, the water investments

currently under implementation through the IDA-financed Integrated Growth Poles Project, and projects being financed by the African Development Bank and the Embassy of the Kingdom of the Netherlands.

48. It should be noted that FIPAG is the asset-holding company for the urban water supply sector, responsible for investments in and major rehabilitation of water supply assets. In Maputo, those assets are operated and maintained by AdeM, which leases the assets from FIPAG to provide services. Urban water systems outside of Maputo are currently operated directly by FIPAG. The assets to be constructed under the project will be owned by FIPAG and operated and maintained by the regional utilities. FIPAG has worked closely with local operational teams and municipalities during the planning and design stages of the project and will continue to do so during implementation and commissioning.

49. Component 5 will be implemented by CRA, the water regulator. CRA successfully implemented activities under Component C of WASIS I and is currently implementing a component of the GMWSP. As is the case with FIPAG, CRA is familiar with Bank policies and procedures. For the purposes of progress reporting and monitoring and evaluation, FIPAG and CRA will submit independent progress reports directly to the Bank.

B. Results Monitoring and Evaluation

50. Results monitoring and evaluation will be carried out by FIPAG and CRA for the components under their responsibility – Components 1-4 in the case of FIPAG, and Component 5 in the case of CRA. For Component 3, FIPAG will engage an independent verification agent to confirm eligible outputs, based on which FIPAG will process payments. The independent verification agent will also track indicators of service quality and socio-economic characteristics and carry out beneficiary surveys as part of the poverty-focused activities (to ensure targeting and to capture impacts). Under Component 5, CRA will engage a consultant to carry out baseline and end-of-project impact evaluation surveys and analysis to measure attributable outcomes and to inform investment planning decisions and policy and tariff discussions. CRA will use IBNET platforms to roll out and support the collection of utility performance data. The monitoring and evaluation (M&E) system currently used by FIPAG will be used to monitor Component 1-4.

51. Both FIPAG and CRA have staff members capable of monitoring results in their respective areas of responsibility and will use systems which have been developed through the support of WASIS and the GMWSP. Indicators identified for project results monitoring are consistent with sector monitoring already undertaken on a regular basis and embedded in the works and consultant contracts to be financed under the project. Monitoring of specific activities is the responsibility of project officers within each agency.

C. Sustainability

52. The project has been identified and prepared through a multi-level analysis including demand projections, resource availability, institutional capacity, economic costs / benefits and financial sustainability. The needed investments in water supply and distribution infrastructure have been identified through (a) technical diagnostics and feasibility studies (considering alternatives); (b) engineering designs; (c) social / environmental assessments; and (d) economic and financial analyses.

53. Technical studies have reviewed and identified key infrastructure limitations and assessed design alternatives, including water source options. The proposed investments address the key technical issues.

Potential environmental and social impacts have been assessed and modifications have been made to optimize the project investments to maximize social benefits. Operations and maintenance requirements and institutional structures / capacity have been carefully considered during project preparation, and specific technical assistance activities have been included within Component 2 to support the regional utilities in a number of areas where needs have been identified. Appropriate operations and maintenance costs have been factored into the financial analysis, and potential issues related to cost-recovery have been highlighted to ensure long-term financial sustainability. Moreover, the proposed infrastructure and institutional investments have been designed with consideration of technical, environmental, social, institutional and financial factors which will support sustainability of the project and the water service delivery model more generally.

54. The regional utilities, which will operate the assets and receive operating revenues from new households connected to the expanded network, are expected to receive a small net benefit. Projections indicate that with moderate tariff adjustments operating revenues will be sufficient to cover operating expenses (which include lease fees to FIPAG), financing costs, and depreciation expenses of FIPAG as a whole. The addition of treated water is expected to relieve capacity constraints that currently restrict average household consumption within lower tariff bands. The project investments are also expected to contribute to ongoing positive financial results for FIPAG, which will receive grants and borrow the project funds from the Government and will be responsible for repayment to the Government. Funds for repayment of the credit will be passed through to FIPAG through the lease fees or equivalent form of repayment specified in the contracts between FIPAG and the proposed regional utilities.

V. KEY RISKS AND MITIGATION MEASURES

A. Overall Risk Rating and Explanation of Key Risks

55. The overall risk for the project is Moderate. The risk rating proposed by the team takes into account the successful implementation experience of WASIS I, the on-going implementation of the GMWSP, strong Government ownership and commitment towards the development objectives, and the implementation capacity of the responsible agencies. The main implementing agency (FIPAG) is fully autonomous and does not depend financially on the Government. In addition, the risk rating takes into consideration the financing gap (under Other) and the risk of natural disasters.

56. Moreover, potential risks associated with the technical elements of the project have been mitigated through an intensive preparation process, which has built upon successful experience of previous projects and incorporated lessons learned in the project design. The institutional reform agenda is led by the Government and FIPAG, and has been supported by an IFC advisory services contract with FIPAG. The activities included under the Project are therefore demand driven and have strong ownership by the implementing agencies. A potential stakeholder risk involving uptake of new connections for low-income households due to unaffordability concerns was identified during the early phases of preparation. This risk was mitigated through the project design, specifically Component 3, which introduces mechanisms to reduce the cost of connections to low-income households – effectively removing a potential barrier for improved access.

57. The ratings for risks associated with the Political and Governance and Macroeconomic categories are common to all Bank-financed operations and are informed by the Bank's analysis of Mozambique's performance in such categories, which take into account the general risks associated with the operating environment. The risk associated with natural disasters has also been identified and rated as Moderate.

This risk was informed by the experience of WASIS I, where over the lifetime of the project a number of cyclone and extreme flood events interrupted water services and led to project implementation challenges and delays. More specifically, the impacts on water services were experienced either directly through damages to key water supply infrastructure facilities or indirectly through power-supply and access (including roads and bridges) interruptions. To mitigate project impacts related to this risk a specific component has been included in the project design, which will enable FIPAG to respond rapidly through a reallocation of funds.

58. The risk associated with the financing gap has also been identified and rated as Moderate. The financing gap of US$56 million equivalent – necessary to complete the project – will be filled when further funds are made available. The investments in Tete and Moatize will not commence until the financing gap is filled. The financing gap is expected to be filled at the end of the second year of project implementation, and therefore is unlikely to impact the overall achievement of the project development objectives. The Government will endeavor to secure these additional funds. If these funds are not secured, the project will be restructured and activities realigned.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

Project Economic Analysis

59. An economic analysis has been carried out to estimate the economic returns of the Project investments. The analysis was based on expected benefits during the Project life cycle (30 years), including improved health, averted economic costs, and time savings of project beneficiaries. Costs included the expansion of household connections, rehabilitation and water distribution costs, and output-based payments for connections. The analysis included sensitivity and risk scenarios.

60. Findings indicate that the project is expected to generate positive socio-economic returns. The economic rate of return (ERR) for the project is estimated to be 28.6 percent, with net economic benefits for the three urban centers (Pemba, Beira/Dondo, Tete/Moatize) estimated to be US$33.4 million at a discount rate of twelve percent. Around half of the project benefits (49.5 percent) are the result of avoided costs of disease and care, while an additional 35.2 percent of benefits are due to time savings. Remaining benefits are generated from the incremental value of water (15.2 percent).

61. Beira/Dondo shows the highest ERR – 36.2 percent. Pemba's ERR is estimated at 24.9 percent. Finally, Tete/Moatize's ERR is estimated at 18.9 percent. The average ERR for the three cities reaches 28.6 percent.

Table 2: Economic Rate of Return by City

City	Estimated ERR (%)
Pemba	24.9
Beira/Dondo	36.2
Tete/Moatize	18.9
Weighted Average	**28.6**

62. A sensitivity analysis estimated the effect on the Project's ERR based on changes in costs and benefits driven by: (a) investment and operating cost overruns; and (b) reductions in health or overall benefits. Sensitivity analysis for the basic scenario of 60,000 connections showed that costs would have to increase by 40 percent, or benefits would need to be reduced by 30 percent to reach an ERR of 12 percent. Changes in the number of connections might also shift the ERR, as a different number of connections would change economic efficiency thresholds. A ten percent drop in targeted connections (6,000 connections) would reduce the ERR to 11.5 percent while a 20 percent drop in connections would push the ERR to 8 percent. Additional information is provided in Annex 5.

63. Because the nature of the investments, public financing is provided. The Implementing Agencies will mostly target the poor households in the peri-urban areas. Beyond financing, the added value arises mainly from the Bank's technical input based on international experience, introduction of innovative projects, improvement in design, support for capacity development during implementation, training, sharing of experience on project and risk management, and more.

Project Financial Analysis

64. An analysis of the expected financial costs and revenues expected to be generated by FIPAG through the Project investments has been carried out. In addition, an analysis of FIPAG's revenues, expenses, and overall debt service obligations has been carried out to determine whether existing tariff levels are able to accommodate the proposed credit and, if not, to estimate necessary tariff increases.

65. The analysis projected the expected financial results of the proposed Project, taking into account all capital investment and associated technical assistance costs paid for by FIPAG (i.e., excluding amounts provided on a grant basis), all estimated operating costs related to the Project investments, including maintenance costs of the project-financed infrastructure, and revenues generated by the investments over a 30-year period. The analysis reviewed the expected net operational financial results generated by the project investments, calculating (a) an estimated net present value (NPV) based on a discount rate of ten percent; and (b) an estimated internal rate of return (IRR). An aggregate project NPV and IRR has also been calculated. The results are summarized in Table 3.

Table 3: Project NPV (US$ millions) and IRR

	Pemba	**Beira/Dondo**	**Tete/Moatize**	**Combined Project**
NPV (10% discount rate)	(27.6)	(2.6)	(24.7)[7]	(54.9)
IRR	4.2%	8.7%	0.5%	4.7%

66. These relatively low financial returns are not surprising, given that the project focuses on expanding water access to peri-urban, generally low-income and low-consuming households. While investment costs related to network expansion and new connections are often recoverable through the net operating revenues generated through even relatively low usage levels, the higher investment and operating costs related to the expansion of treatment capacity can only be financially recovered through significantly higher consumption levels than are likely to be achieved here. In all three targeted cities, the operating costs related to the new investments and delivery of water to new customers can be covered

[7] Investments in Tete and Moatize will not commence until the financing gap has been filled

by associated new tariff revenues. However, investment costs need to be recovered on a system-wide basis – i.e., through cross subsidies from higher-consuming customers.

67. Returns from the aggregate project investments are significantly below the discount rate of ten percent, however, the estimated rate of return of 4.7 percent exceeds the interest rate on IDA credits (which is less than one percent). While this indicates that the returns from the project are likely sufficient to cover project-related debt service obligations over the course of the repayment of the debt, additional analysis has been undertaken to review the ability of FIPAG, which is responsible for repaying the loans associated with the investments, to cover the relevant debt service obligations on an annual basis. This review includes analysis of FIPAG's ability to meet its existing legal covenants with IDA when considering additional long-term debt.

68. Taking into account existing tariff levels and structure, a modest natural growth in water sales of one percent per year, as well as the expected new production and connections from the proposed Project, projections indicate that the debt service coverage ratio (DSCR) of 1.2 for exiting Loans and 1.5 for future loans to FIPAG are likely to be met through 2023, however, the DSCR falls well below 1.0 in 2024 and beyond. In addition, it is important to note that the ratios are dependent on somewhat higher collection ratios (90 to 95 percent) than FIPAG currently achieves (85 percent), although FIPAG's collection ratio has reached 95 percent in the past. Because these obligations are nearly 10 years in the future, and that it is highly likely that tariffs will be adjusted in the meantime – both on a nominal and real basis – the World Bank expects the covenants to be substantially complied with. The World Bank recommends that all parties be prepared to implement real tariff increases in the early 2020s – preferably earlier –to enable FIPAG to meet the expected debt obligations in 2024.

B. Technical

69. The Bank has reviewed and confirmed that the proposed investments are aligned with Government priorities and the service objectives of FIPAG and address the key technical issues identified. The infrastructure solutions proposed are considered technically sound concepts, supported by feasibility studies, technical investigations and operational/institutional interventions which are designed to support project sustainability. More specifically, to enable an increase in coverage and to facilitate improvements in the quality of water services, the project will invest significantly in water production and distribution (Component 1).[8] This approach is required to address the infrastructure backlog in the Project areas and to keep pace with the increasing demands associated with rapid urban growth in each city. Furthermore, the selection of cities to be included under the Project and proposed investments will leverage and support the institutional reforms by reinforcing the operational performance of the regional utilities.

70. During preparation and again at appraisal, the demand projections and calculations for planning the number of connections and length of distribution network expansion within each system were reviewed and verified, along with the requirements for investments to indirectly reduce major technical losses.

71. Cost estimates have been prepared and reviewed by the Bank. The estimates are based on a comparison of market rates from similar projects recently implemented by FIPAG and include provisions for escalation and contingencies. The proposed contract packaging considers potential technical and

[8] Investments in Tete and Moatize will not commence until the financing gap has been filled

procurement risks, geographical constraints, and where possible seeks to increase efficiency through economies of scale (by grouping similar investments into larger packages). Moreover, the procurement packaging and implementation timeframes were reviewed from a technical perspective and it was confirmed that the approach incorporates lessons learned though the experience of WASIS and is considered achievable within the project duration.

72. Advance procurement activities have commenced for the major infrastructure investments in each city:

Works

- Design and build for rehabilitation of the existing transmission main and construction of about 60 km of transmission main, DN 500 mm, Pemba

Consultancy

- Design check and supervision of the Pemba transmission works contract

73. The Pemba and Beira works will be implemented first, as they are the longest and most complex contracts, with the potential to affect overall project implementation in terms of duration and cost. Early procurement will enable risks to be identified early and mitigation measures to be applied. This early procurement also ensures a high degree of project readiness, as the advanced procurement packages have a combined estimated cost of US$22 million. The works contracts related to Tete/Moatize[9] will be signed only after the the Government obtains financing to cover the investments related thereto.

C. Financial Management

Financial Management Assessment

74. A financial management (FM) assessment was conducted in accordance with the Financial Management Manual issued by the Financial Management Sector Board in March 2010. The objectives of the Project's FM system are to: (a) ensure that funds are used only for their intended purposes in an efficient and economical way while implementing agreed activities; (b) enable the preparation of accurate and timely financial reports; (c) ensure that funds are properly managed and flow smoothly, rapidly, adequately, regularly and predictably to both implementing entities and two others; (d) enable project management to monitor the efficient implementation of the project; and (e) safeguard the Project's assets and resources.

FM Arrangements

75. There are no alterations to the FM arrangements from those currently being used for the ongoing operations financed by the Bank, which have been operating satisfactorily for both FIPAG and CRA. The review made the following conclusions: the overall FM risk rating of the project is Moderate and the overall FM arrangements, as designed, are acceptable to the Bank given the requirements under OP/BP 10.00. The assessment was favorably affected by the fact that FIPAG and CRA are currently satisfactorily implementing other Bank-financed operations and have acceptable FM systems in place. No significant FM risks were identified during the assessment.

[9] Investments in Tete and Moatize will not commence until the financing gap has been filled

D. Procurement

76. Procurement for the proposed project will be carried out in accordance with the World Bank's 'Guidelines: Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers' dated January 2011, revised July 2014, 'Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers' dated January 2011, revised July 2014, and the provisions stipulated in the Financing Agreement. Anti-corruption guidelines which apply to this project are: 'Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants', dated October 15, 2006 and revised in January 2011.

77. The arrangements in FIPAG and CRA for the implementation of the proposed project were reviewed and found to be acceptable for FIPAG, while requiring enhancements for CRA. These agencies have been satisfactorily implementing three Bank-financed projects. However, while there has been capacity built in-house and continued retention of internationally recruited personnel for FIPAG, CRA has not been able to secure long-term in-house support or consultants with adequate expertise in procurement. To successfully implement the project, CRA will need to retain at least a part-time consultant proficient in Bank procurement procedures.

78. FIPAG's Projects and Investment Directorate has a pool of engineers experienced in procurement who have been in charge of WASIS I and other operations. Furthermore, the head of the directorate is proficient in procurement; in addition, an internationally recruited procurement specialist, currently supporting the Bank-financed GMWSP, will also provide support to WASIS II. These resources are in addition to the procurement officer available within FIPAG's procurement unit. This arrangement is considered to be adequate for the implementation of the proposed project.

79. CRA has within its Directorate of Administration and Finance a procurement unit resourced with a full-time procurement officer. While the procurement officer has experience in local regulations, he has limited exposure to Bank procurement procedures, hence the need to augment CRA's capacity with at least a qualified part-time consultant.

80. Based on the capacity assessment of both FIPAG and CRA, the procurement risk associated with the implementation of the project is rated as Moderate. More details can be found in the Procurement Risk Assessment Management System assessment.

E. Social (including Safeguards)

81. The nature of the physical investments envisioned for WASIS II are similar to infrastructure investments under the original project, although WASIS II has some larger and more complex investments with respect to water production capacity. Despite this, the likelihood of large-scale, significant, cumulative, and/or irreversible impacts of these investments is considered low, as works will be placed within road rights-of-way and vacant land when possible. Previous project activities have made concerted efforts to avoid land acquisition or to cause negative impacts on assets whenever possible through routing of pipelines along rights-of-way that have not been encroached upon.

82. In the targeted areas, although urban in nature, it should be possible for most works to occur within the right-of-way and within the existing infrastructure footprint. Any works to be completed on

private land will be within the context of a landowner requesting service connections to his/her home. It is likely that civil works associated with upgrading, rehabilitation, and refurbishment of FIPAG infrastructure can be done within existing compound areas already owned by FIPAG.

83. Since the appraisal of WASIS I, Mozambique has passed a resettlement compensation policy that largely meets Bank standards. Although it is unlikely any households will need to be relocated, recent experience with the new law shows relocated families being better off after relocation, as they receive a home of equal or greater size. Most importantly, households are given legal title to these new homes, often something that the household did not have before. In cases with both a husband and wife residing at a home, the title for the new home is in both names.

84. All municipalities are familiar with consultation procedures to be followed in cases where project activities may affect households and businesses. FIPAG works with municipal leaders who are familiar with the various neighborhoods to ensure residents are fully informed of project plans and provided with an opportunity to provide feedback. In cases where a business may need to temporarily or permanently relocate, FIPAG works with local market leaders, as well as business owners, to develop preferred solutions.

85. Although Mozambique's resettlement and compensation law closely matches Bank standards, a resettlement policy framework (RPF) was updated from the original WASIS I and will be followed during WASIS II implementation to ensure all Bank policy requirements and standards are met. The RPF was disclosed in all cities on September 21, 2015, and all municipalities have been informed of the need to follow both the Bank RPF and the national laws on compensation. The RPF was disclosed in the Bank's InfoShop on February 11, 2016. If it is determined that land will be acquired, or businesses may experience a negative impact on their income, a Resettlement Action Plan will be prepared based on the RPF and national laws.

F. Environment (including Safeguards)

86. The project investments will take place in three cities:, Beira, Dondo, and Pemba, served by three water supply systems. Given the nature, scale, and scope of the infrastructure investments planned, the potential adverse environmental and social impacts of the project are expected to be moderate, reversible, and temporary. The civil works will be carried out either on land already owed by FIPAG or along existing road rights-of-way.

87. There are no protected areas for nature conservation or species or habitats of particular interest that will be directly or indirectly affected. It is expected that most of the potential adverse environmental and social impacts associated with the project investments will be avoided and/or mitigated through provisions adopted during the sub-project preparation phase and/or the development of the technical designs.

88. The proposed WASIS II is a repeater of WASIS I, which was a Category B project. WASIS II is also a Category B project and will finance the same nature of investments as those financed by WASIS I in the same locations in Mozambique, except for Tete and Moatize. In addition, the locations of infrastructure investments under both projects are similar – urban areas and rights-of-way of existing roads. Proposed activities likely to generate negative environmental and/or social impacts will include civil, electrical, and mechanical works to improve water supply production, expansion and refurbishment of wellfields, a water intake, and water treatment plants, rehabilitation or expansion of water transmission

infrastructure, including new pipelines and pump stations, as well as rehabilitation and expansion of water supply networks.

89. Consequently, WASIS II has triggered the following safeguard polices: Environmental Assessment (OP/BP 4.01), due to potential negative environmental impacts expected during the construction phase, mostly related to public nuisance, disturbances and pollution of soils, including waste management; Involuntary Resettlement (OP/BP 4.12), because the project may result in temporary or permanent loss of assets, i.e., crops or other means of income generation; and Projects on International Waterways (OP/BP 7.50), because the project will finance activities potentially affecting two international rivers, the Pungue River and the Zambezi River.

90. An Environmental and Social Management Framework (ESMF) was prepared and disclosed for WASIS I. As WASIS II is also rated as category B and activities will take place in similar locations, the ESMF has been updated and disclosed in Mozambique. The ESMF was disclosed on August 12, 2015 in Beira, Dondo, Tete, Moatize, and Pemba. A second disclosure was carried out on September 21, 2015 in the same cities. The ESMF was disclosed in country a third time on February 16, 2016 after being disclosed in the Bank's InfoShop on February 11, 2016.

91. All the safeguards instruments indicated in the paragraph above will be used for project implementation. Where necessary, Environmental and Social Impact Assessments and Environmental and Social Management Plans (as well as Resettlement Action Plans) will be inserted in the works contracts obligations. Other relevant and applicable national regulations will guide the project implementation phase, as well as serve as due-diligence guidelines with which the Borrower has to comply.

92. **Institutional Safeguards Arrangements**: Implementation of the core recommendations of each of the safeguards instruments requires the establishment of a solid and well trained team of social and environmental specialists. Overall, FIPAG has qualified personnel to manage environmental and social issues, including specialists dedicated to oversight on similar projects, including the Category A GMWSP and the original WASIS I. There is a strong record of experience with environmental and social safeguards aspects of projects financed by the Bank and other international and bilateral donors. Nonetheless, additional support and training has been recommended for FIPAG, with a focus on specialized environmental and social aspects mainly related to health and safety. This support should also be coupled with the provision of environmental officers, with strong experience in addressing social concerns. Additionally, FIPAG should develop a training program and/or a Capacity Development Plan. The training program should be designed to improve the effectiveness and capacity of the local authorities in the management of environmental and social impacts during the planning, implementation and operations phases of the project in the selected cities. FIPAG is also encouraged to work closely with the Ministry of Land, Environment and Rural Development, mainly with the respective provincial directorates to ensure adequate screening of the project activities.

G. Other Safeguards Policies Triggered

93. OP 7.50 is applicable to the proposed project since the water supply systems rely on sources of water that are potentially interconnected with the Zambezi and Pungue Rivers. The Zambezi River, which is shared between Angola, Botswana, Namibia, Zambia, Zimbabwe and Mozambique, is considered an international waterway for purposes of the policy. In addition, the Pungue River is similarly considered an international waterway because it rises in Zimbabwe before flowing through Mozambique and

emptying into the Indian Ocean through a large estuary at Beira. However, it was determined that the proposed activities qualify for an exception (paragraph 7 (a) of OP 7.50); the project (a) will not adversely change the quality or quantity of water flows to the other riparians, especially since Mozambique is the furthest downstream riparian; and (b) will not be adversely affected by other riparians' possible water use. A Memorandum for Exception to Notification Requirements under OP7.50, Project on International Waterways, was prepared for the project (dated March 3, 2015) and approved by the Bank's Africa Region Vice President.

H. World Bank Grievance Redress

94. Communities and individuals who believe that they are adversely affected by a Bank-supported project may submit complaints to existing project-level grievance redress mechanisms or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed to address project-related concerns. Project-affected communities and individuals may submit their complaint to the Bank's independent Inspection Panel, which determines whether harm occurred, or could occur, as a result of the Bank's non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the Bank's attention and Bank management has been given an opportunity to respond. For information on how to submit complaints to the Bank's GRS, please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the World Bank Inspection Panel, visit www.inspectionpanel.org.

Annex 1: Results Framework and Monitoring

MOZAMBIQUE: Water Services and Institutional Support Project II

Project Development Objective

PDO Statement

The PDOs are to: (i) Increase water service coverage in key cities of Mozambique's territory; (ii) Strengthen the institutional and regulatory capacity for water supply services in the northern, central and southern regions of Mozambique's territory; and (iii) Support Mozambique to respond promptly and effectively to an Eligible Crisis or Emergency.

These results are at the:	Project Level

Project Development Objective Indicators

Indicator Name	Core	Unit of Measure	Baseline	Cumulative Target Values						Frequency	Data Source/ Methodology	Responsibility for Data Collection	Comments
				YR1	YR2	YR3	YR4	YR5	YR6				
Number of people in urban areas provided with access to Improved Water Sources under the project	✓	Number	0	0	0	26,500	106,000	212,000	318,000	Semi-annual	Reports	FIPAG	
Direct project beneficiaries Female beneficiaries	✓	Number Percentage	0 50%	0	0	26,500 50%	243,000 50%	492,900 50%	828,829 50%	Semi-annual	Reports	FIPAG	
Number of implemented and monitored regulatory frameworks with the regional utilities - ADM - Northern - Central - Southern		Number	1	Procurement of consultants	Signing of frameworks	4	4	4	4	Annual	Reports	CRA	
Number of completed and independently audited financial statements (annual)		Number	1	1	1	4	4	4	4	Annual	Reports	FIPAG	

Intermediate Results Indicators

Indicator Name	Core	Unit of Measure	Baseline	Cumulative Target Values						Frequency	Data Source/ Methodology	Responsibility for Data Collection	Comment
				YR1	YR2	YR3	YR4	YR5	YR6				
Component 1													
New piped household water connections that are resulting from the project intervention	✓	Number	0	0	0	5,000	20,000	40,000	60,000	Semi-annual	Reports	FIPAG	
Piped household water connections that are benefiting from rehabilitation works undertaken under the project	✓	Number	0	0	0	0	26,000	53,000	96,383	Semi-annual	Reports	FIPAG	
Length of water supply network laid under the project and operational (cumulative)		Kilometers	0	Procure ment	Contract ongoing	100	150	250	390	Semi-annual	Reports	FIPAG	
Increased capacity of water systems (treatment, production, and transport)		m^3 per day	0	Procure ment	Contract ongoing	Contract complet ed	10,000	20,000	35,000	Semi-annual	Reports	FIPAG	
Average hours of water supply per day - Pemba - Beira & Dondo - Tete & Moatize		Hours per day	6 14 19	Procure ment	Contract ongoing	Contract complet ed	10 16 16	12 16 20	14 16 22	Semi-annual	Reports	FIPAG	
Component 2													
Number of water utilities the project is supporting	✓	Number	0	0	1	2	3	3	3	Semi-annual	Reports	FIPAG	
Incorporation of regional utilities as corporations		Number	0	Legal approval	3	3	3	3	3	Annual	Reports	FIPAG	
Commercial systems operating in regional utilities - Northern - Central - Southern		Number	0	Procure ment of equipme nt	Installat ion of equipme nt	Test of system in 1 Region	Test of system in 2 Regions	Test of system in 3 Regions	3	Semi-annual	Reports	Regional utilities/ FIPAG	
Audited Collection ratio: (annual billings less increase		Percentage								Annual	Reports	Regional utilities/ FIPAG	

in gross receivables) / annual billings. - Northern - Central - Southern			68 76 94	75 80 95	80 85 95	85 90 95	90 95 95	95 95 95	95 95 95				
Development and implementation of corporate equal opportunity policies / procedures (addressing issues of gender and disability in particular)		Number	Development of terms of reference	Contract	1	1	2	2	3	Annual	Reports	Regional Utilities / FIPAG	
Component 3													
Number of subsidized house connections installed		Number	0	0	0	15,000	40,000	70,000	70,000	Semi-annual	Reports	AdeM / Regional Utilities / FIPAG	
Number of subsidized house connections with continuous water services for three months		Number	0	0	0	0	15,000	40,000	70,000	Semi-annual	Reports	AdeM / Regional Utilities / FIPAG	
Number of low-income (poor) beneficiaries of the output-based connection subsidy		Number	0	0	0	79,500	212,000	371,000	371,000	Semi-annual	Reports	AdeM / Regional Utilities / FIPAG	
Component 5													
Implementation of "Citizen Voice" tools and RECO procedures in project cities		Number	0	Procurement of equipment	Installation of equipment	Test of system in 1 region	Test of system in 2 regions	Test of system in 3 regions	3	Semi-annual	Reports	CRA	
Beneficiary surveys carried out (number)		Number	0	Baseline procured	Baseline completed	One city per region 3		Final survey procured	Final survey - one city per region 3	Annual	Reports	CRA	
Impact Evaluation – completion of baseline and end-project surveys		Yes/No	0-	Baseline procured	Baseline completed			Final survey procured	Final survey done	Baseline/End-project	Reports	CRA	

Description of Results Indicators

1. **Number of people in urban areas provided with access to an improved water source under the project.** This core sector indicator captures the cumulative number of people benefiting from new piped household water connections financed by the project. The project will support the installation of 60,000 new connections. The average household size of 5.3 persons (*Instituto Naçional de Estatisticas*) has been used to estimate the target number of beneficiaries for this indicator.

2. **Direct project beneficiaries (percentage of whom are female).** This core indicator reflects an estimate of the population that directly benefits from activities/interventions supported by the project. This will be recorded as a cumulative amount, consisting of an estimate of the population directly benefiting from the new water supply connections and existing customers benefiting through improved quality of services (for example, increase in hours of supply). Census data has been used to determine the average household size and to estimate the proportion of beneficiaries that are female.

3. **Number of implemented and monitored regulatory frameworks with the regional utilities.** This PDO indicator specifically relates to key activities designed to strengthen regulation of water services, and includes establishment of a regulatory framework for each of the regional utilities, as a measure of progress towards the PDO.

4. **Number of completed and independently audited financial statements (annual).** This indicator has been included to measure progress towards the institutional strengthening activities related to the PDO. With support from the project, regional utilities will be created and financial statements for each utility will be completed and independently audited.

5. **New piped household water connections that are resulting from the project intervention.** This intermediary indicator measures the number of new connections to be installed under the project – an important input into the estimate of project beneficiaries.

6. **Piped household water connections that are benefiting from rehabilitation works undertaken under the project.** This indicator captures existing connections that are benefiting through the project investments, resulting in improvements to the quality of services provided. The utilities will record the number of household water connections which are benefiting households and update and report values to the Bank semi-annually. The number of connections will be used in addition to the number of new connections – with average household size data – to estimate the total number of direct beneficiaries for water supply service interventions.

7. **Length of water supply network laid under the project and operational (cumulative).** This intermediary indicator tracks progress through monitoring the number of kilometers of new water supply network installed under the project. This is important for extending coverage and increasing access to underserved areas.

8. **Increased capacity of the water systems** (treatment, production, and transport)**.** This intermediary indicator tracks progress through monitoring the amount of additional water which can be produced as a result of rehabilitation and expansion works implemented under the project. This is important for increasing availability of water in the system to meet demand.

9. **Average hours of water supply per day.** This quality-of-service indicator tracks progress of outcomes associated with the infrastructure investments under Component 1, including activities that focus on increasing production, improving network distribution, and reducing NRW. To a lesser extent it will also be influenced by institutional support activities implemented through Component 2. Baseline values reflect actual hours of supply of each system at the time of appraisal. These values are expected to increase throughout the project duration, as availability of water improves with support of project-financed investments. This indicator is measured at the distribution centers.

10. **Number of water utilities the project is supporting**. This core sector indicator measures the total cumulative number of utilities providing services supported by the Bank under the project. Particularly through activities under Component 3 the Bank will support the new utilities created in the northern, central, and southern regions of Mozambique.

11. **Incorporation of regional utilities as corporations.** This intermediary indicator is intended to track progress on the legal creation of the three regional utilities.

12. **Commercial systems operating in regional utilities.** This intermediary indicator tracks progress on the customization and installation of new commercial systems in each utility. The commercial systems include activities that focus on billing and commercial management, customer-service policies and procedures, and citizen engagement and complaints handling/recourse mechanisms.

13. **Audited collection ratio ((annual billings less the annual increase in gross receivables)/annual billings).** This important financial indicator will measure the overall collection ratio of annual billings. This ratio should increase over time, with the support of project interventions including installation of new commercial software and training.

14. **Development and implementation of corporate equal-opportunity policies/ procedures (addressing issues of gender and disability in particular).** This indicator will track progress with regard to institutional support for the regional utilities to develop and implement corporate policies and procedures which specifically address issues of gender inequality and disability.

15. **Number of subsidized house connections installed**. This indicator will track the progress of the output-based connection payment program to be implemented under Component 4, by measuring the number of verified connections installed.

16. **Number of subsidized house connections with continuous water service for three months.** This indicator will track and measure sustainability of the output-based connection payment program to be implemented under Component 4, by measuring the number of verified connections installed that continue to receive service after a three-month period.

17. **Number of low-income (poor) beneficiaries of the output-based connection subsidy.** Through this indicator the project will track the number of low-income families or people benefiting from the output-based connection payment program. These beneficiaries will represent a proportion of the total beneficiaries in project areas (PDO Indicator 2), but will also include beneficiaries in Maputo. The average household size of 5.3 persons will be used to calculate the number of beneficiaries.

18. **Implementation of 'Citizen Voice' tools and RECO procedures in project cities**. This indicator will track progress with regard to scaling up and rolling out the ICT-based platform to facilitate

customer complaints and consumer recourse. This system will include a specific module on grievances responded and/or resolved within the stipulated service standards for response times.

19. **Beneficiary surveys carried out -** This indicator directly relates to the quality of water supply services in project areas affected by the investments. It will be measured through beneficiary surveys or score-card assessments implemented by CRA before and after project interventions.

20. **Impact evaluation – completion of baseline and end-project surveys.** This indicator tracks the progress of the impact evaluation exercise, in which a baseline survey and analysis will be carried out before the application of project interventions and an end-project survey and analysis will be carried out before project closure in order to identify attributable impacts.

Annex 2: Detailed Project Description

MOZAMBIQUE: Water Services and Institutional Support Project II

Overview

1. WASIS II is a US$90 million IDA-financed project with the following PDOs: to (i) increase water service coverage in key cities of Mozambique 's territory; (ii) strengthen institutional and regulatory capacity for water supply services in the northern, central and southern regions of Mozambique's territory, and (iii) support Mozambique to respond promptly and effectively to an Eligible Crisis or Emergency.

2. The proposed project is a follow-on from the successful WASIS I (closed on October 31, 2015) and is designed to support the next phase of institutional reforms in the urban water sector. The reform process has been guided by the Government's water sector policy, including the delegated management framework, and has involved the creation of an institutional landscape that promotes: (a) a clear separation of functions (policy, investments, operation and service regulation); (b) autonomy, local/regional accountability and efficiency in service delivery; and (c) full cost recovery and financial sustainability. The long-term, strategic objectives of the sector reforms are to achieve universal coverage, to support independence through enabling self-financing or private-sector financing of investments, and to create robust institutional structures and supporting mechanisms that respond to local demands for sustainable water service delivery.

3. It is within this strategic sector context that WASIS II has been defined. The proposed institutional activities and infrastructure investments will support the long-term objectives of the reform process, particularly through increasing water service coverage in key cities and strengthening institutional capacity and regulatory frameworks for water supply services in the northern, southern, and central regions of Mozambique. Furthermore, the proposed investments aim to leverage wider economic benefits by focusing on growth poles, or strategic cities that are active centers of trade and commerce along important development corridors. These strategic cities have seen an increase in population above the country average due to in-migration. Some of the cities are the most affected by cholera epidemics, diarrheal diseases and stunting in children under five years of age due to lack of access to improved water and sanitation. In the last five years, 20 percent of cholera cases and six percent of diarrheal cases were concentrated in the cities of Pemba, Tete, and Beira. In addition, the Project will take full advantage of opportunities to reduce extreme poverty, by working within some of the poorest provinces in Mozambique and extending piped water services to predominantly low-income households in peri-urban areas. This will be supported by specific activities, including targeted payments to remove connection barriers for eligible households, technical assistance to refine pro-poor water tariff structures and to develop and mainstream citizen-engagement and gender-inclusive policies and procedures.

4. Specifically, the proposed Project consists of priority water supply investments in three major systems that serve five urban areas in the northern and central regions: (a) Pemba; (b) Beira and Dondo; and (c) Tete and Moatize. At the time the Project is presented to the IDA Board of Directors, there is a financing gap of US$56 million to complete all the activities described and appraised herein. The Government will endeavor to secure additional funds before the end of the second year of Project

implementation and has confirmed that investments in the cities of Tete and Moatize will not be undertaken prior to the financing gap being filled. As per the implementation plan, as long as the investments under Component 1 of the Project in the cities of Tete and Moatize commence by year two, these would expected to be completed within the expected Project timeframe. Should the financing gap not be filled by the end of year two, the project would be restructured and the activities realigned.

5. The project will also support the creation of regional water utilities in the Northern, Central and Southern regions of Mozambique.[10] The proposed infrastructure investments will enable an increase in coverage and will address key infrastructure constraints to improving efficiency and quality of services. Furthermore, the proposed water supply infrastructure will support and leverage institutional objectives, including the creation of the regional utility companies.

6. WASIS II has been structured in five components. A detailed description of the activities to be financed under each Component is provided below.

Description of Activities by Component

Component 1: Rehabilitation and Expansion of Water Supply Production and Distribution (Total Cost: US$116.1 million; IDA Financing: US$66.5 million; Financing Gap: US$49.6 million).[11]

7. The proposed project will finance priority water supply investments in three major systems serving five urban areas in the northern and central regions: (a) Pemba; (b) Beira and Dondo; and (c) and Tete and Moatize[12]. The proposed production and distribution investments will enable an increase in coverage and will address key infrastructure issues that constrain the efficiency and quality of services. Furthermore, the proposed water supply infrastructure will support and leverage institutional objectives, including the creation of the regional water utilities.

8. **Subcomponent 1a: Rehabilitation and Expansion of Water Supply Production (US$66.1 million).** Subcomponent 1a aims to increase the production capacity in the three systems serving Pemba, Beira and Dondo, and Tete and Moatize[13] through rehabilitation, replacement and construction of new civil, electrical and mechanical works. Key activities will include expansion and refurbishment of wellfields, refurbishment of an existing intake, and expansion and refurbishment of water treatment facilities (all of which currently exist). In addition, it will include the rehabilitation and expansion of transmission infrastructure, including new pipelines along existing corridors (existing alignment), pump stations and associated fittings.

9. **Subcomponent 1b: Rehabilitation and Expansion of Water Distribution (US$50 million).** Subcomponent 1b investments focus on water distribution and include the development of priority infrastructure to increase service coverage and improve operational efficiency of the three water

[10] Strategic and financial advisory services for the establishment of regional water utilities are being provided by the International Finance Corporation (IFC).
[11] Includes contingencies costs
[12] Investments in Tete and Moatize will not commence until the financing gap has been filled
[13] Investments in Tete and Moatize will not commence until the financing gap has been filled

distribution systems. Investments will include rehabilitation of existing and construction of new distribution centers, including increasing storage with ground reservoirs and pressure through elevated water towers within the existing footprint, water supply network expansion and rehabilitation, installation of district meters and pressure control valves within existing pipelines, and approximately 60,000 new household meters and associated materials for yard connections. The sub-component will also finance goods and equipment in the target cities related to water supply and utility management (including computers, monitoring systems, office equipment, generators, pipes, valves, pumps, miscellaneous water treatment equipment, and transportation.

10. A more detailed description of the context, technical issues and proposed investments in each system is provided below.

Pemba (Production and Distribution Works)

11. Pemba is the capital city of Cabo Delgado province (the northern-most province of Mozambique). It is a coastal city located on a peninsula in Pemba Bay with a population of around 160,000 people. It contains an important port, which serves as the main shipping and trade terminals for Cabo Delgado and Niassa provinces. In addition, the city supports a significant tourism industry with key natural attractions located in close proximity. Pemba city has been identified by the Government as a strategic city for economic growth and development, supporting off-shore oil and gas developments (in Palma District), new mining industries within the province, and increased agricultural productivity. As such, it has been confirmed that the deep-water port will be expanded to support this growth. Other associated transport infrastructure developments are also planned (for example, rail and road expansions and improvements).

12. The Pemba water supply distribution system is supplied primarily by a production wellfield (Metuge) developed during the colonial period, located some 50 kilometers west of the city. The production and transmission system comprises eight operational boreholes, a treatment plant for iron and manganese removal (aeration, sedimentation and rapid filtration) with a nominal design capacity of 15,000 m^3 per day, a single ductile-iron (450 mm diameter) transmission pipeline, and a series of pump stations and distribution centers (including storage).

13. FIPAG is in the process of equipping and connecting new boreholes, which will have combined capacity to supply up to around 18,000 m^3 per day if the operating systems are optimized. Currently, however, due to constraints in the transfer system, including significant losses, water supplied to the distribution system has been estimated to be around 12,000 m^3 per day.

14. The existing water supply infrastructure covers approximately 69 percent of the population (of which about 46 percent are served by household connections and 23 percent by public standpipes) and supplies about six hours per day on average to the existing customers. NRW rates are around 29 percent, which is a reduction from highs of about 45 percent in 2010 – due partly to network rehabilitation works carried out under the original WASIS, but also due to declining water pressure as coverage has increased. Water quality remains an issue, with high levels of iron and manganese being detected, as reflected by a low percentage of water samples passing regulatory standards (79 percent). The total distribution network is approximately 326 kms, with some 15,000 active connections; the average consumption per connection is around 18 m^3 per month. It has been estimated that some 35 percent of

the existing household connections consume less than 5 m^3 per month (or less than 32 liters per person per day), which falls under the lowest tariff band. The collection ratio for 2014 was estimated to be 92 percent.

15. Existing production is low and unable to meet existing demands (i.e., service is provided for about 6 hours per day), but the situation is projected to deteriorate. At existing population growth rates, the demand is expected to increase to around 31,900 m^3 per day by 2025. Through the project investments, FIPAG aims to address the key infrastructure issues to enable supply of approximately 14 hours per day for about 80 percent of the population and to provide reliable supply for the growing industrial and commercial sectors. Furthermore, the objective is to address water quality issues to meet regulatory standards (>95 percent samples passing).

16. To facilitate the achievement of these priority service objectives, FIPAG has identified and prioritized key production and distribution infrastructure investments for Pemba at an estimated cost of around US$49.7 million. This includes but is not limited to the following.

- Rehabilitation and construction of around 15 boreholes, including equipment and connections to increase production from the wellfield to around 30,000-32,000 m^3 per day (i.e., an additional 12,000-14,000 m^3 per day). Investments will also include the installation of a telemetry system for the boreholes for improved operations and management.
- Rehabilitation and expansion of the existing iron removal plant to a capacity of 30,000 m^3 per day, including a new pumping station, transformers and a standby generator.
- Rehabilitation of the existing transmission main and construction of a new transmission main of 50 km of about 500 mm diameter ductile-iron pipe.
- Refurbishment and expansion of transmission pumping stations, including electromechanical and civil works.
- Construction of a new distribution center to increase storage and improve supply to higher zones, including a ground reservoir with 1,000 m^3 capacity, a 250 m^3 water tower, dosing equipment and a pumping station.
- Rehabilitation of the existing distribution centers: an underground reservoir, pump station and water tower.
- 140 km of network construction in Pemba (100 km expansion plus 40 km rehabilitation, including transference of connections).
- Supply of 15,000 meters and materials for connections.
- Installation of district water meters and control valves in the distribution system to help manage and optimize operations.

17. These proposed investments have been informed by technical diagnostics carried out by consultants and reviewed by the Bank team during project preparation. Feasibility studies, including consideration of alternatives, have been prepared along with concept designs for the key infrastructure components.

18. The proposed investments will increase water production and improve water quality and the efficiency and effectiveness of the transmission systems (through rehabilitation of the existing system and development of a parallel line). These investments, combined with the new distribution storage and network expansions, will enable FIPAG to improve coverage and service standards (including hours of supply and water quality).

19. The Bank's review confirmed that the proposed investments are aligned with the service objectives of FIPAG and address the key technical issues identified. They are considered technically sound concepts, supported by a feasibility study and other technical investigations. Cost estimates were reviewed and were considered reasonable for planning purposes. At appraisal, the demand projections and calculations for planning the number of connections and length of distribution network expansion were reviewed and verified. The procurement packaging and implementation timeframes were reviewed from a technical perspective and it was confirmed that the approach incorporates lessons learned though the original WASIS and is considered achievable within the project duration. Advance procurement has commenced for the detailed design and construction contract of the 50 km (DN 500 mm) transmission main in Pemba, including the rehabilitation of the existing transmission main. Furthermore, the proposed investments complement and build upon water supply activities implemented under the original WASIS and will support the strategic institutional objectives.

Tete and Moatize (Production and Distribution Works)[14]

20. Tete is an inland city on the western side of the central region situated along both sides of the Zambezi River. The town of Moatize is located some 15 km to the north, along the road to Malawi. The combined population of Tete and Moatize is approximately 263,000 and is growing rapidly due to recent economic growth stimulated by large developments in the mining industry, with coalmines operated by Vale, Rio-Tinto and Jindal located in close proximity.

21. Tete and Moatize are served by three independent water supply systems operated by FIPAG. The water supply service coverage is around 80 percent of the population (about 60 percent through individual connections and 20 percent through public standpipes), supplying about 19 hours per day on average. The system draws water from three main wellfields, two of which are located adjacent to the Zambezi River. The raw water supplied to the northern side of Tete (Matema) and Moatize meets service quality standards and is dosed with chlorine only. Ground water from the Nhartanda wellfield has experienced higher levels of iron and manganese and is passed through an aeration, sedimentation and rapid filtration treatment system with a design capacity of about 12,000 m^3 per day before distribution.

22. NRW rates are high, at around 42 percent (an improvement from about 49 percent in 2009), but water quality is generally good, with issues experienced only from the Nhartanda wellfield. The total distribution network is approximately 320 km with some 30,887 active connections. Average consumption in Tete/Moatize is higher than in other cities, at around 22 m^3 per month, due to availability of water and limitation of other water sources. It has been estimated that some 24 percent of the existing household connections consume less than 5 m^3 per month (or less than 32 liters per person per day), which is under the lowest tariff band. The collection ratio estimated for 2014 was around 94.3 percent.

[14] Investments in Tete and Moatize will not commence until the financing gap has been filled

23. The medium-term (10 years) demand for water is projected to be around 55,000 m^3 per day. This includes 20,000 planned new connections and a significant increase in commercial and industrial customers (to around 20 percent of the total demand). The existing production capacity of the wellfield has been estimated to be around 44,000 m^3 per day after ongoing refurbishment works to equip and connect new boreholes. Therefore, production capacity needs to be increased by at least 11,000 m^3 per day to satisfy medium-term projections.

24. The critical issues for the Tete and Moatize water supply system is the rapidly growing demands from new household connections and industrial and commercial connections. This has placed pressure on the existing water production facilities and distribution system and has the potential for adverse impacts on service standards. Groundwater studies confirm that the source (Tete and Nhartanda) is sufficient to meet existing needs and projected demands, but investments are required to further develop the production and treatment facilities and the distribution system. Securing the supply of water to Moatize (where the source has reached its capacity) is also considered a high priority issue for the water supply system.

25. FIPAG aims to address the key infrastructure issues to enable approximately 20 hours per day supply for around 80 percent of the population and to provide reliable supply for the growing industrial and commercial sectors. Furthermore, the objective is to maintain water quality compliance with regulatory standards (>95 percent of samples passing).

26. To meet these service objectives, FIPAG has identified and prioritized key production and distribution infrastructure investments for Tete and Moatize. Costs are estimated around US$42.3 million (to be confirmed after detailed design is completed), which includes but is not limited to the following:

- Rehabilitation and construction of boreholes, including equipment and connections to increase production from the wellfield to approximately 55,000 m^3 per day (an additional 11,000 m^3 per day). Investments will also include the installation of a telemetry system for the boreholes for improved operations and management.
- Construction of a new transmission main of 1 km of about 500 mm diameter ductile-iron pipe.
- Rehabilitation and expansion of the existing iron removal plant treating water from Nhartanda to about 22,000 m^3 per day capacity (expansion up to an additional 10,000 m^3 per day), including rehabilitation of existing clear water reservoirs, a new pumping station and associated electrical and mechanical equipment and fittings.
- Construction of a new transmission main to connect Moatize to the Tete wellfield – about 25 km of 350 diameter ductile-iron pipe.
- Construction of two new distribution centers to increase storage and improve supply to higher zones: a ground reservoir with 2,000 m^3 capacity, a 250 m^3 water tower, dosing equipment and pumping stations.
- Network construction of 150 km in Tete and Moatize (120 km expansion plus 30 km rehabilitation including transference of connections).

- Supply of 20,000 meters and materials for connections.
- Installation of district water meters and control valves in the distribution system to help manage and optimize operations.

27. These proposed investments have been informed by technical diagnostics carried out by Consultants and reviewed by the Bank team during project preparation and are in line with the water supply master plan recently completed and adopted by FIPAG (2014). Groundwater studies have been carried out to confirm availability and quality of the water source, and concept designs have been prepared for the key infrastructure components.

28. The proposed investments will increase water production to meet medium-term demands, provide water security to Moatize, and improve water quality and the efficiency and effectiveness of the raw water transmission systems from the Nhartanda wellfield. These investments, combined with the new distribution centers and network rehabilitation and expansions, will enable FIPAG to improve coverage of household connections, provide reliable supply of water to industrial and commercial customers, and improve service standards (including hours of supply).

29. At appraisal, the cost estimates were reviewed and considered reasonable for planning purposes. Demand projections and calculations for planning the number of connections and length of distribution network expansion were also reviewed and verified. The procurement packaging and implementation timeframes are technically sound and incorporate lessons learned through the original WASIS. The proposed investments complement and build upon water supply activities implemented under the original WASIS and will support the strategic institutional objectives.

Beira and Dondo (Production and Distribution Works)

30. Beira is the second largest city in Mozambique, with a population of around 513,000. It lies in the central region of the country in Sofala Province. It is a coastal city, on the mouth of the Pungue River, hosting the regionally-significant Port of Beira which acts as a gateway for both the central interior portion of the country as well as the land-locked nations of Zimbabwe, Zambia and Malawi. The city is considered part of an economic growth corridor supporting key industries, including tourism and commodity trade and exports, including mining products from Moatize. Dondo is a town of around 80,000 people, located some 40 km northwest of Beira. It is readily accessible from Beira via the national highway (EN6) and is closely linked to Beira with regard to economic growth and development.

31. Beira and Dondo are serviced by a single water supply system. The source is the Pungue River, some 80 km northwest of the city. The intake is located on the outer bank of a branch of the Pungue River (called Dingue Dingue) and was designed with provision for an abstraction capacity of 90,000 m^3 per day.[15] Water is transferred some 12 km via pipeline (1,000 mm diameter pipe) and discharges to a longitudinal canal for pre-treatment (sedimentation), before entering the water treatment facility.

32. The existing water treatment plant was developed in four phases: (a) ETA1 in 1953 – 20,000 m^3 per day; (b) ETA2 in 1974 – 10,000 m^3 per day; (c) ETA 3 in 1997 – 30,000 m^3 per day; and (d)

[15] Existing electrical and mechanical fittings are for up to 60,000 m^3 per day.

ETA1 expansion/rehabilitation in 2007 – additional 10,000 m^3 per day (ETA1 total of about 30,000 m^3 per day). The total design capacity of the three units is 70,000 m^3 per day, which when fully operational is sufficient to cover the existing demand. However, the treatment plant is currently not running at full capacity – ETA2 is out of service, and both ETA1 and ETA3 require rehabilitation/refurbishment to improve the efficiency and effectiveness of the treatment process. The actual production from the treatment plant is currently around 40,000-45,000 m^3 per day, with the potential to increase capacity to around 60,000 m^3 per day with rehabilitation of ETA1 and ETA3. Alternatively, the full rehabilitation and expansion of ETA2 will consider covering the gap.

33. The treated water is transferred via two pipelines to distribution centers in Beira and Dondo. The transmission mains include a 1,000 mm diameter pipe and a 700 mm diameter concrete pipe, both around 70 km in length. There are some 910 km of network distribution pipes and approximately 53,000 active connections. The existing water supply infrastructure covers approximately 74 percent of the population (about 45 percent of the population with individual connections and 29 percent supplied through public stand posts), supplying water approximately 14 hours per day on average.

34. NRW rates are estimated at around 34 percent. Water quality remains an issue, with high turbidity, as reflected by a low percentage of water samples passing regulatory standards (<90 percent). The average consumption per connection is around 13 m^3 per month and it is estimated that some 32 percent of the existing household connections consume less than 5 m^3 per month (or less than 32 liters per person per day), which is under the lowest tariff band. The collection ratio for 2014 was estimated to be 89 percent.

35. While existing production is low and unable to meet existing demands (i.e., supply is limited to about 14 hours per day), the situation is projected to deteriorate. At existing population growth rates, the demand is expected to increase to in excess of 90,000 m^3 per day by 2025.

36. Key technical issues for the Beira/Dondo water supply system include inefficient and insufficient production and transmission capacity, an ineffective water treatment process affecting water quality, and high technical losses in the transmission and network distribution system. It is also worth noting that the existing system consists largely of older infrastructure that is nearing its technical lifetime and, as such, operational and maintenance issues are frequent. The system in Beira is experiencing a substantial increase in demand associated with a growing urban population and rapid development of new large industries.

37. The infrastructure investment needs for the Beira/Dondo system are large, but due to limited funds, FIPAG has prioritized activities to remain within the available financing envelope. The objectives are to restore function of the production and treatment system to the nominal capacity of 60,000 m^3 per day, which, combined with investments to reduce NRW being financed by the government of the Netherlands and network expansion under the project, will increase the availability of water, expand coverage, and improve the quality of services and operational efficiency. The Netherlands NRW Reduction Project – at a total cost of €6.5 million in technical assistance – started in January 2015. After approval of the Inception Phase documents by the Dutch government, project implementation is expected in 2016.

38. The estimated cost of the priority works is around US$18.5 million, which includes but is not limited to the following:

- Rehabilitation of the Dingue-Dingue water intake to the original design flow, including replacement of gabions and installation of new pumps and electrical/ mechanical equipment.
- Refurbishment of the existing water treatment system and the pre-treatment canal (to about 60,000 m^3 per day).
- Network construction of 100 km in Beira/Dondo (70 km expansion plus 30 km rehabilitation, including transference of connections).
- Supply of 25,000 meters and materials for connections.
- Installation of district water meters and control valves in the distribution system to help manage and optimize operations.

39. FIPAG, with the support of consultants, has carried out technical studies to identify and confirm the above priority works, including confirmation of the availability of water from the existing source. FIPAG has also identified additional investment requirements to meet medium- and longer-term demands (these will require additional financing). During the early stages of project implementation, a water treatment specialist will be engaged to carry out the diagnostics and prepare a reference design to define the works requirements and performance specifications for the water treatment and production facilities.

40. The investment planning concepts and preliminary cost estimates have been appraised and are considered reasonable. The procurement packaging and implementation timeframes are technically sound and incorporate lessons learned though the original WASIS. Furthermore, it is confirmed that the proposed investments are aligned with the service objectives of FIPAG and address high-priority key technical issues identified. Moreover, they will support the strategic institutional objectives by expanding the customer base and improving operational efficiency and quality of services.

Component 2: Institutional Support (Total Cost: US$18.9 million; IDA Financing: US$12.5 million; Financing Gap: US$6.4 million).

41. The focus of institutional support activities to be implemented under Component 2 will be on supporting the decentralization of FIPAG operations by creating and strengthening three regional utilities. This reform process will enhance the separation of functions and corporate governance structures, enable further autonomy, local accountability and efficiency in service delivery, and promote financial sustainability. The long-term strategic objectives of the sector reforms are to achieve universal coverage, support independence through enabling self-financing or private-sector financing, and create robust institutional structures and supporting mechanisms that respond to local demands for sustainable water services. This approach is in line with the Government's water policy objectives, builds upon the strategic programmatic sector developments supported by previous Bank projects, and has been informed by analytical work and advisory services contracted directly by FIPAG with IFC.

42. More specifically, outside of the Maputo region (which already operates independently from FIPAG), FIPAG intends to establish three regional utilities (Southern, Central and Northern) and to

transfer operations of the systems within each region to the new companies. In the near term, FIPAG will retain 100 percent ownership of the new regional utilities, but ultimately will seek to attract private sector participation (and financing) through long-term contracts. The composition of the regional companies considers geographic constraints and the need to be locally/regionally accountable/responsive and seeks to achieve economies of scale within the regions and to promote financial sustainability through the establishment of a critical mass of systems.

43. The infrastructure investments supported by Component 1 focus on strategically important systems within the central and northern regions that will support and leverage the reform process.

44. The composition of the regional utilities[16] is presented in the map in Annex 7. A summary of operational performance / characteristics for each region (2014 data) is presented in Table 2.1.

Table 2.1: Operational Characteristics and Key Performance Indicators for FIPAG Regional Operational Areas (excluding Maputo) – Based on Year-end 2014 Results

Characteristic/Indicator	North	Central	South	Total
Estimated Population in Service Area	1,391,688	1,489,168	374,689	3,255,545
Total Connections	63,629	132,981	64,548	261,158
Connections as a percent of total FIPAG and AdeM connections	14%	28%	14%	56%
Household Connections	61,322	133,305	63,875	258,502
Population served by household connections	23.4%	47.4%	90.4%	42%
Water produced annually (m^3 thousands)	23,235	39,873	15,576	78,684
Average daily production (m^3 thousands)	64	109	43	216
Water billed annually (m^3 thousands)	15,357	28,098	11,487	54,942
Average monthly consumption per connection (m^3)	20.1	17.6	14.8	17.5
NRW (based on billed volume)	33.9%	29.5%	26.3%	30.2%
Number of employees	524	807	403	1,803
Employees per 1,000 connections	8.24	6.07	6.24	6.90

[16] **Southern Region**: Xai Xai, Chokwe, Maxixe and Inhambane, **Central Region**: Beira, Dondo, Chimoio, Manica, Gondola, Quielimane, Tete and Moatize, **Northern Region**: Angoche, Nampula, Nacala, Cuamba, Lichinga and Pemba.

45. The Bank-financed activities under this component will include technical assistance to support FIPAG in the creation of the regional utilities and training and support for the companies during the initial stages of operations. The support for the utilities will include the development of commercial operational systems, including activities which focus on billing and commercial management, customer service policies and procedures (include citizen engagement, gender and disability considerations, and complaints handling/recourse mechanisms), and establishment of corporate governance structures, policy and procedures, including human resources issues associated with skills/professional development and equal opportunity/gender policies. Priority activities may also include key technical subjects, including asset management systems and NRW reduction programs. This component and the activities to be financed will be flexible and responsive to the needs/demands of the newly created regional utilities.

46. This component will also finance the necessary engineering, design and supervision costs for implementation of Component 1 infrastructure works. It will also support technical assistance to FIPAG for the implementation of the Project, including project management, training, project audits, and various technical studies as needed, studies for preparation of follow-up projects, and environmental and social safeguards activities.

Component 3: Output-Based Payments for Low-Income-Household Connections (Total Cost: US$6.0 million; IDA Financing: US$6.0 million).

47. The objective of Component 3 is to increase access to piped water connections for low-income households in the project cities and the Maputo Region by providing an output-based payment to the utilities. This component has been specifically designed to support the provision of services to the poor by maximizing the uptake of connections for low-income households. This will be achieved by supporting demand and removing barriers to connections – including customer fees – through grant payments that will reimburse the connection fees for verified, eligible connections.

48. This component will build upon the successful experience of the recently closed Global Partnership for Output-Based Aid Project (P104945), which supported about 30,000 connections in peri-urban areas of Maputo. While continuing the support for connections in Maputo, the model will also be replicated and scaled up by extending support through an output-based approach to the project cities in the central and northern regions.

49. The connections will be implemented by the utilities and verified by a third party (independent verification agent) contracted by FIPAG. The output-based payments would be made by FIPAG to the utilities based on the results of the verification process in two phases (i) after the installation of functioning yard-taps to eligible households (70 percent payment); and (ii) after the demonstration of continued service and billing for a period of three months (30 percent payment). The second phase of verification is intended to support continuity of service delivery.

50. The output-based payment will cover the works cost of installing new connections (currently between MZN2,000 and 3,000, or US$48–US$72 equivalent per connection). Approximately 70,000 yard-taps are expected to be supported over a six-year period.

51. In addition to covering the costs of eligible connections, this component will finance the verification process and beneficiary surveys. The verification process will ensure that eligibility requirements are adhered to, providing assurance towards the component objectives of targeting and expanding access specifically for the poor. Socio-economic characteristics of beneficiaries (including gender considerations) and service quality indicators will be tracked to inform willingness and ability to pay and tariff reviews, sustainability considerations and risks to development outcomes more generally. A beneficiary survey will be carried out upon completion to support the evaluation of impacts for these specific pro-poor activities.

52. The Operating Manual for the recently closed Global Partnership for Output-Based Aid project will be adapted during the early phases of project implementation to provide specific guidance and implementation details for the activities under this component. This will include the definition of eligibility, indicators to be monitored, and the schedule for verification and reporting. This Operating Manual will be part of the Project Implementation Manual, which is a condition of effectiveness.

Component 4: Contingent Emergency Response (Zero-budget)

53. This component will support potential disaster-recovery needs in FIPAG water systems by providing immediate response to an eligible crisis or emergency, as needed. This may include supply of critical parts and equipment, minor civil works rehabilitation, supply of fuel, rent of generators, and rapid transportation of chemicals and critical parts by express mechanism. It is a zero-budget disaster-recovery contingency component that may be triggered in the event of a disaster (either natural or man-made). Upon triggering, reallocation of project funds from other project components and activities can be undertaken to facilitate rapid financing of goods, works, and services.

54. This contingency financing mechanism draws from the lessons and experience of implementation under the original WASIS and increased knowledge of changing hydrological and meteorological conditions in Mozambique. Specifically, during the WASIS life cycle, a number of IDA-financed activities, and FIPAG's operations, more generally, were affected by natural disasters (including severe flood events and droughts). Mozambique is particularly exposed to tropical cyclones and is also the third most at-risk country in terms of water and weather-related hazards in Africa. Related to the impacts of climate change, there are also indications of an increase in the frequency and intensity of extreme events. Component 4 has been introduced into the Project to enable FIPAG to respond rapidly to such events through emergency rehabilitation and recovery activities. This will support FIPAG to continue delivering services during challenging circumstances. It is crucial to restore a minimum level of water supply immediately to avoid the spread of disease. During the original WASIS this support was limited to fuel, electricity, and some replacement parts; this proved insufficient to quickly reestablish services in the face of serious natural disasters. By having a specific component in the project, FIPAG can advance expenditures to reestablish the services quickly and be reimbursed later. This was not possible in the original WASIS I.

Component 5: Capacity Building and Operational Support to CRA (Total Cost: US$5.0 million; IDA Financing: US$5.0 million).

55. The objective of this component is to expand and refine service quality and financial regulatory mechanisms for urban water supply in Mozambique. This component will provide resources for operating expenses and technical assistance to enable CRA to support the implementation of existing regulations in the country over a six-year period. This includes support for the expansion of the regulatory framework (the *Quadro Regulatório*, which defines areas of regulatory oversight[17]), which is signed between CRA and FIPAG and incorporated into the contracts between FIPAG and the newly created Regional Utilities, and reviews of the structure and form of subsidies for low-income customers and of financing the extension of water to low-income urban households. As part of the review of subsidies for low-income customers, CRA will monitor and assess gender and poverty implications.

56. As part of expansion of regulatory oversight, CRA will support the regional utilities to improve key performance indicators and data management systems by gradually establishing procedures for the utilities to report information within the country system. The system will be aligned with the IBNET database. The data will foster benchmarking among the companies, generate information for decision making, and promote improvements in services provided. The system will also contribute to the attainment of targets with respect to the country vision and development goals.

57. **Beneficiary assessment.** The expansion of coverage supported by the project is focused largely on improving access to water for the urban poor in peri-urban areas. Related to this, tariff levels and their structure will be reviewed, taking into account willingness/affordability-to-pay surveys. Surveys will be done periodically in three cities – one in each region – to better understand the effect of current tariff structures and possible improvements to support consumption, as necessary, by low-income households.

58. **Impact evaluation.** In addition, the component will finance a detailed impact evaluation to measure and assess outcomes related to the Project's institutional and infrastructure investments. Details of the impact evaluation are described in Annex 6 of this Project Appraisal Document. It is intended that the outputs from this exercise will assist the Government's investment planning processes and inform sector policy and tariff discussions. For the impact evaluation, CRA activities will include (a) contracting with specialized institutions or entities to undertake the impact evaluation; (b) ensuring that all documentation produced for the impact evaluation is properly monitored and reviewed; (c) assessing the overall quality of the field work and analysis; (d) ensuring access to relevant information and survey sites; and (e) ensuring transparency and accountability of the collected survey information and reporting.

59. **RECO.** CRA is implementing a strategy to decentralize some aspects of regulatory oversight closer to customers in secondary and tertiary cities, including through the use of ICT instruments. Additional activities to be financed under the component will include the scaling up of the ICT-based platform for customer complaints and support for recourse mechanisms (RECO), which was piloted under the original WASIS. Furthermore, the project will support the creation of local regulatory mechanisms to monitor and enforce some parameters of regulations locally, including the identification

[17] For example, service quality standards, utility performance efficiency, water tariff and tax setting, consumer protection, and reporting obligations.

and training of community representatives and focal points who will comprise a Local Regulatory Commission, a new mechanism that was also introduced and supported through the original WASIS. This exercise will be supported by the gradual implementation and roll-out of the RECO system within the southern, central, and northern regions.

60. The component will also provide goods, operational support, capacity building and training, the installation of the RECO, including equipment, technical assistance to CRA, and studies, namely for better targeting of subsidies to the poor, review of the tariff structure, and development of tools to regulate sanitation services. In addition, it will finance the baseline and end-of-project surveys and analysis for the impact evaluation.

Annex 3: Implementation Arrangements

MOZAMBIQUE: Water Services and Institutional Support Project II

Project Institutional and Implementation Arrangements

1. Institutional and implementation arrangements under the project have been informed by IDA's experience working with FIPAG and CRA over the past 15 years. During that time, and through the implementation of several large infrastructure and capacity-building projects, FIPAG and CRA have developed significant implementation capacity. Their ongoing capacity to manage all aspects of WASISII has been confirmed during project preparation and appraisal.

2. Components 1, 2, and 4 of the project will be implemented by FIPAG, the water supply asset-holding agency, which is also responsible for investments in urban water supply. FIPAG with the support of the Independent Verification Agent, will also oversee the implementation of activities to be financed under Component 3, although the connections to eligible low-income households will be made by the regional utilities and AdeM in Maputo. IDA and Mozambique will enter into a Financing Agreement (FA), IDA and FIPAG and CRA will enter into Project Agreements respectively. MoEF will enter into Subsidiary Agrements with FIPAG for the purpose of implementation of Components 1, 2, 3, and 4 and CRA for the purpose of implementing Component 5. The terms and conditions of the Subsidiary Agreement between MEF and FIPAG will be the same as in the FA, and the respective amounts shall be converted to Meticais at exchange rates applicable at the time of disbursement of the relevant proceeds of the financing to FIPAG.

3. Since its establishment in 1998, FIPAG has been directly involved with the implementation of a large number of projects financed by the Bank and other development partners. The fiduciary, safeguards, and monitoring and evaluation systems used by FIPAG are integral parts of the agency and are acceptable to the Bank. FIPAG shall implement the above components through its Projects and Investment Directorate, which has experience implementing projects financed by the Bank and the African Development Bank, among others, including the original WASIS (closed on October 31, 2015) and on-going water investments in Nacala financed under the Integrated Growth Poles Project.

4. The Projects and Investment Directorate is led by a director who reports directly to the director general of FIPAG. Reporting to the director are two department chiefs, an environmental specialist, and three assistants to the department chiefs. A procurement specialist is currently being recruited. Individual consultants will be engaged to support the team in procurement, contract management and for specialized engineering support.

5. Component 5 will be implemented by CRA, which successfully implemented Component C under the original WASIS and also implements a component under the on-going, IDA-financed GMWSP. As is the case with FIPAG, CRA is familiar with Bank policies and requirements.

Financial Management, Disbursements and Procurement

6. Activities related to Components 1 – 4 and Component 5 will rest with FIPAG and CRA, respectively. Both of these institutions have implemented Bank-financed operations for several years with no significant FM issues identified. These agencies will follow their established procedures implemented through ongoing IDA projects. Both FIPAG and CRA already have satisfactory FM arrangements, including arrangements related to budgeting, accounting, funds flow, internal controls, financial reporting, and external auditing.

7. The experience of the implementing entities' will play a key role in helping to commence activities without the delays that are often encountered during project implementation. They already have experienced personnel, an updated FM manual, and adequate coordination within their institutions.

Project Budgeting

8. The Project will not make use of aspects such as the Government's single treasury account and the Government's Integrated Financial Management Information System or Electronic State Financial Administration System; instead it will use the Primavera accounting software to monitor budget execution and will report on its budget execution to the National Directorate of Public Accounting.

Internal Controls and Accounting Procedures

9. As the Project will use the institutions' existing financial management systems, the internal controls and accounting will similarly be based on the national procedures used in the institutions' day-to-day operations. CRA and FIPAG will be responsible for ensuring that the internal controls of the project are effective and functioning. However, the *Inspecção Geral das Finanças* (Inspector General of Finances) within the MEF and the *Gabinete de Auditoria Interna* (Cabinet of Internal Auditory will be responsible for conducting independent, objective internal audit/inspections in FIPAG and CRA. These normally take place on a yearly basis and are based on risk profiles of the institutions.

10. FIPAG and CRA are already familiar with Bank procedures and are currently implementing Bank-financed projects in a satisfactory manner. Both already have acceptable financial procedures manuals, which they will continue to use. In addition, FIPAG has an internal auditor who reports to the director general regarding the institution's risks, internal controls, and compliance.

Staffing

11. FIPAG and CRA have financial departments headed by experienced finance managers who are aided by accountants who have also been actively involved in ongoing World Bank-financed operations. Management and staff have participated in various training exercises in financial management and in disbursements procedures administered by the Bank. The mix of skills and qualifications within both of these institutions is sufficient to manage the complexities of the operation.

Accounting System

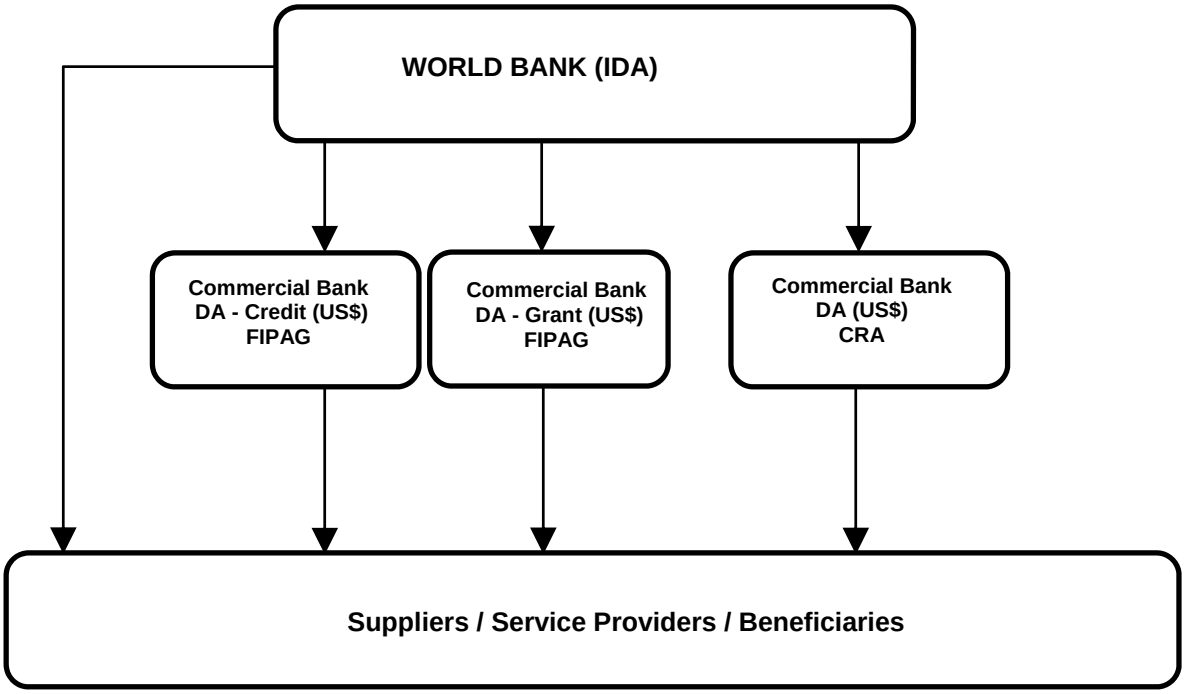
12. FIPAG and CRA already use the Primavera accounting package, which is assessed as adequate for the implementing entities' needs. The preparation of the accounting information will be on a cash basis, in accordance with the Government's requirements, which are also in alignment with the International Public Sector Accounting Standards.

Funds Flow and Disbursements Arrangements

13. There will be three designated accounts (DA) – two managed by FIPAG and one by CRA, respectively – which will be opened in commercial banks acceptable to IDA. One DA under FIPAG will be used for disbursements from the IDA Credit, while the other will be for disbursements under the IDA Grant. Project expenses paid by FIPAG and CRA will be made from those accounts, as shown in figure 3.1.

14. Both implementing entities will use transaction-based disbursements (statements of expenditure) through the use of advances. However, IDA will not advance funds with regard to Component 3, only reimburse for eligible connections verified by the independent verification agent. The Project may also use other disbursement methods/procedures such as: (a) reimbursement disbursement method, whereby the Bank reimburses the Borrower for eligible expenditures that the Borrower has pre-financed from its own resources; (b) direct payment method, by which at the Borrower's request the Bank makes direct payments to suppliers and contractors from the credit account; and (c) the special commitment method, whereby the Bank will issue special commitments to commercial banks for payment of eligible expenditures.

Figure 3.1: Funds Flow



Reporting

15. FIPAG and CRA will separately provide their quarterly reports directly to the Bank, as they are currently doing for other operations. The summary information generated by Primavera will be the basis of the reports to be submitted to the Bank. The formats of these quarterly reports was agreed during negotiations and will be prepared and submitted to the Bank within 45 days of the end of each calendar quarter. These quarterly reports will include:

- sources and uses of funds;
- detailed use of funds schedule by project component/disbursement categories; comparison with budgets; and short-term forecasts of expenditure; and
- a narrative summary of implementation highlights for the quarter.

16. FIPAG and CRA will also have separate audit reports for the project activities related to each institution; these will be conducted by private-sector audit firms in accordance with International Standards on Auditing. Aligned with current practices, these will have appropriate disclosures in the notes to the financial statements indicating the summary receipts and payments of IDA funds. The annual project financial statements will incorporate all activities and will be prepared in accordance with International Public Sector Accounting Standards on a cash basis. They will specifically include, although not be limited to:

- a statement of sources and uses of funds showing funds from IDA and how they were applied;
- a summary of expenditures analyzed by both component and category;
- supporting notes with respect to significant accounting policies and accounting standards adopted by management;
- DA activity for the year showing deposits and replenishments received, payments substantiated by withdrawal applications, interest that may be earned on the account and the balance at the end of the fiscal year; and
- summary of withdrawals, listing individual withdrawal applications by reference number, date, and amount.

External Auditing

17. Normally, audits of both implementing entities are carried out by private-sector audit firms; these arrangements will not change. FIPAG and CRA already submit their respective annual audits to the Bank as part of their on-going Bank-financed operations.

18. Each of the implementing entities will submit to the Bank one set of project audited financial statements, along with the auditor's report and management letter (incorporating management's comments) covering identified internal control and accounting system weaknesses. These will be submitted to IDA within six months of the end of each fiscal year; a single audit opinion will be issued covering each of the implementing entities' IDA-funded receipts and payments and DAs.

19. Within six months of the end of each fiscal year, both implementing entities will submit their entities' annual financial statements, with the appropriate disclosures in the notes to the financial

statements regarding the receipt and use of IDA funds. In addition, FIPAG will submit the audited annual financial statements and respective management letters for companies in which FIPAG may be a shareholder, i.e., that of *Águas de Maputo* and, when they are established, *Águas de Sul*, *Águas do Centro and Águas do Norte.*

Table 3.1: Table of Audit Compliance Requirements

Action	Submission Date	By Whom
Submit annual entity audited financial statements together with the management letter	Annually by June 30	FIPAG
Submit annual entity audited financial statements together with the management letter	Annually by June 30	CRA
Submit annual entity audited financial statements together with the management letter for the companies in which FIPAG is a shareholder	Annually by June 30	FIPAG

Table 3.2: FM Action Plan

Action	Indicative Date	By Whom
Agree on formats of interim financial reports	Agreed	FIPAG/CRA Bank

Procurement

20. Procurement activities for the proposed project will be carried out in accordance with the World Bank's 'Guidelines: Procurement of Goods, Works, and Non-consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers', dated January 2011, revised July 2014, and 'Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers', dated January 2011, revised July 2014, and the provisions stipulated in the Financing Agreement for the project.

21. Further, the 'Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits & Grants', dated October 15, 2006 and revised in January 2011, will apply.

22. The following activities form part of the Project and are subject to Bank procurement procedures:

Works. Works contracts procurement under the Project may include, among others, the rehabilitation and expansion of water supply production and distribution systems, which includes wellfields, intakes, water treatment systems, transmission mains, distribution centers, networks, district meters and pressure control valves, and household meters.

Goods. Goods procurement under the Project may include, among others, water pumps, generators, pipes and associated accessories, valves, miscellaneous water treatment equipment, vehicles, office and information technology equipment, and monitoring systems.

Consulting services. Consulting services selection may include, among others, the necessary engineering design, design checks and supervision for implementation of infrastructure works on wellfields, intakes, treatment plants, transmission mains, distribution centers and networks, impact assessment reviews and citizens' voice surveys, advisory services to the regional utilities and FIPAG, and support to the regulatory agency.

Particular Methods of Procurement of Goods, Works and Non-consulting Services

23. **International Competitive Bidding (ICB)**. Except as otherwise provided below, goods, works and non-consulting services shall be procured under contracts awarded on the basis of ICB.

24. **Other Methods of procurement of goods, works, and non-consulting services**. Table 3.3 shows the procurement methods, other than ICB, that may be used for procurement of goods, works, and non-consulting services for those contracts specified in the Procurement Plan.

Table 3.3: Procurement Methods other than ICB

(a) National Competitive Bidding (NCB), subject to the additional procedures for NCB below.
(b) Shopping
(c) Direct Contracting

Additional Procedures for NCB

(a) **General**

The procedures to be followed for NCB shall be those set forth in the national regulation, with the modifications described in the following paragraphs.

(b) **Eligibility**

No restriction based on nationality of bidders and/or origin of goods shall apply. Foreign bidders shall be allowed to participate in NCB without restriction and shall not be subject to any unjustified requirement which will affect their ability to participate in the bidding process such as, but not limited to, the proof that they are not under bankruptcy proceedings in the recipient's territory; have a local representative; have an attorney resident and domiciled in the recipient's territory; or form a joint venture with a local firm. In cases of joint ventures, they shall confirm joint and several liability.

Prior registration or obtaining a license or agreement shall not be a requirement for any bidder to participate in the bidding process.

The recipient's government-owned enterprises or institutions shall be eligible to participate in the bidding process only if they can establish that they are legally and

financially autonomous, operate under commercial law, and are not dependent agencies of the recipient.

(c) **Bidding Documents**

Standard bidding documents acceptable to the Association shall be used for any procurement process under NCB.

(d) **Preferences**

No domestic preference shall be given for domestic bidders and/or for domestically manufactured goods.

(e) **Applicable Procurement Method under the Regulation**

Subject to these NCB exceptions, procurement under NCB shall be carried out in accordance with the regulations for public competition (*Concurso Público*) method.

(f) **Bid Preparation Time**

Bidders shall be given at least 28 days from the date of the invitation to bid or the date of availability of bidding documents, whichever is later, to prepare and submit bids.

(g) **Bid Opening**

Bids shall be opened in public, immediately after the deadline for their submission in accordance with the procedures stated in the bidding documents.

(h) **Bid Evaluation**

(i) Qualification criteria shall be clearly specified in the bidding documents, and all criteria so specified, and only such criteria so specified shall be used to determine whether a bidder is qualified; the evaluation of the bidder's qualifications should be conducted separately from the technical and commercial evaluation of the bid. Qualification criteria shall be applied on a pass or fail basis.

(ii) Evaluation of bids shall be made in strict adherence to the criteria declared in the bidding documents; criteria other than price shall be quantified in monetary terms.

(iii) A contract shall be awarded to the qualified bidder offering the lowest-evaluated and substantially responsive bid.

(iv) Bidders shall not be eliminated on the basis of minor, non-substantial deviations.

(i) **Rejection of All Bids and Re-bidding**

All bids shall not be rejected and new bids solicited without the Association's prior concurrence.

(j) **Complaints by Bidders and Handling of Complaints**

The recipient shall establish an effective and independent complaint mechanism allowing bidders to complain and to have their complaint handled in a timely manner.

(k) **Right to Inspect/Audit**

In accordance with paragraph 1.16(e) of the Procurement Guidelines, each bidding document and contract financed from the proceeds of the financing shall provide that: (i) the bidders, suppliers, and contractors and their subcontractors, agents, personnel, consultants, service providers or suppliers, shall permit the Association, at its request, to inspect their accounts, records and other documents relating to the submission of bids and contract performance, and to have them audited by auditors appointed by the Association; and (ii) the deliberate and material violation by the bidder, supplier, contractor or subcontractor of such provision may amount to obstructive practice as defined in paragraph 1.16(a)(v) of the Procurement Guidelines.

(l) **Fraud and Corruption**

Each bidding document and contract financed from the proceeds of the financing shall include provisions on matters pertaining to fraud and corruption as defined in paragraph 1.16(a) of the Procurement Guidelines. The Association may sanction a firm or individual, at any time, in accordance with prevailing Association sanctions procedures, including by publicly declaring such firm or individual ineligible, either indefinitely or for a stated period of time: (i) to be awarded an Association-financed contract; and (ii) to be a nominated sub-contractor, consultant, supplier or service provider of an otherwise eligible firm being awarded an Association-financed contract.

(m) **Debarment under National System**

The Association may recognize, if requested by the recipient, exclusion from participation as a result of debarment under the national system, provided that the debarment is for offenses involving fraud, corruption, or similar misconduct, and further provided that the Association confirms that the particular debarment procedure afforded due process and the debarment decision is final.

Particular Methods of Procurement of Consultants' Services

(a) **Quality- and Cost-based Selection (QCBS).** Except as otherwise provided in paragraph (b) below, consultants' services shall be procured under contracts awarded on the basis of QCBS.

(b) **Other Methods of Procurement of Consultants' Services**. The following methods, other than QCBS, may be used for procurement of consultants' services for those contracts which are specified in the Procurement Plan.

Table 3.4. Other Procurement Methods for Consultants' Services

Procurement Method	
(a)	Selection under a Fixed Budget
(b)	Least-Cost Selection
(c)	Selection Based on Consultants' Qualifications
(d)	Single-Source Selection of Consulting Firms
(e)	Selection of Individual Consultants
(f)	Single-Source Procedures for the Selection of Individual Consultants

Review of Procurement Decisions by the Bank

25. The review thresholds are shown in table 3.5. The Procurement Plan sets forth those contracts which shall be subject to prior review by the Bank. All other contracts shall be subject to post review by the Bank. The Bank may, at its own discretion, require that a sample of contracts below the threshold be subject to prior review, at any time or when the Procurement Plan is updated.

Table 3.5. Provisional Thresholds for Procurement and Review Methods[18]

Expenditure Category	**Contract Value Threshold** (US$)	**Procurement/ Selection Method**	**Contracts Subject to Prior Review**
Works	≥10,000,000	ICB	All
	< 10,000,000	NCB	None
	< 100,000	Shopping	None
	-	Direct Contracting	All
Goods	≥1,000,000	ICB	All
	< 1,000,000	NCB	None
	<100,000	Shopping	None
	-	Direct Contracting	All
Consulting Services - Firms[19]	≥ 500,000	QCBS	All
	≥300,000 - < 500,000	QCBS	None
	< 300,000	CQS/ Other (QCBS/ FBS/LCS)	None
	-	SSS	All
Consulting Services – Individuals (IC) [20]	≥ 200,000	ICS	All
	< 200,000	ICS	None

[18] The thresholds may be revised from time to time, upward or downward, based on the continued assessment of the performance of the implementing agencies in FIPAG and CRA. Each agency may have its own prior review thresholds.
[19] All terms of reference should be submitted for Bank prior review.
[20] All terms of reference should be submitted for Bank prior review.

Expenditure Category	Contract Value Threshold (US$)	Procurement/ Selection Method	Contracts Subject to Prior Review
	-	SSS	All

Note: QCBS = Quality- and Cost-Based Selection; SSS = Single-Source Selection; FBS = Selection under a Fixed Budget; LCS = Least-Cost Selection; CQS = Consultants' Qualifications Selection; ICS = Individual Consultant Selection.

Procurement Plan

26. The recipient has developed a Procurement Plan for the first 18 months of project implementation. This plan is dated Feb 18, 2016. The plan will be made available in the project database, and in the Bank's external website after approval of the WASIS II. The Procurement Plan will be updated annually or as required to reflect the actual project implementation needs and improvements in institutional capacity.

27. The frequency of procurement supervision missions will be once every six months. Special procurement supervision for post procurement reviews will be carried out at least once every twelve months.

Environmental and Social (including safeguards)

28. The proposed WASIS II is a repeater of the original WASIS, which was a Category B project. WASIS II is also a Category B project. WASIS II will finance the same nature of investments as those financed by the original WASIS in the same locations in Mozambique, except for Tete and Moatize. In addition, the locations of infrastructure investments under both projects are similar – urban areas and rights-of-way of existing roads.

29. As stated above, the proposed WASIS II is rated as a Category B project, mainly due to the site-specific nature of its foreseen environmental and social impacts, and also the fact that activities will take place in an urban area and rights-of-way of existing roads, which are similar locations as WASIS I. WASIS II has triggered the following safeguard polices: Environmental Assessment (OP/BP 4.01), due to potential negative environmental impacts expected during the construction phase; Involuntary Resettlement (OP/BP 4.12), because the project may result in temporary or permanent loss of assets, i.e., crops or other means of income generation; and Projects on International Waterways (OP/BP 7.50), because the project will finance activities potentially affecting two international rivers, the Pungue River and the Zambezi River.

30. An ESMF and RPF were prepared and disclosed for the original WASIS. As WASIS II is also rated as Category B and as activities will take place in similar locations, these two instruments (ESMF and RPF) have been updated and disclosed in Mozambique. The ESMF was disclosed on August 12, 2015 in Beira, Dondo, Tete, Moatize, and Pemba. A second disclosure was carried out on September 21, 2015 in the same cities. The ESMF was disclosed in country a third time on February 16, 2016 after being disclosed in the Bank's InfoShop on February 11, 2016. The RPF was disclosed in all cities on September 21, 2015 and in the Bank's InfoShop on February 11, 2016. Where necessary, Environmental and Social Impact Assessments, Environmental and Social Management Plans, and Resettlement Action Plans will be prepared and inserted in the works contracts obligations.

31. All the safeguards instruments indicated in the paragraph above will be used for project implementation; other relevant and applicable national regulations will respectively guide the project implementation phase, as well as serve as a due-diligence with which the Borrower has to comply.

32. **Institutional safeguards arrangements**: Implementation of the core recommendations of each of the safeguards instruments requires the establishment of a solid and well trained team of social and environmental specialists. Adequate staffing capacity and procedures exist within FIPAG, including specialists dedicated to oversight on similar projects, including the Category A GMWSP, whose implementation is ongoing, and the original WASIS. There is a strong record of experience with environmental and social safeguards aspects of projects financed by the World Bank and other international and bilateral donors. An ESMF and RPF were prepared by FIPAG and were reviewed and approved by the Bank, and disclosed for the original WASIS.

Immediate Response Mechanism

33. In order to ensure the proper implementation of Component 4, the recipient shall undertake no activities unless and until the following conditions have been met with regard to said activities:

(a) the recipient has determined that an eligible crisis or emergency has occurred, has furnished to the Association a request to include said activities in Component 4 in order to respond to said eligible crisis or emergency, and the Association has agreed with such determination, accepted said request and notified the recipient thereof; and

(b) the recipient has prepared and disclosed all safeguard instruments required for said activities, in accordance with the Immediate Response Mechanism Operations Manual, the Association has approved all such instruments, and the recipient has implemented any actions which are required to be taken under said instruments.

Monitoring and Evaluation

34. FIPAG and CRA monitor and record key sectoral indicators as part of their regular responsibilities as the sector asset holder and regulator, respectively. These indicators include most of the key performance indicators to be monitored as part of the project (connections, treatment capacity, water sales, etc.). Indicators specific to the project will be monitored by the project implementing staff as part of their project management tasks and included in regular project reporting.

35. Key performance indicators to be monitored under the project are described in Annex 1. These are largely a sub-set of indicators already tracked by FIPAG and build on an extensive database kept by CRA, which is monitoring the progress of network expansion and service connections. Progress will be assessed against the target indicators and corrective action taken as appropriate to ensure that the project goals are achieved. At the end of each year, the annual performance will be assessed by FIPAG and reported to the Bank. Performance indicators related to Component 5 will be the responsibility of CRA.

36. Monitoring of project implementation will take place as part of overall project management, with project staff regularly reviewing the status of procurement actions, contracts, payments, and

safeguard activities and determining corrective actions as necessary. Staff produces internal monthly management reports that are reviewed by FIPAG and CRA management.

37. For Components 1-4, quarterly reports will be prepared by FIPAG and sent to the Bank. Information on Component 5 will be provided by CRA to the Bank. The management reports will cover four main areas and include: (a) progress on the key performance indicators; (b) the status of contracts; (c) the status of procurement; and (d) payments and FM.

38. In addition to the above, a project impact evaluation will be carried out under Component 5. This will be implemented by CRA with support and coordination with FIPAG. Details regarding the methodology and implementation arrangements for the impact evaluation are provided in Annex 6.

Financial Conditions and Covenants

39. Project sustainability is heavily dependent on the ongoing financial sustainability of project investments, of FIPAG, as the holding company, and of the utilities operated directly by FIPAG and under the delegated management framework. The following legal and financial covenants have been established with the government and with FIPAG to ensure long-term sustainability. The recipient shall ensure that:

a. The tariffs for the water systems under the responsibility of FIPAG shall reflect the principle of full cost-recovery and shall be sufficient to cover operating expenses, depreciation, and cost of capital in a reasonable time horizon for all said systems. These tariffs shall be assessed yearly to ensure that they satisfy these requirements.

b. Within twelve months following the mid-term review, measures will be taken to cover the financing needs referred to in (a) as necessary.

c. the terms and conditions of the Subsidiary Agreement between FIPAG and the recipient with regard to financing shall have the same terms and conditions as the Financing Agreement between IDA and Mozambique, and the respective amounts shall be converted to *Meticais* at exchange rates applicable at the time of disbursement of the relevant proceeds of the Financing to FIPAG

a. FIPAG maintains, at all times during the life of the project, contracts with the four regional utilities to operate the water supply assets under FIPAG's responsibility. The four utilities are: *Águas de Maputo*, *Águas do Sul*, *Águas do Centro* and *Águas do Norte*. The recipient shall ensure the following:

i. The regional utilities have been incorporated as corporations under the laws of the recipient, no later than November 1, 2016;

ii. FIPAG maintains, at all times during the project, contracts with the regional utilities to operate the water supply assets under FIPAG's responsibility; the said contracts shall address the financial obligations undertaken by FIPAG under various loans and credits extended to FIPAG and the sustainability of the future investments in the water supply systems, including any applicable lease fees payable to FIPAG.

iii. An escrow account shall be established for each regional utility, into which all revenues from the provision of services shall be deposited, for the purpose of the payment of applicable lease fees and operator tariff.

40. FIPAG will ensure that it: (a) covers 1.2 times its debt service requirements through its net revenues; and (b) does not incur any additional debt unless a reasonable forecast of its revenues and expenditures show that its projected net revenues for each fiscal year during the term of the debt to be incurred shall be at least 1.5 times the projected debt service requirements.

a. 'Debt" means any indebtedness of FIPAG maturing by its terms more than one year after the date on which it is originally incurred.

b. 'Debt' shall be deemed to be incurred: (a) under a loan contract or agreement or under other instrument providing for such Debt or for the modification of its terms of payment on the date of such contract, agreement or instrument; and (b) under a guarantee agreement, on the date the agreement providing for such guarantee has been entered into.

c. 'Net revenues' means the difference between: (a) the sum of revenues from all sources related to operations and net non-operating income; and (b) the sum of all expenses related to operations including administration, adequate maintenance, taxes and payments in lieu of taxes, and provisions for uncollected revenue, but excluding provision for depreciation, other non-cash operating charges and interest and other charges on debt.

d. 'Net non-operating income' means the difference between: (a) revenues from all sources other than those related to operations; and (b) expenses, including taxes and payments in lieu of taxes, incurred in the generation of non-operating revenues.

e. 'Provisions for uncollected revenue' means the non-cash expense related to uncollected revenue, and shall be a minimum of 50 percent of annual uncollected revenue.

f. 'Debt service requirements' means the aggregate amount of repayments of and interest and other charges on debt.

g. 'Reasonable forecast' means a forecast prepared by FIPAG not earlier than twelve months before the incurrence of the debt in question, which both the Association and FIPAG accept as reasonable and as to which the Association has notified FIPAG of its acceptability, provided that no event has occurred since such notification which has, or may reasonably be expected in the future to have, a material adverse effect on the financial condition or future operating results of FIPAG.

h. Whenever it shall be necessary to value, in terms of *Meticais*, debt payable in another currency, such valuation shall be made on the basis of the prevailing lawful rate of exchange at which such other currency is, at the time of such valuation, obtainable for the purposes of servicing such debt, or, in the absence of such rate, on the basis of a rate of the prevailing lawful rate of exchange at which such other currency is, at the time of such valuation, obtainable for the purposes of servicing such debt, or, in the absence of such rate, on the basis of a rate of exchange acceptable to the Association.

41. The recipient shall cause FIPAG to submit to CRA, by August 31 of each year, a proposal for tariff revisions based on the audited expenses of the prior financial year, with reasonable projections of the cost of service, including operating expenses, applicable depreciation, and cost of capital, for the following three financial years for each of the regional utilities; copy of said Proposal to be submitted to the Association upon delivery to CRA.

42. The recipient shall cause CRA to review and issue a resolution annually on the proposed tariff revision and reasonable projections of tariffs for the next three financial years by November 30 of each year, even if the adjustment of tariffs approved by CRA is zero. Should there be an increase in tariffs, CRA shall publish a resolution in the official gazette no later than December 31 of each financial year, followed by the implementation of the new tariff by March 1 of the following year.

Other Conditions

43. CRA shall collect, collate and analyze performance data for each regional utility and thereafter disseminate to the public such performance data and indicators through the IBNET database.

44. With respect to Component 3, no withdrawals shall be made before the independent verification agent has been hired in a manner satisfactory to the Association and upon submission to the Association to its satisfaction of the evidence mentioned in the PIM.

Annex 4: Implementation Support Plan

MOZAMBIQUE: Water Services and Institutional Support Project II

Strategy and Approach for Implementation Support

1. The Implementation Support Plan (ISP) provides the framework for the Bank's operational approach to supporting FIPAG's and CRA's implementation of WASIS II and monitoring implementation progress. The ISP has been developed taking into consideration: (a) the moderate risks identified for the Project; (b) the significant experience of FIPAG and CRA staff with respect to Bank and internationally financed projects; (c) the importance of large civil works contracts in overall implementation and in the achievement of the PDOs; (d) the importance of environmental and social safeguards; and (e) the role of FIPAG and the regional utilities' financial sustainability in the long-term sustainability of project investments and the reliability of water supply. The ISP team reflects these key considerations.

2. Three core activities form the foundation of the ISP: (a) close and ongoing communications with implementing agencies, in particular with respect to procurement and contract implementation issues; (b) receipt and review of quarterly project management reports prepared by the project implementing agencies; and (c) semi-annual implementation support missions to Mozambique, involving both headquarters and country office staff and technical consultants. This three-pronged approach will provide comprehensive support and oversight for project implementation and enable quick and responsive interactions between project officials and Bank staff.

Implementation Support Plan

3. Tables 4.1 and 4.2 outline the ISP and resources required for WASIS II.

Table 4.1. Implementation Support

Time	*Focus*	*Skills needed*	*Resource Estimate*	*Partner Role*
First twelve months (Year 1)	• Contract launch and management • Confirm reporting and monitoring and evaluation formats • Confirm financial reporting • Confirm safeguard monitoring and reporting • Technical assistance procurement	Team leader Engineer Procurement FM specialist Financial analyst Environmental specialist Social specialist Utility institutional specialist Impact evaluation specialist Team assistant	US$260,000	
12 – 48 months (Years 2 – 4)	• Contract management • Safeguards • Ongoing procurement • Civil works and engineering issues, if any	Team Leader Engineer Procurement FM specialist Financial analyst Environmental specialist	US$220,000 per year	

	• Monitoring and evaluation • FIPAG financial results • Project financial management	Social specialist Utility institutional specialist Team assistant		
49 – 72 months (Years 5 – 6)	• Contract closings • Safeguards • Civil works and engineering issues, if any • M&E • FIPAG financial results • Project FM • ICR preparation	Team leader Engineer Procurement FM specialist Financial analyst Environmental specialist Social specialist Impact evaluation specialist Team assistant	US$220,000 per year	
Mid-term review	• Contract management • Progress on civil works • Safeguards • Project sustainability • FIPAG financial results	Team leader Lawyer Engineer Procurement FM specialist Financial analyst Environmental specialist Social specialist Utility institutional specialist Monitoring and evaluation Team assistant	US$120,000	
Implementation completion reporting	• Project results and evaluation • Financial and economic analyses	Team leader Engineer ICR author Financial analyst Economist Impact evaluation specialist Team assistant	US$80,000	

Table 4.2. Skills Requirements

Skills requirement	***Staff Weeks per Year***	***Trips per Year***	***Comments***
Team leader	20	2	Washington, DC based
Lawyer	2	As required	Washington, DC based
Engineer	8	2	Washington, DC based
Environmental specialist	6	-	Country office based
Social specialist	6	2	Washington, DC based
Procurement specialist	8	-	Country office based
FM Specialist	4	-	Country office based
Utility institutional specialist	6	1	Washington, DC based
Impact evaluation specialist	2	1	Washington, DC based
Financial analyst	6	1	Washington, DC based
Team assistant	4	As required	Washington, DC based
Team assistant	4	-	Country office based

Annex 5: Economic and Financial Analysis

MOZAMBIQUE: Water Services and Institutional Support Project II

Part 1: Project Economic Analysis

Summary

1. The economic analysis covered the project's investments in each of the target cities. The analysis of the economic returns was based first on the expected project benefits during the life cycle of the project (30 years), related mainly to the improved health and time savings of project beneficiaries. Second, the cost analysis included investments for rehabilitation and expansion of water production and the extension of water distribution under the project. Finally, the economic analysis performed sensitivity and risk analyses.

Main Assumptions

2. The main economic benefits considered for the project are those accrued to households that have no formal connection to the network, and thus are predominantly poor. This approach sets the most basic identification of benefits conservatively. However, other benefits will accrue for those households that are already connected to the network through network rehabilitation and improvements in water provision continuity. For those households already with access to water through non-household piped premises, tubewells, or protected public wells, the main assumption is that with the presence of the program these will experience a net increase in water consumption by ten percent from their current consumption levels. The bottom line of the analysis is to identify those benefits that are fundamental to improving equity in the distribution of urban water supply to economically disadvantaged households. The final estimates of benefits should be considered a 'minimum floor' scenario because other unaccounted, tangible benefits exist. For instance, the Project's investments will improve the utility's ability to meter and bill water consumption, reduce NRW and improve overall management of water resources. For the Project's area of influence and affected population, these investments will have spillover effects on local employment, increased access of businesses to better water services, reduced uncertainties from water supply interruptions, improvements in property value, and enhancement of intra-household hygiene practices. Tangible benefits will be triggered through the Project's targeted investments aimed at improving overall water distribution efficiency to households already connected to the water network.

3. The main assumption for the value of incremental water for those households with new connections was that newly connected households would consume at the current average water consumption per capita. For those households with current water service connections, it is assumed that there will be an increase in consumption (ten percent) because these customers will be shifting to better water services, which will in turn trigger higher consumption of water with higher quality standards. This assumption of water consumption increases for currently connected households is justified because these households have low levels of (and constant) water consumption, so an increase in water availability for these households is unlikely to trigger substantially higher levels of water consumption. There will also be economic gains through the increase of quality and reliability of urban water services. With current low quality standards, households are pushed to rely on other water sources that may require storage or other activities to preserve safe water standards. Therefore, even when households have access to water, unreliable provision of water induces extra burdens through increased risks of

disease. For those households already connected to the network, there is no data available to estimate water demand curves and elasticity in these cities to approximate any shadow pricing of the incremental values of higher consumption.

Table 5.1. Baseline of Existing Connections by Type

	BEIRA/DONDO			TETE/MOATIZE			PEMBA		
Type of Connection	2010	2014	% change	2010	2014	% change	2010	2014	% change
Total active legal connections at the end of the year	33,842	52,369	54.7%	14,469	29,944	107.0%	10,992	15,235	38.6%
House connections	31,985	50,028	56.4%	13,593	28,881	112.5%	10,366	14,509	40.0%
Non residential connections Institutional	196	286	45.9%	233	370	58.8%	158	217	37.3%
Non residential connections Commercial	1,087	1,421	30.7%	249	461	85.1%	258	302	17.1%
Non residential connections Industrial	56	67	19.6%	30	63	110.0%	70	77	10.0%
Standpipes	518	567	9.5%	134	169	26.1%	140	130	-7.1%

4. The assumptions used to estimate the Project's benefits for new connections included the incremental value of water with new connections, the opportunity costs avoided from reducing time to fetch water, the avoided cost of days lost due to diseases, avoided costs of water-borne disease treatment, and other avoided costs. Averted burden of diseases and years of life lost (YLL) were added as benefits to beneficiaries based on the top five water-borne diseases[21] with the highest incidence rates. These indicators are reported by WHO, with YLL, and Disability-adjusted Life Years (DALY) weights tables, for all communicable diseases in 2012.

Table 5.2. Baseline for Main Water-borne Disease Incidence and Time to Fetch Water

Disease	**Beira**	**Tete**	**Pemba**
Malaria	13,771	9,813	5,221
Lower respiratory infections	20,183	12,383	7,637
Diarrheas	22,486	11,728	6,169
Neonatal sepsis	4,694	3,037	1,756
Pre-term birth complications (diarrhea during pregnancy)	8,191	6,478	3,745
Neonatal encephalopathy (solid contaminants in water)	1,015	457	316
Anemia	1,121	505	349
Malnutrition	10,068	4,787	2,915
All water-borne disease	81,529	49,188	28,108
Minutes to fetch water (average 2011-2014)	32.0	30.75	30.25

Note: Based on FIPAG core indicators data and GHE/YLL, WHO, 2012-2013.

5. These are only the accrued benefits to the population without access to water (the majority of them poor). The health benefits are relatively high because all waterborne diseases are included, and Mozambique ranks very high on leading age-standardized rates of DALY, including the YLL from

[21] These diseases are malaria, enteric diseases, diarrheas, acute respiratory infections and other infectious diseases related to water contamination. Trends in disease incidence changes were applied to obtain figures for 2014. Also, the *Inquérito Demográfico e de Saúde* was used to complement WHO tables.

water-borne diseases. These diseases include: diarrhea, malaria, lower respiratory infections, neonatal sepsis (pregnancy infections), pre-term birth complications (pregnancy diarrhea), neonatal encephalopathy (solid contaminants in water), anemia and malnutrition. In addition, the cholera disease burden was included where Mozambique (particularly Beira and Tete) has one of the highest rates in the world. The available country information on DALY for 2013 was prorated with the population per city. For cholera, DALYs were estimated from the incidence rates between December 2014 and May 2015 from the United Nations Office of Coordination for Humanitarian Affairs (OCHA). OCHA estimates 8,500 cases in Mozambique out of the 9,200 cholera outbreak cases reported in this period for affected Sub-Saharan Countries (including Malawi, Zimbabwe, Tanzania and Zambia). Given the high disease burden of water-borne diseases, the majority of benefits from the intervention accrue from water availability and water quality, and less so on changes in water consumption. The relative reduction in avoided cost of disease is more prominent than the relative increase in value of water because Mozambique consumes very low quantities per capita even in urban areas.

Table 5.3. Baseline Characteristics of Target Population, Connections Increase, and Burden of Disease for Three Cities

					For Water Borne Diseases without Cholera*			Cholera Outbreaks**		
City	Population (000)	Target Population	Water Connections (000)	Added Connections (000)	DALY (000) for Households	YLL (000) Households	% of YLL to DALY	DALY (000) for Households	YLL (000) Households	% of YLL to DALY
Beira	593.1	106	50.5	25.0	85.8	11.2	13.1%	3.3	1.3	40%
Pemba	161.5	79.5	14.1	15.0	23.5	1.9	8.1%	1.1	0.6	55%
Tete	263.3	106	29.8	20.0	38.2	2.1	5.4%	3.2	2.3	70%
Total 3 Cities	**1,018.0**	**291.5**	**94.4**	**60.0**	**147.4**	**15.2**	**10.3%**	**7.7**	**4.2**	**55%**

Table 5.4. Main Water-borne Diseases DALY and YLL in Mozambique's Urban Areas (2014)

Disease	**DALY rate 000s**	**YLL**	**Ranking of Burden of Disease for Mozambique ***
Malaria	19.2	3,258	14
Lower Respiratory Infections	16.5	1,112	4
Diarrheas	28.6	842	7
Neonatal Sepsis	20.4	616	13
Pre-term birth complications (diarrhea during pregnancy)	7.6	558	8
Neonatal encephalopathy (solid contaminants in Water)	18.3	537	14
Anemia	3.8	305	4
Malnutrition	4.5	326	7
All water-borne disease average	17.1	944	8.9
Cholera outbreaks**	5.5	3.1	N/A

Source: WHO, GOB (UofW).

Note: One DALY represents the loss of the equivalent of one year of full health. Using DALYs, the burden of diseases that cause early disability due to disease, DALYs in Africa for water-borne diseases are at least two times higher than in any other region. YLL are cumulative years lost due to premature death, weighted by age. DALYs include YLL.

*The numbers indicate the rank across 15 countries for each cause in terms of highest age-standardized DALY rates, with 1 as the best performance and 15 as the worst.

For cholera information based on OCHA and based on estimates from Ali, Nelson, Lopez and SACK (2015) Updated Global Burden of Cholera in Endemic Countries. PLOS NTD. No. 9 Vol. 6.

6. Other benefits were estimated based on (a) the incremental value of water provided via new household connections; (b) the health benefit through cost reduction and disease incidence and burden reductions for newly-connected households; and (c) the economic benefit from improved economic means or extra earnings of households based on the associated gains in wages from time savings from fetching water. For those households with existing connections, the benefits were added based on increased water consumption which is a result of improved reliability and continuity of service with the project. Because household water consumption thresholds have been historically low and steady, a reasonable increase in consumption of ten percent was assumed for existing connections as a proxy for other tangible benefits from the project for these types of subpopulation. The cost components included the expansion of household connections, rehabilitation and water distribution costs, and output-based subsidized connections.

7. These assumptions were made based on the context of the target cities. Without the Project, residents have to take measures to find sources of water and treat it for cooking and drinking purposes. Common costs related to fetching water are (a) journeys to collect water from a source nearby (river, stream, or collective point); and (b) the opportunity cost of time to conduct activities requiring water outside the household. Common household practices for drinking and cooking water are (a) boiling water; (b) purchasing bottled water; and (c) filtering or chlorination. Benefits were transformed in monetary values based on the most recent (2014) monthly minimum wage rate (MZN5,402) and a daily wage rate of MZN207.8 (MZN5,402 per 26 days of labor per month). Shadow pricing for wages were not considered in the estimates of the opportunity costs involving wage rates. This is because, according to the *Doing Business Report* on Labor Regulations (2015), Mozambique's ratio of minimum wage to value added per worker is 1.5, so there is already an implicit non-market valuation added in the minimum wage and thus shadow pricing for this wage threshold would overestimate benefits.

Table 5.5. Demand and Coverage of Project's Cities

City/Urban Area	% Households Consuming Less Than 5 m^3 per month	Demand Increase (m^3 per day, thousands)	Average Consumption per Connection (m^3 per month)	Total Budget (US$ millions)
Beira/Dondo	32	90	10	23.6
Pemba	24	29	12	59.7
Tete/Moatize[22]	35	55	13	44.6
Total	**30**	**58**	**12**	**127.9**

[22] Investments in Tete and Moatize will not commence until the financing gap has been filled

Table 5.6. Service Coverage (Household Connections)

Area	Existing (%)	Projected (%)	Change (%)
Beira/Dondo	46	58	13
Pemba	46	87	41
Tete/Moatize[23]	61	93	31

8. For gains in the incremental value of water, the assumptions made in terms of consumption are supported by the most recent distribution of consumption across cities. Households in the lowest segments of the water consumption distribution would then benefit relatively more compared to average- or high-consuming households. In Beira, 32 percent of households have average consumption of 5 m^3 per month or less, whereas Pemba has 24 percent of households with these consumption thresholds. The city of Tete[24] shows the highest percent of households in the lowest segment of the water consumption distribution (close to 35 percent). For one-third of the households in each city, average consumption levels were imputed (see Financial Analysis on average consumption per city). Finally, for the rest of the households the average threshold of national consumption was imputed uniformly for all three cities (close to 10.2 m^3 per month).[25]

9. Discount rates of twelve percent were used to discount values over a 30-year period. The discount rate was set high to be conservative in the estimates and to internalize any project implementation risk and threats to the distribution of benefits. The selection of the twelve percent discount rate is closer to the rate used by the Mozambican Central Bank (around nine percent) and the IMF recommendation of a discount rate for investment projects including country-based external borrowing risks of between 8-11 percent. The exchange rate assumed throughout the period of analysis is 42 meticais per US dollar.

10. Avoided economic costs were accounted based on changes in time lost with daily journeys to collect or fetch water. According to survey data[26], the average time spent per person to collect water in 20-liter containers is about 25-30 minutes per trip, and four trips are required per day per household. For washing clothes and baths an additional 30 minutes are required. The economic cost of time was valued as women and children are generally in charge of this chore. The average cost of *lack of access to piped water* is about US$300 per household per year, where the cost of an added water household connection for the water utility (FIPAG) is around US$240.

11. Finally, there are additional benefits that are worth highlighting that could not be estimated due to data limitations. These benefits are related to the improved efficiencies in the utilities, which are a significant part of the resources allocated through the project. The project will aim to improve metering and billing collection, reduce leakages from deteriorating distribution infrastructure, decrease inefficiencies in distribution systems, and reduce illegal connections to the water network. However, back-of-the-envelope calculations provide a threshold or reference point of the magnitude of these (monetized) benefits distributed in each city.

[23] Investments in these cities will not start until the financing gap is filled
[24] Investments in these cities will not start until the financing gap is filled
[25] Based on FIPAG: Core Operational Information, FIPAG 2010 – 2015
[26] Based on field data FIPAG and Demographic and Health Survey (2011) in Mozambique. Also see http://www.who.int/water_sanitation_health/monitoring/jmpfinal.pdf

12. Each city under the project will have different gains from improved efficiency of the utility through the current household connections, additional capacity expanded (in m^3 per day), the average household consumption (m^3 per day), the expected improvement in NRW (percentage), and the average tariffs paid. For Beira, there are 47,050 connections with an average consumption of 10 m^3 per month per household and a total consumption of 5.7 million m^3 per year. With additional capacity of 15,000 m^3 per year and an average of MZN23 per m^3 paid by each household, the total value of this expansion translates into MZN130 million (around US$3 million per year). An improvement of ten percent in efficiency from this value will add up to US$6.6 per household (an increment of US$1.1 per month from current consumption levels). In the case of Pemba, there are 14,340 connections with an average consumption of 12 m^3 per month per household and consumption reaching 2.1 million m^3 per year. With additional capacity of 15,000 m^3 per year and an average of MZN24 per m^3 paid by households, the total value of this expansion translates into MZN49.6 million (around US$1.2 million per year). An improvement of 10 percent in efficiency from this value will add up to US$8.2 per household (an increment of US$1.4 per month from current consumption levels). Finally, Tete has 29,800 connections with an average consumption of 13 m^3 per month per household and consumption reaching 4.6 million m^3 per year. With additional capacity of 10,000 m^3 per year and an average of MZN19 per m^3 paid by households, the total value of this expansion translates into MZN88.3 million (around US$2.1 million per year). An improvement of ten percent in efficiency from this value will add up to US$7.0 per household (an increment of US$1.20 per month from current consumption levels). These estimations give a sense of the nature of these benefits distributed per city. The contrast of these figures with actual utility efficiency gains that will be estimated by FIPAG will provide concrete data on these benefits.

Results

13. Findings from the economic analysis indicate that the project is expected to generate positive socio-economic returns. The net economic benefits for three urban centers (Pemba, Beira/Dondo, Tete/Moatize[27]) reaches US$33.4 million at a discount rate of twelve percent. The ERR for the project is estimated to be 28.6 percent. Around half of the project benefits (49.5 percent) are the result of avoided costs of disease, reductions in health-care costs and the avoided burden of disease, while an additional 35.2 percent of benefits are due to time savings and direct economic benefits to households. The remaining benefits are generated from the incremental value of water (15.2 percent).

14. Comparing the returns for the three cities receiving the majority of project investments, Beira/Dondo shows the highest ERR – 36 percent. Pemba's ERR is estimated at 25 percent. Finally, Tete/Moatize[28]'s ERR is estimated at 19 percent. Differences in the estimated ERRs are due both to lower initial investment costs in some cities and to the variation in expected benefits, because the three cities show substantially different water access rates, poverty headcount ratios and health/disease indicators.

[27] Investments in Tete and Moatize will not commence until the financing gap has been filled
[28] Investments in Tete and Moatize will not commence until the financing gap has been filled

Table 5.7. Main Supply Indicators by City

City/Urban Area	Total New Connections (thousands)	Water Coverage Household Connections Total (%)	Hours of Supply per Day	NRW (%)	Supply (m^3 per day thousands)	Active Connections (thousands)
Beira/Dondo	25	46	14	34	60	47.1
Pemba	15	43	6	30	17	14.3
Tete/Moatize[29]	20	60	19	40	29	29.8
Total	**60**	**50**	**13**	**35**	**35**	**30.4**

Table 5.8. Project ERRs

	ERR (%)	Contribution to Total Investment Costs (%)	Cities Investments (US$ millions)
Beira/Dondo	36.2	18.4	23.6
Pemba	24.9	46.7	59.7
Tete/Moatize	18.9	34.9	44.6
ALL CITIES	28.6	100	127.9

Table 5.9. ERR for New and Existing Connections by City

	New Connections	Existing Connections*	Total
City	**Estimated ERR (%)**		
Pemba	18.1	6.8	24.9
Beira/Dondo	28.2	8.0	36.2
Tete/Moatize[30]	14.3	4.6	18.9
Weighted Average	**22.1**	**6.5**	**28.6**
*Note: Assuming a consumption increase of 10 percent.			

[29] Investments in Tete and Moatize will not commence until the financing gap has been filled
[30] Investments in Tete and Moatize will not commence until the financing gap has been filled

Table 5.10. NPV for New and Existing Connections by City

	New Connections	Existing Connections	Total
	Estimated NPV (US$ thousands)		
Pemba	5,000	1,655	6,655
Beira/Dondo	11,250	4,085	15,335
Tete/Moatize[31]	8,750	2,660	11,410
Total	**25,000**	**8,400**	**33,400**

Sensitivity and Risks

15. The sensitivity analysis estimated the project's ERR based on changes in costs and benefits driven by: (a) investment and operating cost overruns; and (b) reductions in health or overall benefits (including incremental water). Sensitivity analysis for the basic scenario of 60,000 new connections showed that project costs would have to increase by 40 percent, and benefits would need to be reduced by 30 percent to reach an ERR of 11.94 and 12.05 percent, respectively with a B/C ratio of 2.8 and 2.9, respectively. In addition, with a scenario of a cost overrun of 30 percent and a drop in benefits of 20 percent the ERR will change to 13.5 and 17.2, respectively. Changes in the number of connections would also shift the ERR.

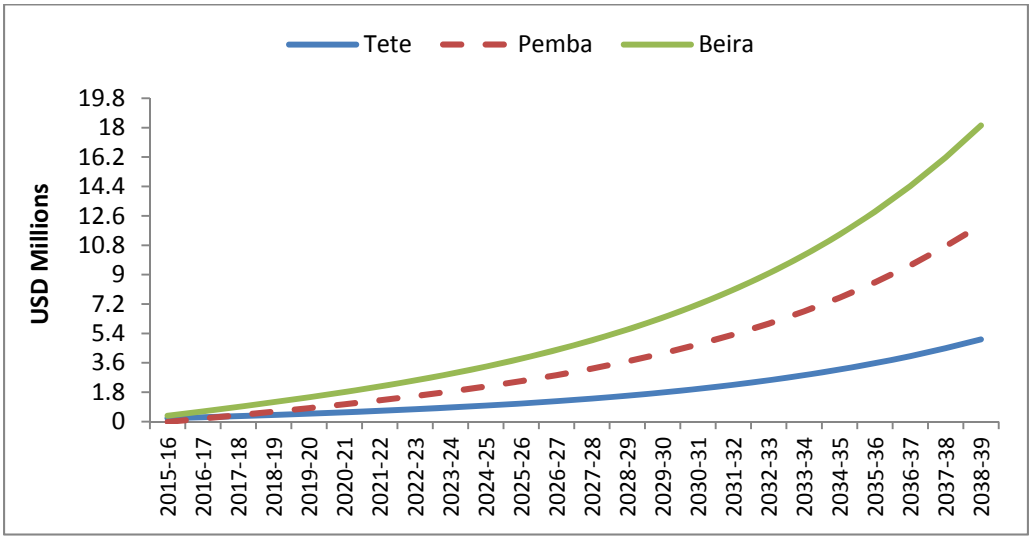
16. Delays in project implementation, insufficient delivery of works and cost overruns are the main risks that can modify the overall and per city economic returns. By underachieving water connections, there is a risk of reduced economic returns of the project. A drop of 10 percent in targeted connections (6,000 connections) will reduce the ERR to 11.5 percent, and a drop of 20 percent in connections will push down the ERR to 8 percent.

Table 5.11. Sensitivity Analysis for New and Existing Connections

	ERR (%)
Base Case	28.6
Cost Overruns	
Increase of 30%	18.0
Increase of 40%	15.8
Benefits Decrease	
Decrease 20%	21.3
Decrease in 30%	15.7
Change in Connections	
Drop by 10%	11.5
Drop by 20%	8.0

[31] Investments in these cities are not financed under WASIS II

Figure 5.1. Projections of Economic Benefit Flows by City (Not Discounted)



Part 2: Project Financial Analysis

17. ASIS II intends to finance, as described in this Project Appraisal Document, various investments related to (a) water production and supply; and (b) water distribution networks and household connection materials. In addition, the project will finance institutional strengthening technical assistance to the regional utilities, output-based subsidies for low-income households to connect to formal water supply systems, and capacity building and operational support to the Mozambican water regulator – CRA. Infrastructure investments will be targeted to three operational systems: Pemba, in FIPAG's northern operational region, and Beira/Dondo, and Tete/Moatize[32], in FIPAG's central operational region. The target systems have been selected first through an economic analysis, which analyzed the most effective investments based on their relative costs and benefits.

18. This analysis reviews the expected financial results of the proposed project on the three operational systems, taking into account all capital investment costs, all estimated operating costs related to the project investments over a 30-year period, including maintenance costs of the project-financed infrastructure, and revenues generated by the investments. The analysis reviews the expected net operational financial results generated by the project investments for each of the systems, calculating (a) an estimated NPV based on a discount rate of ten percent and (b) an estimated IRR. An aggregate project NPV and IRR is also calculated. The analysis also reviews the degree to which net operating revenues are able to cover the debt service obligations resulting from the project credit.

19. This analysis also presents FIPAG's recent financial results as well as its projected financial results taking into account the proposed project and financing. The review analyzes the degree to which FIPAG is able to maintain the financial covenants that have been established between FIPAG and the Bank under existing projects and loans. These covenants will continue under WASIS II.

20. Inputs into the financial analysis are provided below. Capital investments are expected to be made in years two through four of project implementation, with water available beginning in year five.

[32] Investments in Tete and Moatize will not commence until the financing gap has been filled

Network extension and new connections would begin in year four, with water sales, for the purposes of the financial projections, beginning as well in year five.

Table 5.12. Capital Investment Costs (US$ millions)

	Pemba	Beira/Dondo	Tete/Moatize[33]	Total
Water supply and distribution, including engineering	54.2	17.4	38.4	110.0
Household meters and other materials	3.1	5.2	4.2	12.5
Total	**57.3**	**22.6**	**42.6**	**122.5**

21. Note that the above costs do not include amounts that will be provided to the Project on a grant basis. This includes an estimated US$6 million that the Project will provide as output-based subsidies to support connections for low-income households, US$5 million in technical assistance to CRA or institutional support (including engineering services related to the Project) provided to FIPAG on a grant basis. In addition, the above figures do not include contingencies.

22. Revenues generated as a result of project investments have been estimated primarily based on expected new connections and water sales to those connections. In cities where current water consumption is clearly limited by existing supply constraints, projections include small increases in consumption for existing household consumption. In addition, in Pemba, where a number of commercial and industrial customers are expected to connect to the system once additional water is available, an increase in commercial consumption is also incorporated. It is expected that project-related connections will be installed in years four through seven of the project, i.e., following completion of investments to increase water supply. Table 5.13 provides an overview of assumptions regarding new connections, related consumption, and billings.

Table 5.13. Post-Project Assumptions with Regard to Consumption and Revenues

	Pemba	Beira/Dondo	Tete/Moatize	Total
Additional water production capacity (m^3 per day)	15,000	15,000	10,000	40,000
Current household connections	14,340	47,050	29,800	91,190
Post-project household connections	29,340	72,050	49,800	151,190
Average new household consumption (m^3 per month)*	12	10	13	12
Average household tariff (MZN per m^3)	24	23	19	24
Collection Ratio	95%	95%	95%	

* Note: Average household consumption of 10m^3 averages approximately 60 liters per person per day (based on an average household size of 5.3 persons).

23. Ongoing operating costs related to the delivery of water have been estimated based on existing cost patterns related to personnel, electricity and chemical costs, and non-staff maintenance costs. Minor efficiencies are assumed with respect to the number of new staff required for billing and collection for new customers. Additional efficiency improvements would improve the financial results of the project investments.

[33] Investments in Tete and Moatize will not commence until the financing gap has been filled

Table 5.14. Post-Project Assumptions with Regard to Cost of Service Provision

	Pemba	Beira/Dondo	Tete/Moatize[34]	Total
Staffing ratio (for network and commercial staff only) (staff per 1000 connections)	2.5	3.4	2.5	2.6
Number of new water treatment staff	5	-	8	13
Average staff cost (MZN per staff per month)	18,857	20,642	17,903	19,134
Electricity (MZN per m^3 produced)	1.638	0.778	0.899	0.947
Chemicals (MZN per m^3 produced)	0.217	0.899	0.034	0.498
Non-staff maintenance expense (% of asset value, annually)	0.25			

24. **Inflation and tariff adjustments; exchange rate.** The financial analysis has been undertaken assuming an inflation rate of two percent, which is incorporated into operating costs and tariff revenues. In practice, Mozambique does not currently incorporate automatic tariff increases indexed to inflation; in the recent past, tariffs have been adjusted every several years, in general meeting past inflation increases and providing a small real increase as well. With regard to the exchange rate, the original investments are costs in US dollars; operating company expenses and revenues are in Mozambican meticais. An exchange rate of 42 MZN per USD is used throughout the evaluation period.

25. **Baseline results.** Financial projections indicate that net financial returns generated from the project investments using the above baseline assumptions result in a negative NPV at a discount rate of ten percent and an IRR well below the discount rate for all of the target cities. The aggregate IRR is estimated to be 4.7 percent, with an NPV of negative US$54.9 million at a ten percent discount rate. The IRR is, however, above the expected cost of the IDA credit (0.75 percent).

26. These results are not surprising, given that the project focuses on expanding water access to peri-urban, generally low-income and low-consuming households. While investment costs related to network expansion and new connections are often recoverable through the net operating revenues generated through even relatively low usage levels, the higher investment and operating costs related to the expansion of treatment capacity can only be financially recovered through significantly higher consumption levels than are likely to be achieved here. In all three targeted cities, the operating costs related to the new investments and delivery of water to new customers can be covered by associated new tariff revenues. However, investment costs need to be recovered on a system-wide basis – i.e., through cross-subsidies from higher-consuming customers.

27. As is clear from the analysis, revenues generated from the sale of water made possible due to project investments only just cover the cost of providing that service. In fact, while over the long term the excess revenues result in an IRR that is slightly higher than the cost of capital, on an annual basis expected revenues are insufficient to cover the debt service related to the loan for nearly the first half of the evaluation period. The debt service needs to be covered by revenues from already-existing customers within the whole of FIPAG (including Maputo) as well as the new customers. The degree to which FIPAG's overall revenues covers the additional debt burden from the project is analyzed in Part 2 of this analysis.

[34] Investments in Tete and Moatize will not commence until the financing gap has been filled

28. A summary of the financial results is provided in Table 5.15.

Table 5.15. Baseline Net Present Value and Internal Rate of Return (US$)

	Pemba	Beira/Dondo	Tete/Moatize [35]	Combined Project
NPV (10% discount rate)	(27.6 million)	(2.6 million)	(24.7 million)	(54.9 million)
IRR	4.2%	8.7%	0.5%	4.7%

Sensitivity Analysis

29. As part of the project financial analysis, sensitivity analyses were undertaken to estimate the effects on project returns of possible variations in assumptions regarding project costs and/or revenues. Cost increases of 10 and 20 percent were simulated, as well as a decrease in the collection ratio to 85 percent (compared to 95 percent), and a decrease in the consumption of water for new connection by 22 percent (from an average of 11.5 m^3 per month to 9 m^3 per month).

30. The results indicate that the financial results summarized above, while well below the assumed 10 percent discount rate, does not change much. Relatively large increases in costs or reductions in benefits result in only small changes in the project's IRR. Results are summarized in table 5.16.

Table 5.16. Results of Sensitivity Analysis, Decrease in Benefits

Change in Assumptions	Resulting IRR (%)
Baseline	**4.7**
10% increase in investment costs	4.1
20% increase in investment costs	3.5
Decrease in collection ration from 95% to 85%	3.8
Decrease in consumption for new customers from 11.5 m^3 per month to 9 m^3 per month (22%)	3.6

31. Variations that would benefit the financial returns to the project were also modeled, including a tetn percent reduction in costs, and an increase in consumption from 11.5 m^3 per month to 14.0 m^3 pr month. The results are presented in Table 5.17.

[35] Investments in Tete and Moatize will not commence until the financing gap has been filled

Table 5.17: Results of Sensitivity Analysis, Increase in Benefits

Change in assumptions	Resulting IRR (%)
Baseline	**4.7**
10% decrease in investment costs	5.4
Increase in consumption for new customers from 11.5 m^3 per month to 14.0 m^3 per month (40%)	5.6

Part 3:FIPAG Debt Service Coverage Ratio (DSCR)

32. The proposed credit for the project, while guaranteed by the Government, will be repaid by FIPAG. As part of the financial analysis, a review was undertaken of FIPAG's recent and projected overall financial results, including its debt service obligations originating from previous projects, ongoing projects and the proposed project. It is important to note that financial covenants under existing IDA loan agreements specify that FIPAG's projected DSCR must remain above 1.5 for any additional loan obligations to be contracted (Credit Number 5290-MZ). This analysis reviews whether that DSCR is maintained under the current operational patterns and tariff structure.

33. FIPAG maintains a financial model incorporating its past and projected operational and financial performance; this model, as well as FIPAG's audited financial statements, is reviewed regularly by the Bank as part of its periodic implementation support missions and is considered to be a reasonable projection of financial results and FIPAG's ability to cover its costs and obligations. WASIS II appraisal included a review of the model, including incorporating more accurate debt service projections (converted into local currency at contracted interest and exchange rates) and conservative expected tariff proposals. It is important to note that the financial model is based on city-specific operations (with the exception of Maputo, which is operated by a separate utility and pays lease fees to FIPAG) and does not yet incorporate the establishment of regional operating companies that will lease FIPAG assets.

34. **FIPAG's past financial performance.** The main components of its financial results for the last four years are provided in Table 5.18.

Table 5.18. FIPAG Financial Results, 2011 – 2014 (MZN millions)

	2011	2012	2013	2014
Revenues:				
Maputo lease fees:	133.4	221.0	233.9	260.0
FIPAG-operated cities[1]	845.6	965.2	1,202.5	1,232.0
Operating Expenses[2]	773.1	826.5	1,099.8	1,075.0
Net Operating Revenue	**205.9**	**359.7**	**336.7**	**416.9**
Other cash and non-cash expenses				
Provisions for uncollected revenue[3]	97.8	106.8	31.9	91.8
Net Interest Expense	42.9	45.7	55.8	55.2
Depreciation	298.7	372.1	402.0	375.5
Net Profit (Loss)	**(233.6)**	**(164.8)**	**(153.1)**	**(105.6)**

[1] Billed water revenues
[2] Operating expenses have been adjusted to remove goods purchased using donor funds.
[3] Adjusted to represent at least 50 percent of uncollected billings in the applicable year.

Table 5.19. Calculation of Debt Service Coverage Ratio (MZN millions)

	2011	2012	2013	2014
EBITDA[1]	108.0	253.0	304.8	325.2
Debt Service[2]	92.5	101.1	149.0	187.2
DSCR[3]	**1.17**	**2.50**	**2.05**	**1.74**

[1] EBITDA = Earnings before Interest, Taxes, Depreciation, and Amortization.. Earnings are adjusted by at least 50 percent of uncollected billings.
[2] Net interest revenues + Principal repayments
[3] EBITDA/Debt Service

35. Although technically generating net losses over the last several years, this is due to tariffs (and collections) not being able to cover FIPAG's full depreciation expenses. FIPAG successfully covers its operational costs and debt service obligations through revenues generated by its directly-managed operations and its lease with AdeM. Unlike many water supply companies in developing countries, FIPAG has been able to pay all of its operational costs and does not generate arrears to suppliers or, for example, to electric utilities, and it has been successful in attracting financing from international financial institutions (the Bank and the African Development Bank) and bilateral agencies (the European Investment Bank and the *Agence Française de Développement*). FIPAG receives small financing subsidies due to (a) the concessional interest rates inherent in international financial institution lending; and (b) exchange-rate guarantees in some of their sub-lending agreements with the MEF, but other than that effectively pays its own way for both operations and investment. FIPAG has met (with the exception of 2011, when it nearly met the covenant) the financial covenant specified in existing Bank Financing Agreements with regard to a minimum DSCR of 1.2 (Credit Number 5290-MZ).

36. WASIS II appraisal also included projections of FIPAG's financial performance, assessing the likelihood of FIPAG's ability to maintain its financial covenants with regard to cost coverage and projected debt service coverage. The covenant with regard to cost coverage is that tariffs are able to cover operating costs, the cost of capital, and depreciation. The covenant with respect to projected debt service coverage is that a minimum DSCR of 1.5 be projected when considering additional long-term debt.

37. Projections were based on the following assumptions:

- The 2014 operational and financial performance form the base year for projections.
- An increase in tariffs as of October 1, 2015 (the effectiveness date of an 8 percent nominal increase in the average tariff) is assumed to result in a 2 percent revenue increase in 2015 (from 2014) and an 8 percent increase in 2016.
- A two percent inflation rate.
- A normal increase in connections and consumption of one percent per year and annual tariff increases indexed to inflation.
- An additional 60,000 connections in years 2020 through 2022, or an increase in the total of 8 percent for each of those years.

- Depreciation and debt service projections are taken from FIPAG's financial model and include the project investments and lending.
- The 2015 collection ratio is assumed to be 90 percent; the collection ratio will improve gradually, reaching 95 percent in 2024. 100 percent of uncollected revenues are charged as a provision expense, reducing net revenues.

38. Results from the projections of FIPAG's overall financial performance indicate that the two key financial covenants are likely to be met through 2023 provided that revenues and costs meet expectations and that FIPAG's collection ratio is kept between 90 and 95 percent. However, it is important to note that the ratios are projected to be close to non-compliance in several early years (2016 is technically not in compliance with the 1.5 DSCR due to a noticeable increase in debt service in that year) and, more important, the DSCR falls well below 1.0 in 2024 and beyond – i.e., without tariffs at least indexed to inflation, FIPAG would likely not have sufficient cash to pay its debt service to the MEF after 2024. This is due to the fact that debt service for two IDA loans are expected to begin in 2024 – the Integrated Growth Poles Project, which is relatively small, and the US$178 million-equivalent GMWSP. WASISII is expected to begin repayments in 2026, which will further stress FIPAG's ability to cover its obligations.

39. Because these obligations are nearly ten years in the future, and because it is highly likely that tariffs will be adjusted in the meantime – both on a nominal and on a real basis – the Bank considers the covenants to be substantially complied with and expect the covenants to be comply with in ten years in the future (Credit Number 5290-MZ). The Bank recommends that all parties be prepared to implement real tariff increases in the early 2020s – if not earlier – in order to enable FIPAG to meet the expected debt obligations in 2024. In addition, FIPAG and CRA should continue to closely monitor tariff levels, revenues, and expenses on an annual basis for FIPAG to maintain positive financial results, to meet its loan obligations to its creditors, and to generate a moderate level of surplus cash that can be used for network extensions and repairs that extend beyond normal operations and maintenance or that can be used as a borrower contribution to capital projects financed by international financial institutions.

40. In addition, the Bank suggests that, looking forward, in cases where standard projections indicate single years that fall below covenant minimums, projections should be refined to consider a four-year rolling average of projected revenues, etc., in determining compliance.

41. The results of these projections are provided in table 5.20.

Table 5.20 FIPAG Projected Financial Results, 2015 – 2023 (MZN millions)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Revenues:										
Maputo lease fees:	319.7	342.4	356.7	387.5	406.3	448.4	486.9	524.7	551.7	565.8
FIPAG-operated cities[1]	1,250.1	1,350.1	1,363.6	1,377.2	1,391.7	1,516.2	1,652.6	1,801.3	1,819.4	1,837.6
Operating expenses[2]	1,096.5	1,118.5	1,140.8	1,163.6	1,186.9	1,293.7	1,410.2	1,537.1	1,567.8	1,599.2
Net operating revenue	**473.3**	**574.0**	**579.4**	**601.1**	**610.4**	**670.8**	**729.4**	**788.9**	**803.2**	**804.2**
Other cash and non-cash expenses										
Provisions for uncollected revenue[3]	125.0	128.3	122.7	117.1	111.3	113.7	115.7	117.1	109.2	101.1
Net interest expense	58.2	83.1	78.5	73.9	71.2	71.5	66.2	60.8	73.1	162.2
Depreciation	368.0	360.7	353.5	346.4	339.5	509.2	499.0	489.0	479.2	469.7
Net profit (loss)	**(78.0)**	**2.0**	**24.8**	**63.8**	**88.4**	**(23.6)**	**48.5**	**122.0**	**141.7**	**71.2**

[1] Billed water revenues

[2] Operating expenses have been adjusted to remove goods purchased using donor funds.

[3] Adjusted by 100 percent of estimated uncollected billings in uncollected billings in the applicable year. A 90 percent collection ratio is assumed in 2015, improving by 0.5 percentage points each year and reaching a 95 percent collection ratio in 2014.

Table 5.21. Calculation of Projected DSCR and Cost Coverage Ratio 2015 – 2023 (MZN millions)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
EBITDA[1]	348.3	445.7	456.7	484.0	499.1	557.	613.7	671.8	694.0	703.1
Debt service[2]	208.1	304.8	301.9	298.8	304.9	318.2	313.8	309.3	342.1	815.7
DSCR[3]	**1.67**	**1.46**	**1.51**	**1.62**	**1.64**	**1.75**	**1.96**	**2.17**	**2.03**	**0.86**
Cost coverage ratio[4]	**1.03**	**1.08**	**1.09**	**1.11**	**1.13**	**1.05**	**1.08**	**1.11**	**1.12**	**1.08**

[1] Earnings (adjusted for 100% of uncollected revenues) before Interest, Taxes, Depreciation and Amortization

[2] Net interest revenues + Principal repayments

[3] EBITDA/Debt service

4 Cost coverage ratio = Revenues / (Operating costs + Cost of capital + Depreciation)

Annex 6: Impact Evaluation Design and Implementation Plan

MOZAMBIQUE: Water Services and Institutional Support Project II

1. The proposed impact evaluation to be supported under Component 5 of the project will collect data on the outputs and outcomes of the project to associate the project's progress with its impacts. The evaluation intends to identify the causal attribution of Project outputs with beneficiary outcomes to ultimately assess the effectiveness of the intervention. The evaluation approach and research questions were developed in collaboration with the Government to assure policy and programmatic relevance.

Proposed Impact Evaluation Design

Study Objectives

2. The primary objective of the study will be to evaluate the extent to which the rehabilitation and expansion of the networks, combined with the reduction of new connection fees for low-income households. The purposes of the subsidies are to support (a) an increase in household access to water and user satisfaction; (b) a reduction in time and costs to collect water for household consumption; and (c) improved health outcomes, specifically enteric diseases. The study will assess the equity of the intervention, with special attention to pro-poor impacts. Data in Mozambique is limited, so the impact evaluation surveys will help FIPAG's monitoring tools to complement customer profiles and experiment with some issues that affect even basic indicators, such as how households respond to subsidies or how they take up connections, and the expected changes in consumption. The specifics of the impact evaluation in terms of sampling framework, power calculations, rollout sequencing and comparison group assignment will be developed with FIPAG and CRA.

3. There have been no studies on the impact of improved water supply on changes in household consumption from different water sources, household expenditure and household health outcomes such as the diarrhea burden in secondary cities in Mozambique. This will be able to be measured directly comparing intervention and control as part of the stepped wedge design, but also predictively using a Quantitative Microbial Risk Assessment model. This also represents the opportunity to inform the time and cost savings and water efficiency gains from an improved water supply project. Similarly, there have been few studies that can show causality associated with changes to economic effects, such as cost and time savings associated with improvements to water and sanitation and hygiene.

4. This will be a dynamic impact evaluation, meaning that the study will establish a rigorous monitoring framework, tools and approaches to regularly collect indicators that fit into the existing system monitoring approaches.

Target Population

5. Several investments in water supply infrastructure are to be phased-in during a five-year implementation period. The impact evaluation will target the population in the following cities in Mozambique: Beira/Dondo, Pemba, and Tete/Moatize[36]. Over 800,000 people are likely to benefit, through either new or increased access to piped water. Specifically, around 318,000 people will be provided with access to piped water services through a new household connection. Rehabilitated systems will allow currently connected households to access improved services.

[36]Investments in Tete and Moatize will not commence until the financing gap has been filled

Eligible Administrative Units (Postos Administrativos) and Neighborhoods (Bairros) of Cities

6. In order to facilitate the implementation of a robust sampling framework, the administrative units will be used as criteria for clustering the units of analysis. The main unit of analysis for this study would be neighborhoods in each city. The city of Beira has five administrative urban posts, with 26 eligible neighborhoods for intervention.[37] For this city (including the area of Dondo) 13 neighborhoods will be randomly selected as first-round beneficiaries to be phased-in over the first two years of the project; 13 neighborhoods (which would enter in late phases of the project) can be used as control neighborhoods in the early phases of the project.

7. For the cities of Tete and Moatize,[38] the impact evaluation will cover the city of Tete and three districts of Moatize (Moatize, Kambulatsitsi, and Zombue). The cities of Tete and Moatize cover only four administrative urban posts which will be randomly assigned in different phases with 17 eligible neighborhoods for intervention, with a similar adjacent number of neighborhoods not intervened but with similar characteristics to the eligible neighborhoods and that can be used as control groups.

8. The city of Pemba has 17 eligible neighborhoods with three administrative posts. Almost 10 adjacent neighborhoods in Metuge District could be added as control neighborhoods, given their similar characteristics. Close to 10 Metuge neighborhoods are spread in areas with close proximity (up to 40 km of distance) to the Pemba District.

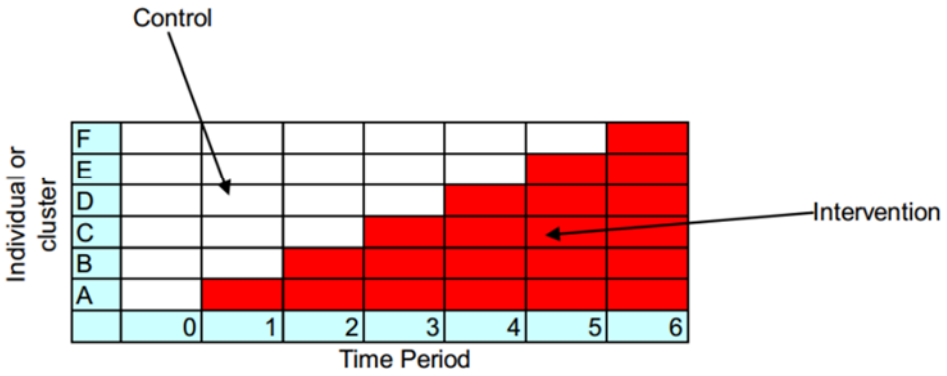
9. The step-wedge design has the advantage of studying the effect of interventions in the context of complex implementation plans in multiple settings. It also solves the ethical dilemma of withholding interventions that are necessary to be implemented in the early stages of the project. Step-wedge randomized trial designs involve sequential roll-out of an intervention to participant areas or communities (individuals or clusters) over a number of time periods. By the end of the study, all participant regions or areas will have received the intervention, although the order in which participants receive the intervention is determined at random. This design works when there are already a pre-selected number of geographical units where the works required to expand or rehabilitate infrastructure will take place.

10. Figure 6.1 shows the step-wedge design with the project's implementation phases:

[37] These are: Macuti, Palmeiras, Ponta-Gêa, Chaimite, Pioneiros, Esturro, Matacuane, Macurungo, Munhava-Central, Mananga, Vaz, Maraza, Chota, Alto da Manga, Nhaconjua, Chingussura, Vila Massane, Inhamízua, Matadouro, Mungassa, Ndunda, Manga Mascarenha, Muave, Nhangau, Nhangoma and Tchonja.

[38]. Investments in Tete and Moatize will not commence until the financing gap has been filled

Figure 6.1: Step-Wedge Design



11. The distribution of neighborhoods eligible for treatment and control groups will be determined by a step-wedge design, which will progressively incorporate works in each city according to the implementation plans. The design will allow having enough randomly selected neighborhoods per city to have both comparison groups at different stages. The design will also help identify a set of adjacent (or geographically close) neighborhoods that will not be intervened but that can serve as additional comparison groups due to their proximity to intervened neighborhoods and potentially similar characteristics.[39] Over the five-year implementation period of the project it is expected that for each city between 4,000 and 10,000 households will be connected to the network. Two out of the four cities are expected to complete full implementation of works in 2-3 years, and the rest will add all intervened neighborhoods over a five-year period (Beira).

12. The implementation plan for neighborhoods, connections, and target population in cities under WASIS II is provided in table 6.1.

Table 6.1. Implementation Schedule

	Year 1	Year 2	Year 3	Year 4	Year 5
Beira/Dondo					
Administrative posts	5	5	7	7	7
Neighborhoods (treatment)	6	9	12	15	18
Neighborhoods (control)	20	17	14	11	8
Treatment connections (cumulative)	4,000	8,000	12,000	16,000	20,000
Target population (cumulative)	21,200	42,400	63,600	84,800	10,6000
Pemba					
Administrative posts	3	3	3		
Neighborhoods (treatment)	5	7	10		
Neighborhoods (control)	22	20	17		
Treatment connections (cumulative)	5,000	10,000	20,000		
Target population (cumulative)	26,500	53,000	79,500		

[39] Based on geographical discontinuity for the assignment into the control group. If characteristics of adjacent neighborhoods are unequal to those assigned for intervention in initial phases, then a second option is to match the neighborhoods based on basic socio-demographic characteristics.

Tete/Moatize[40]					
Administrative posts				6	9
Neighborhoods (treatment)				8	12
Neighborhoods (control)				9	5
Treatment connections (cumulative)				10,000	20,000
Target population (cumulative)				53,000	106,000

Design

13. The project components subject to evaluation will be delivered over a three-year period (2016-2019):

- Rehabilitation, construction and expansion of water treatment plants, distribution centers, main pipelines, networks, and house connections.
- The cost to households to connect to the piped water network will be paid by the project to the regional water utilities over a six-year period.
- Institutional support (regulation, asset management, tariff/pricing, and decentralization) and output-based payments for connections for low-income households.

14. There would be four categories of households that will be part of the evaluation study: those with and without connections; and those eligible and not eligible for free household water connection fee. The treatment group will be composed of those households, clusters and neighborhoods with existing connections and upgraded infrastructure (Group A and C) and those households that have been given the option of new household connections through a subsidized connection fee (Group B and D). The control group will be composed of those households where project interventions would not take place in the initial phases of the project and those located in areas adjacent to the project that would not receive interventions at any point. Based on the project's implementation phases, the evaluation design will compare four different groups at any point: i) those with existing connections that will have rehabilitated services; ii) those with existing connections but whose systems will not be rehabilitated; iii) those without connections that will be offered the connection subsidy; and iv) those without a connection that will not be offered the subsidy.

Table 6.2. Categories of Households

	Pro-poor Connection (No Fixed Fee)	
Status of connection	A. Can afford, have existing connection	C. Cannot afford, have existing connection (through informal or illegal means)
	B. Can afford, no existing connection. Will be provided option to pay for connection	D. Cannot afford, will be provided free connection

[40] Investments in these cities are not financed under WASIS II

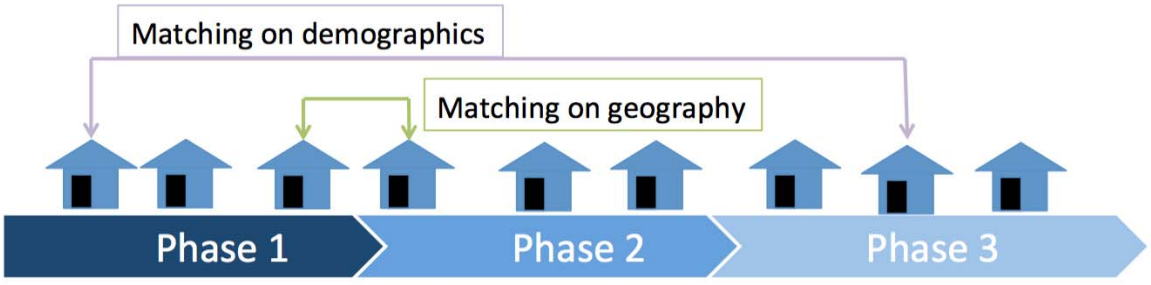
15. To avoid significant changes to the existing project implementation plan, the study will, to the degree feasible, be designed to randomize the order in which cities, administrative posts or barrios will receive the investments of Component 1. The strategy will be based on a stepped-wedge design. Such a design is flexible enough to accommodate the three-stage rollout of the program with two tiers of beneficiary units. These stages will involve a first tier of neighborhoods that will directly benefit from network connections and a second tier of neighborhoods will benefit through the expansion and rehabilitation of the network.

16. During all phases of implementation, 110 clusters (neighborhoods) distributed in three eligible cities or peri-urban batches and 31 administrative posts will end up having the works necessary to expand service and the funds to pay for the connection fees normally paid for by the recipient household. From all investments made in each phase of the project a subset of neighborhoods will be randomized in the order of works delivered during three years of implementation. This subset random assignment in multiple phases will be used to reduce bias and balance neighborhoods at the baseline. Monitoring data will allow monitoring of characteristics of neighborhoods/districts that shift from control to treatment areas in Phases 2 and 3.

17. The bulk of the work will be based on baseline and end-line surveys to assess the changes in the project's outputs and outcomes. Data collection will include longitudinal household surveys (following the same households for both baseline and end line) to assess water quantity and quality, user acceptability, intra-household water uses, health conditions, treatment, costs, and payment. These visits can be on a yearly basis for comprehensive assessment, but on a quarterly basis for spot checks and short answer questions.

18. Because random allocation could be threatened during the implementation of the project, other analytical approaches will be used to minimize any potential source of contamination (control group receiving treatment or vice versa) and biases, including: (a) matching demographics between those in Phase 1 and Phase 3; and (b) matching on district geographical limits (using regression discontinuity) between nearby houses that are part of different phases and districts. Through these methods it can be guaranteed that the main characteristics of households in each comparison group (treatment and control) would be balanced or similar. This would imply that these household would be statistically comparable on average and thus their characteristics would not drive the outcomes but rather the project intervention itself would do.

Figure 6.2.



19. **Optimization and improvement of project outcomes:** The impact evaluation will test how expansion of water production impacts different delivery structures to improve uptake of connections and sustained payment for beneficiaries. Once water network rehabilitation and expansions are completed, households will be assessed in terms of their payment capacity for water connection fees. Subsidies will be offered to those with the lowest payment capacity. A subsample of these households

will be selected to test different modalities of subsidies (for instance reduction or elimination of household connection fees through targeted government subsidies) to test targeting and take up effectiveness of water connections by the poorest. Monitoring data will be collected for households with new connections and service providers to follow payment patterns. The data will identify some key characteristics of service providers to control for potential differences in service delivery models.

20. The study will target *bairros* and assign them to comparison groups, through a step-wedge design, with the objective of testing how the provision of on-site urban water supply affects household water availability and consumption, household water expenditures and other expenditures, and household health outcomes. The separation in two different groups of interventions based on random assignment of connection incentives and status of access to the network will be used to assess the aforementioned outcomes within households. FIPAG and local providers differ from other types of informal or unimproved water supply that may be economically burdensome to the poorest households, making it possible to capture heterogeneous effects between different types of urban water supply services. The randomized phase-in of new household connections will allow an estimation of the way in which consumers respond to changes in the cost and availability of water, leading to different income and substitution effects between water consumption and expenditures, and expenditures in other basic household needs. By splitting the two groups of treated water expansion and connections (A and C; B and D) and having subgroups of neighborhoods experiencing water consumption and expenditures changes (Tier 1) in initial stages of implementation and other group of neighborhoods without changes in water consumption and expenditures in the first stages (Tier 2), it would be possible to compare outcomes in consumer preferences and water consumption (intermediate outcomes). At the end of the project (five years) 147 neighborhoods will obtain access to piped water service, receive connection fees and experience changes in intra-household consumption of water and other basic goods and services, and an additional 198 neighborhoods (geographically adjacent to those intervened) will serve as an additional control group during the whole implementation period of the project to contrast these outcomes.

Table 6.3. Composition of Eligible Neighborhoods by Treatment Arm and Comparison Group

Neighborhoods	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Total**
Current connections						
Group A and C (Comparison of fixed fee affordability)						
Treatment arm 1: Connection incentives/change in access	6	8	8	7	9	**38**
Treatment arm 2: No connection incentives	5	9	7	6	8	**35**
Control (no intervention)	34	28	21	10	7	**100**
New Connections						
Group B&D (Comparison of Fixed fee affordability)						
Treatment arm 1: Connection incentives/change in access	6	8	8	7	8	**37**
Treatment arm 2: No connection incentives	5	9	8	7	8	**37**
Control (no intervention)	34	28	21	9	6	**98**

Research Questions

21. Core questions: It is expected that the impact evaluation will be able to answer the following questions:

1. What is the sustained impact of the project on increased service delivery to those already connected and those not connected to the system, in terms of:
    - Water quality and quantity
    - User acceptability and satisfaction
    - Water resource management (for example, water conservation)
    - Health (for example, enteric diseases, and other water-borne diseases)
    - Equity (socio-economic)
    - Service collection ratios and payments
2. How does the provision of water supply change the enteric disease risk profile of those with existing connections, new connections, and those who did not receive an improvement (externalities)
    - With special attention to the pro-poor lens of the intervention
3. How can we incentivize sustained payment for water, for example:
    - What is the difference in uptake between subsidies to the household (consumer incentives) versus output-based payment (provider incentives)?
    - What is the impact of group payment incentives (for example, lower water bill if you form a group) on water connection and sustained payment of water bill?
    - Can you improve the performance of the system through different regulatory structures for commissions involving monetary and non-monetary incentives?

Qualitative Evaluation

22. Complementary qualitative data will be collected through focus groups to assess different dimensions of program implementation, quality of service, satisfaction with new connections, convenience of subsidized connections and household's perceptions and valuation towards new water service received and its reliability. The qualitative work will also collect data from providers in different cities. The following will constitute the scope of the qualitative work:

- How effectively/efficiently/well is the program implemented
- The types of activities involved to deliver household connections
- The degree of engagement from service users
- Feedback from service users and providers
- Adequacy of water tariffs paid
- Degree of efficiency (magnitude of deadweight loss) in pricing water with regard to technical characteristics and actual water fees[41]

23. The tariff will determine how the average price level is distributed to different water users, types of service and uses. Thus, a clear differentiation is established between the often synonymously used terms 'water price' and 'water tariff': the tariff is understood here as one component of the water price. Tariffs may be uniform or differentiated across water users and uses.

24. The implementation process refers to the formal and informal rules of monitoring and enforcing water bills and billing in practice. Is the amount of water supplied to customers billed completely? Are

[41] By tackling this issue it would be possible to aggregate how large is the deadweight loss from inadequate water pricing.

customers who are unable or reluctant to pay their water bills actually sanctioned by disconnection from the network? Are efforts undertaken to detect and penalize illegal water withdrawals from the network?

25. The average level of water prices corresponds to the average revenue the water supplier can realize per network connection or unit of water consumption. It may refer to actual or theoretical costs of water supply, but also to some non-technical tariff set level. Figure 6.3 shows the results chain involving the intervention, outcomes and impacts.

Figure 6.3. Results Chain

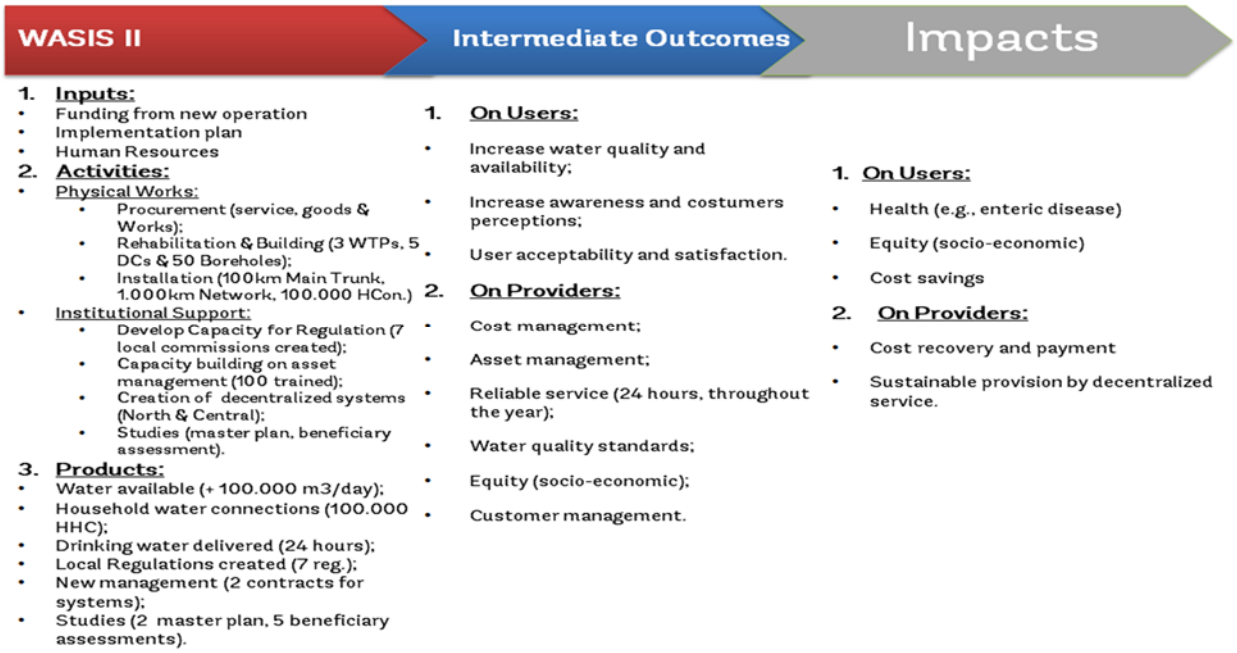


Table 6.4. Impact Evaluation Budget

Activities / deliverables	FY16	FY17	FY18	FY19	FY20	Other sources of funding (please specify):	Total IE Budget
1. Baseline	**235000**	**0**	**0**	**0**	**0**	-	**235000**
Instruments preparation / pilot	5000				0		5000
Baseline data collection:	230000	0	0	0	0		230000
• Household Survey	200000						200000
• Qualitative Work/Extra Modules	28000						28000
• Other costs (Institutional Review Board/Ethics Committee)	2000						2000
2. Follow-up/endline		0	0	230500	2000		232500
Identification of HHs in Baseline			0	1500	0		1500
Follow-up/endline data collection		0	0	229000	2000		231000
• Household Survey				200000			200000
• Qualitative Work/Extra Modules				28000			28000
• Other costs				1000	2000		3000
3. Data documentation					**5000**		**5000**
4. Staff and Consultants	**69650**	**22900**	**101850**	**78950**	**7150**		**280500**
Project Principal Investigator(s)	24000	**16000**	**54000**	**12000**	4000		110000
Staff	12150		6750	15750	2250		36900
Field coordinator	25000		**37500**	**37500**			100000
Data Quality/Analytics Consultants	3500	6900	3600	8700	900		23600
Qualitative Researcher	5000			5000			10000
5. Travel	**30500**	**6000**	**2000**	**15500**	**0**		**54000**
International	28500			13500			42000
Local	2000		2000	2000			6000
Hotel + Per diem							0
Other, specify (Workshop Baseline)		6000					6000
6. Dissemination	9000	0	0	0	14000		23000
Workshops, meetings	4000				4000		8000
Material Publication	5000				10000		15000
Contingent Funds for FIPAG field logistics							**170000**
Total (USD)	**344,150**	**28,900**	**103,850**	**324,950**	**28,150**		**1,000,000**

Ethical Issues

26. All survey participants will be carefully informed about the data that will be collected throughout the study, the purpose of the surveys and the fact that their participation is voluntary. Only after participants provide consent will their data be collected. Strict protocols will be put in place to ensure data remains confidential and that International Ethics Review Board measures are cleared by a proper institution. Any information that can link data to specific households will be removed after assignment of a unique identifier.

Team Composition

27. The team will be composed of two principal investigators: Paul Gertler (University of California, Berkeley) and Matt Freeman (Emory University). A World Bank water economist (Christian Borja-Vega) will supervise all the work jointly with the project team. In addition, local consultants will support field coordination activities and supervise data collection. The following table contains the team composition, including key counterparts:

Table 6.5. Team Composition

Role	Organization
Economist	World Bank
Principal Investigator	University of California, Berkeley
Principal Investigator	Emory University
IE Managers	CRA
IE Manager	FIPAG
Project TTL	World Bank

Quality Assurance, Outputs and Dissemination

28. All data collection activities will be supervised by a local impact evaluation field coordinator in partnership with the CRA/FIPAG/University of California, Berkeley/Emory team. The number of clusters and *postos administrativos* data will be collected from different sources. The household surveys will be applied by a survey firm that will be supervised by the impact evaluation and project team and will follow training protocols and and field informative sessions. In addition the agents will be aware that the same data will be collected in the baseline survey, which will be carried out by an independent firm and will allow the results to be cross-checked. The mapping data of clusters and neighborhoods will be associated with the qualitative and baseline surveys.

29. The data collection instruments will be piloted in the field to ensure that they are appropriate for the local context. Enumerators will participate in training on the questionnaire. The data will be collected electronically, which allows consistency checks to be programmed and quality checks to be performed on a daily basis. Audits will be performed by recording parts of the interview and performing back-check interviews by a different team of interviewers. Cross-checking of the data will allow immediate feedback to be provided to the field teams in case of divergences or other problems. Milestones of the impact evaluation are presented in table 6.6:

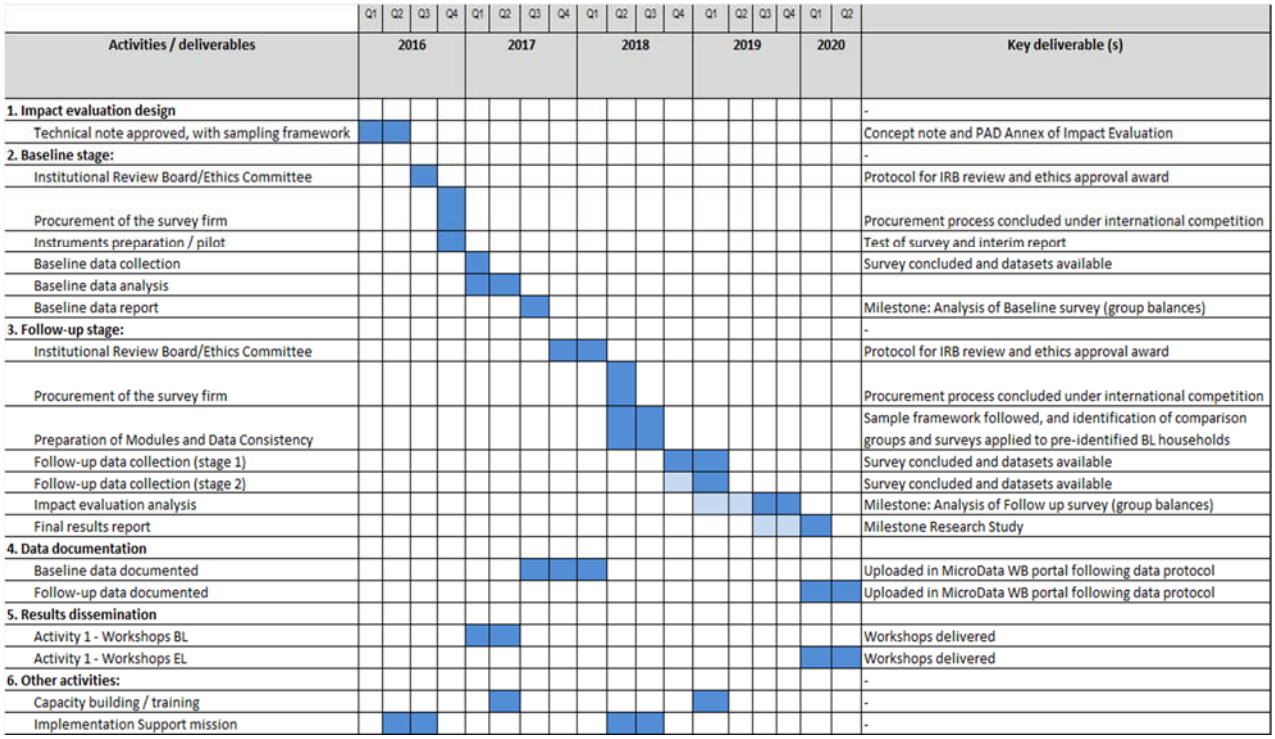
Table 6.6. Impact Evaluation Milestones

Post-project concept note with power calculations	End-March 2016
Identification of specific intervention sites and beneficiaries	June 2016
Baseline data collection	June, 2017
Follow-up data collection	July, 2019
Baseline report	September, 2017
Final impact evaluation report	March, 2020
Dissemination activities	April-May, 2020

*Dates subject to change based on project implementation timeline.

30. The team will be actively involved in the dissemination of evidence acquired during the course of this process to policy makers, practitioners and sector institutions. Baseline and monitoring data will help the local administration and FIPAG during the implementation of the project as well as inform the broader urban water investments made in the country. Upon completion of the evaluation the Bank will work closely with all stakeholders to elaborate relevant policy briefs and dissemination events, including workshops. A report will be produced by the research team to be shared with project staff, the task team leaders and policy makers from relevant departments to summarize learning, solicit suggestions and improvements, and generate new uses for the resulting data.

Figure 6.4. Impact Evaluation Implementation Timeline



Activities / deliverables	2016				2017				2018				2019				2020		Key deliverable (s)
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	
1. Impact evaluation design																			-
Technical note approved, with sampling framework																			Concept note and PAD Annex of Impact Evaluation
2. Baseline stage:																			-
Institutional Review Board/Ethics Committee																			Protocol for IRB review and ethics approval award
Procurement of the survey firm																			Procurement process concluded under international competition
Instruments preparation / pilot																			Test of survey and interim report
Baseline data collection																			Survey concluded and datasets available
Baseline data analysis																			
Baseline data report																			Milestone: Analysis of Baseline survey (group balances)
3. Follow-up stage:																			-
Institutional Review Board/Ethics Committee																			Protocol for IRB review and ethics approval award
Procurement of the survey firm																			Procurement process concluded under international competition
Preparation of Modules and Data Consistency																			Sample framework followed, and identification of comparison groups and surveys applied to pre-identified BL households
Follow-up data collection (stage 1)																			Survey concluded and datasets available
Follow-up data collection (stage 2)																			Survey concluded and datasets available
Impact evaluation analysis																			Milestone: Analysis of Follow up survey (group balances)
Final results report																			Milestone Research Study
4. Data documentation																			
Baseline data documented																			Uploaded in MicroData WB portal following data protocol
Follow-up data documented																			Uploaded in MicroData WB portal following data protocol
5. Results dissemination																			
Activity 1 - Workshops BL																			Workshops delivered
Activity 1 - Workshops EL																			Workshops delivered
6. Other activities:																			-
Capacity building / training																			-
Implementation Support mission																			-

Annex 7: MAP

MOZAMBIQUE: Water Services and Institutional Support Project II