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Report No.: PAD1569

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED GRANT

IN THE AMOUNT OF US$20 MILLION

TO THE

REPUBLIC OF ZIMBABWE

FOR A

NATIONAL WATER PROJECT

January 28, 2016

Water Global Practice
Africa Region

CURRENCY EQUIVALENTS

Currency Unit = US$

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

A-MDTF	Analytical Multi-Donor Trust Fund
AfDB	African Development Bank
DFID	U.K Department for International Development
EMA	Environmental Management Agency
ESMP	Environmental and Social Management Plan
FM	Financial Management
FPL	Food Poverty Line
GRS	Grievance Redress Service
IRR	Internal Rate of Return
ISN3	Interim Strategy Note 3
LA	Local Authority
NPV	Net Present Value
M&E	Monitoring and Evaluation
MEWC	Ministry of Environment, Water and Climate
MoFED	Ministry of Finance and Economic Development
MLGPWNH	Ministry of Local Government, Public Works, and National Housing
MRDPCH	Ministry of Rural Development and Preservation of Cultural Heritage
NCB	National Competitive Bidding
NGO	Nongovernmental Organization
NRW	Nonrevenue Water
O&M	Operation and Maintenance
PDO	Project Development Objective
PICES	Poverty Income Consumption and Expenditure Survey
PIM	Project Implementation Manual
PIT	Project Implementation Team
PIU	Project Implementation Unit
PSC	Project Steering Committee
PSIP	Public Sector Investment Plan
QCBS	Quality- and Cost-Based Selection
RDC	Rural District Council
RSOP	River System Outline Plan
SLB	Service-level Benchmarking
SORT	Systematic Operations Risk-rating Tool
TA	Technical Assistance
TCPL	Total Consumption Poverty Line
ToR	Terms of Reference
ULA	Urban Local Authority

UNICEF	United Nations Children's Fund
WASH	Water, Sanitation, and Hygiene
WSP	Water and Sanitation Program
WSS	Water Supply and Sanitation
WTP	Willingness To Pay
ZimASSET	Zimbabwe Agenda for Sustainable Socioeconomic Transformation
ZIMFUND	Zimbabwe Multi-Donor Trust Fund
ZIMREF	Zimbabwe Reconstruction Fund
ZINWA	Zimbabwe National Water Authority

Regional Vice President:	Makhtar Diop
Country Director:	Guang Zhe Chen
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Zimbabwe

Zimbabwe National Water Project (P154861)

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Basic Information			
Project ID P154861	EA Category B - Partial Assessment		Team Leader(s) Chloe Oliver Viola
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ] Financial Intermediaries [ ] Series of Projects [ ]		
Project Implementation Start Date 28-Jan-2016	Project Implementation End Date 30-May-2019		
Expected Effectiveness Date 28-Jan-2016	Expected Closing Date 30-Jun-2019		
Joint IFC No			
Practice Manager/Manager Jonathan S. Kamkwalala	Senior Global Practice Director Junaid Kamal Ahmad	Country Director Guang Zhe Chen	Regional Vice President Makhtar Diop

Approval Authority
Approval Authority RVP Decision The Project will be financed by the ZIMREF, approved by the World Bank Board of Governors on May 9, 2014. The request is in accordance with BP 14.40 - Trust Funds, paragraph 4, footnote 7, which requires that the Executive Directors approve any proposal for a Bank-administered trust fund where it would provide assistance to a member not in good standing with the Bank. However, the Board delegated the approval authority to the Africa Regional Vice President (AFRVP). Paragraph 52 of the ZIMREF Board paper indicates that "After consideration of the Umbrella Trust Fund by the Board, grant proposals and programs will be approved at the Africa Region Vice President level after a Decision Meeting chaired by the Country Director.
Borrower: Republic of Zimbabwe
Responsible Agency: Zimbabwe National Water Authority

Contact:	Dr. Jefta Sakupwanya	Title:	CEO
Telephone No.:	263772116461	Email:	jsakupwanya@zinwa.co.zw

Project Financing Data(in USD Million)							
[ ]	Loan	[ ]	IDA Grant	[ ]	Guarantee		
[ ]	Credit	[X]	Grant	[ ]	Other		
Total Project Cost:		20.00		Total Bank Financing:		0.00	
Financing Gap:		0.00					

Financing Source	Amount
Borrower	0.00
Zimbabwe Reconstruction Fund (ZIMREF)	20.00
Total	20.00

Expected Disbursements (in USD Million)

Fiscal Year	2016	2017	2018	2019
Annual	4.00	10.00	5.00	1.00
Cumulative	4.00	14.00	19.00	20.00

Institutional Data

Practice Area (Lead)

Water

Contributing Practice Areas

Health, Nutrition & Population

Cross Cutting Topics

[X] Climate Change
[X] 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	80		
Water, sanitation and flood protection	General water, sanitation and flood	20		

	protection sector			
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	%
Rural development	Rural services and infrastructure	60
Urban development	Municipal governance and institution building	20
Environment and natural resources management	Water resource management	20
Total		100

Proposed Development Objective(s)

The proposed project development objective is to improve access and efficiency in water services in selected growth centers and to strengthen planning and regulation capacity for the water and sanitation sector.

Components

Component Name	**Cost (USD Millions)**
Growth Center Water and Sanitation Improvements	14.04
Technical Assistance	5.11
Project Management	0.85

Systematic Operations Risk- Rating Tool (SORT)

Risk Category	**Rating**
1. Political and Governance	Substantial
2. Macroeconomic	High
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Moderate
8. Stakeholders	Moderate
9. Other	
OVERALL	Substantial

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
Financial Covenant	**X**		CONTINUOUS

Description of Covenant

The Project Implementing Agency shall take all measures necessary to ensure that its Operating Revenue reflects the principles of Cost Recovery.

Name	Recurrent	Due Date	Frequency
Legal Covenant		28-Apr-2016	

Description of Covenant

The Project Implementing Agency shall establish within three months of the Effective Date, at each catchment and thereafter maintain, throughout the implementation of the Project, a "Project Implementation Team"

Conditions

Source Of Fund	Name	Type
ZIMR	Subsidiary Agreement	Effectiveness

Description of Condition		
The Subsidiary Agreement has been executed on behalf of the Recipient and the Project Implementing Entity.		
Source Of Fund	**Name**	**Type**
ZIMR	Project Steering Committee	Effectiveness
Description of Condition		
The Recipient has established the Project Steering Committee.		
Source Of Fund	**Name**	**Type**
ZIMR	Project Implementation Unit	Effectiveness
Description of Condition		
The Project Implementing Entity has established the Project Implementation Unit.		
Source Of Fund	**Name**	**Type**
ZIMR	Project Implementation Manual	Effectiveness
Description of Condition		
The Project Implementing Entity has adopted the Project Implementation Manual		

Team Composition

Bank Staff

Name	Role	Title	Specialization	Unit
Chloe Oliver Viola	Team Leader (ADM Responsible)	Infrastructure Economist		GWA01
Howard Bariira Centenary	Procurement Specialist (ADM Responsible)	Senior Procurement Specialist		OPSPF
Daniel Yaw Domelevo	Financial Management Specialist	Senior Financial Specialist		GGO31
Berina Uwimbabazi	Team Member	Sr Water Resources Mgmt. Spec.	Senior Water Resources Management Specialist	GWA01
Blessing Manyanda	Team Member	Program Assistant		AFMZW
Christiaan Johannes Nieuwoudt	Team Member	Finance Officer	Finance Officer	WFALA
Dominick Revell de Waal	Team Member	Senior Economist		GWASP

George Campos Ledec	Safeguards Specialist	Lead Ecologist		GEN01
Kristine Schwebach	Safeguards Specialist	Senior Social Development Specialist		GSU07
Lucson Pierre-Charles	Team Member	Program Assistant		GWA01
Marie Roger Augustin	Team Member	Legal Analyst	Legal Analyst	LEGAM
Michael John Webster	Team Member	Sr Water & Sanitation Spec.		GWA01
Nadege Mertus	Team Member	Temporary		GWA01
Ngoni R. Mudege	Team Member	Sr Water & Sanitation Spec.		GWASA
Priscilla Netsai Mutikani	Team Member	Program Assistant		AFMZW
Solomon Alemu	Team Member	Consultant		GWADR
Webster Munhundiripo Muti	Team Member	Consultant		GWA01
Zoe Kolovou	Counsel	Lead Counsel		LEGAM
Zvikomborero Hoko	Team Member	Consultant		GWA01

Extended Team

Name	Title	Office Phone	Location

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
Zimbabwe	Mashonaland Central	Guruve	**X**		
Zimbabwe	Midlands	Midlands Province	**X**		Mataga and Nembudziya
Zimbabwe	Manicaland	Manicaland Province	**X**		Zimunya
Zimbabwe	null	Madziwa	**X**		
Zimbabwe	Matabeleland North	Lupane	**X**		

Zimbabwe	Masvingo	Gutu	**X**		

Consultants (Will be disclosed in the Monthly Operational Summary)	
Consultants Required ?	Consultants will be required

I. STRATEGIC CONTEXT

A. Country Context

1. **Zimbabwe is a low-income, fragile state with a population of 14 million.** It suffered an economic reversal from 2000 to 2009; nearly a decade of negative growth and a 50 percent decline in gross domestic product per capita set the economy back to the level of development it had achieved in the late 1950s. Hyperinflation ended in 2009 with the adoption of a multicurrency regime, and the economy experienced a rebound in 2010 and 2011. However, economic growth declined in 2012 and 2013; the 2014 gross domestic product was US$13.6 billion. An estimated 72 percent of Zimbabweans are poor—84 percent of rural dwellers and 63 percent of urban dwellers—and 16 percent of the population lives in extreme poverty.

2. **Despite its fragility, Zimbabwe exhibits some characteristics of a middle-income country.** Zimbabwe has solid infrastructure and human capacity but has been drained of institutional capacity, especially in core government functions, service delivery to citizens, and the private sector, and systems to resolve political and economic issues. The degradation of institutions has led to difficulty in managing political, economic, and external stresses which, if not properly handled, could reignite political conflict and economic vulnerability.

3. **The economic crisis severely affected infrastructure which is key to future growth and poverty reduction.** Decades of deferred maintenance and lack of long-term financing have taken a heavy toll on Zimbabwe's infrastructure, which once was among the best in Africa. Electricity output is now around half the level of demand, water supply and sanitation (WSS) service access and quality have deteriorated sharply, and about 40 percent of the roads need rehabilitation. It is estimated that US$14 billion is needed to rehabilitate the country's infrastructure, yet funding for infrastructure remains low. The Government has been unable to meet budgetary requirements, including those required to support parastatals and councils that provide basic services. High levels of unemployment have reduced consumers' ability to pay for services. Furthermore, funding to operate and maintain infrastructure and effectively deliver services is limited. Poor infrastructure has been cited as one of the key constraints to investment in the Doing Business reports, and is key for future growth in agriculture, mining, and tourism.

4. **Small towns and rural growth centers have been most affected, with revenue bases slower to recover than in large towns and cities.** The economy of small towns and rural growth centers (herein, 'growth centers') used to be driven by agriculture and agriculture-related industries. Poor performance of the agricultural sector—including agro-processing—resulted in high unemployment; disposable incomes plummeted, and with that the ability to pay for basic services, including water. Service providers are unable to operate and maintain infrastructure and there is an urgent need to revive infrastructure and management systems in these areas to restore service delivery.

B. Sectoral and Institutional Context

5. **WSS services have deteriorated drastically over the last two decades.** Zimbabwe used to have some of the highest access rates to WSS services in Africa; these rates have dropped to 46 percent for water supply and 30 percent for sanitation. In 2008–2009, the deterioration of

WSS services resulted in a cholera outbreak that affected 100,000 people and claimed 4,300 lives. Donors responded to the cholera outbreak with a number of programs and investments.[1]

6. **Since the cholera outbreak, the Government has embarked on significant policy and institutional reforms to rehabilitate the WSS sector, and the World Bank has played a pivotal role in supporting these.** The Government initially requested the Bank to coordinate a new National Water Policy. Together with UNICEF, the Bank developed a set of technical background papers,[2] later transformed into a single policy paper—the National Water Policy. The National Water Policy was approved by the Cabinet in 2013; it was the only policy approved by the Government of National Unity that was in power from 2009 to 2013.[3] According to the policy, sector institutions have been rebuilt under the Ministry of Environment, Water and Climate (MEWC).

[1]Programs and investments included (a) the Emergency Rehabilitation and Risk Reduction Program, managed by the United Nations Children's Fund (UNICEF) and supporting 20 urban local authorities (ULAs) and the Zimbabwe National Water Authority (ZINWA) with water treatment chemicals, rehabilitation of water infrastructure in urban areas, providing IEC materials, and others. The Emergency Rehabilitation and Risk Reduction Program came to an end and was immediately replaced by a water supply and sanitation improvement program in 14 small- to medium-size towns and managed by UNICEF, which is still active; (b) the African Development Bank (AfDB) managed the Zimbabwe Multi-Donor Trust Fund (ZIMFUND), established as a sister program to the Analytical Multi-Donor Trust Fund (A-MDTF) with a special focus on rehabilitation of water and sanitation infrastructure in large urban areas. Although the ZIMFUND started as an emergency program, it is now focusing on early recovery investment in large towns such as Chegutu, Chitungwiza, Harare, and Mutare; (c) the U.K. Department for International Development (DFID), through UNICEF, is supporting a rural water, sanitation, and hygiene (WASH) program in five of the eight rural provinces, namely Mashonaland West, Masvingo, Matabeleland North, Matabeleland South, and Midlands. This program focuses on hand pump rehabilitation, new water sources, hygiene education, and capacity building. Four of the small towns (Gutu, Lupane, Mataga, and Nembudzia) that will be supported by this project are also in these UNICEF-focus provinces and districts. Collaboration is envisaged around capacity building of the Rural District Councils (RDCs) and also in sanitation and hygiene promotion; (d) institutional and rehabilitation support by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)/Australian government to six large towns of Bulawayo, Chinhoyi, Gweru, Kadoma, Kariba, and Kwekwe. This program focused not only on direct rehabilitation, but also on creating sustainable systems for services provision such as improving billing efficiencies; (e) all the 32 ULAs were supported by the Bank-Water and Sanitation Program (WSP) to create a performance benchmarking and peer review process (Service-level Benchmarking [SLB]). The SLB produced verifiable data, generated by local authorities (LAs) to address key performance indicators for water supply, wastewater management, and solid waste management. The data is being used by cooperating partners in the design of their programs and also in supporting performance improvement plans developed by the LAs. The government and key stakeholders intend to continue supporting the SLB process and extend it to small towns. UNICEF has started the SLB rollout in two of their small towns of Chivhu and Mutoko, with support from ZINWA and the RDCs; (f) a number of nongovernmental organizations (NGOs) are active in the water sector, but very few of them are actively investing in growth centers.

[2] These thematic papers included: (a) Urban Water Supply and Sanitation Policy Background Paper; (b) Reviving Irrigation Development and Management; (c) Consolidated Recommendation for the National Water Policy; (d) Towards a Water Secure Zimbabwe: Improving Governance and Utilization of Water Resources; (e) Water Resources Information, Infrastructure, and Climate Change; (f) Water Resources, Use, Demand, Planning, and Financing; (g) Small Towns Water Supply and Sanitation; (h) Policies, Legislation, Strategies, and Institutions for Water Resources Development and Management; and (i) Health, Environmental Vulnerability, Sustainability, and WRM Indicators.

[3] Government of Zimbabwe (March 22, 2013) National Water Policy, Ministry of Water Resources, Development, and Management.

7. **In addition to supporting the National Water Policy, the Bank has supported various technical assistance (TA) activities,**[4] with funds from the A-MDTF and the WSP. These TA activities included a tariff study, a dam safety study, assistance with water quality monitoring, a water sector investment plan, a review of the coordination and regulatory instruments, and SLB of the ULAs. The Bank also supported the restoration of water services for 40,000 people in Beitbridge, the town most affected by the cholera crisis of 2008–09, through support to the Beitbridge Town Council and the ZINWA.[5] This project targets and scales up some of the activities previously carried out by the Bank.

8. **The Bank's TA support to the Government has been well received and has helped shape other support requests.** In 2014, the Bank carried out a rapid assessment of the TA to determine the usefulness of the analytical studies and found that the results uptake depended on the type of study and the availability of resources to implement the recommendations. For example, the uptake of tariff study recommendations varied between the LAs, and was greatly influenced by directives from the Central Government.[6] The study also revealed that the Bank's TA—in particular, its support to the National Water Policy—had influenced institutional reform. The policy triggered a discussion on the (a) linkages with the new national constitution; (b) clarity on the capacity of the MEWC to monitor ZINWA's dam inspections and other regulatory or inspectorate functions; (c) the location and reporting arrangements for a WSS regulator; (d) the capacity and responsibility of the Ministry of Agriculture to deliver irrigation water to the field edge; (e) the process and steps needed to unbundle ZINWA and the creation of water utilities in general (including the Greater Harare Metropolitan Utility); (f) clarity on the powers of the regulator and its institutional relations with service providers; and (g) clarity on roles and responsibilities on water and sanitation services, with the LAs being designated service authorities, and ZINWA and the private sector being service providers.

9. **The Bank, through this project, will support the WSS sector in growth centers, areas that are currently under-supported by other interventions.** The ZIMFUND, managed by the AfDB, currently provides the bulk of investment support to large towns, while UNICEF (with funding from the DFID and Australian Aid) is primarily responsible for advancing rural WASH interventions. Growth centers are seen by the Government as the missing middle. The Bank financed TA for a needs assessment for 50 (of the 538) ZINWA stations under the A-MDTF. The assessment estimated that US$100 million is needed to restore water services in the

[4] As the Government is in arrears to the Bank, IDA funding is not available to Zimbabwe, and there have been no investment operations for over 15 years.

[5] This was funded through a grant from the Bank-managed State and Peacebuilding Fund.

[6] Despite this shortcoming, the study drew attention to tariff levels and influenced (a) the Chegutu Municipality to increase its tariffs; (b) the Government to actively encourage the LAs to undertake systematic assets valuation; (c) the Ministry of Water to recommend to the Ministry of Local Government, Public Works, and National Housing that the water and sewerage account be ring-fenced; (d) the Ministry of Local Government to issue a circular to the LAs to this effect; (e) the Ministry of Local Government to adopt an annual performance benchmarking process for all the LAs, which has demonstrated that (i) transparency can be enhanced through an LA-organized peer review process which allows for non-punitive incentives for service improvements, (ii) collaboration between ZINWA and the LAs can be enhanced, especially in towns where ZINWA supplies both bulk and treated water to the urban areas (Beitbridge, Gwanda Gokwe, Hwange, Karoi, and Mvurwi), and (iii) credible, evidence-based data is obtained and used by all including donor partners; (f) quick wins—for instance, meter replacement which led to the replacement of 20 percent of meters that account for 80 percent of consumption; and (g) the Ministry for Water to send out a circular discouraging the use of a fixed charge (where there is no service), but instead use volumetric tariffs.

50 stations and address all immediate, medium-, and long-term investment needs. Seven priority stations were selected with ZINWA based on an agreed criteria, and are the focus of the investments under this project.

10. **The National Water Policy places the responsibility for urban WSS with the ULAs and rural WSS with the RDCs.** Wherever the LAs lack the capacity to improve services, they can delegate water service provision to an appropriate water service provider. These service providers could be private operators or ZINWA—most water supply systems in growth centers are currently operated by ZINWA.

11. **In addition to its responsibility for water resource management, ZINWA has also been delegated the responsibility for water supply in 538 ZINWA stations.** ZINWA was established under the ZINWA Act of 1998, primarily as a catchment management agency to oversee the functioning of Zimbabwe's seven Catchment Councils. ZINWA also operates 538 stations that supply water to a wide range of areas (cities, towns, rural growth centers, and farmers). The stations vary in size from single boreholes supplying to single government institutions to full-fledged water supply systems for towns.

12. **ZINWA serves around three million people through bulk treated water supply and direct supply to customers, and it must be strengthened to become a commercially viable, customer-focused utility.** ZINWA has evolved from an engineering department in the national government to an autonomous utility; however, it still has a long way to go to help recover costs and adopt a modern customer focus. The government recently introduced results-based management in parastatals and government departments, and has targeted a number of parastatals for reforms, including ZINWA. The government's position on state commercial enterprises, including ZINWA, is that they should be reformed to fund their own operations and achieve full cost recovery. ZINWA lacks commercial and customer orientation: tariffs generally cover operation and maintenance (O&M), but are inadequate for funding capital costs; low revenue collection and poor commercial functions further deplete ZINWA's finances. ZINWA has been working to establish more robust customer and commercial departments, but with little progress. The Bank supported ZINWA to diagnose the core institutional challenges it faces, and to propose a series of measures to be implemented to improve the efficiency and effectiveness of the institution.[7] Some of these measures will be introduced under this project.

13. **In addition to the growth center investments, the government requested the Bank to support the creation of an independent regulator, as stipulated by the National Water Policy.** The Bank commissioned a review of the sector which recommended a stand-alone economic regulator, similar to the water and sanitation regulator in Zambia (the National Water and Sanitation Council).[8] The formation of an independent regulator has been approved by the Cabinet.

14. **The Bank established a new multi-donor trust fund, the Zimbabwe Reconstruction Fund (ZIMREF), and can provide investment support in addition to TA.** The ZIMREF aims

[7] Stanton Chase International, and Impact Strategy Consulting. 2014. *Zimbabwe Small Towns Water Supply Improvement Project: ZINWA Strategic Gap Analysis and Skills Audit Study*. Final Report.
[8] Economic Consulting Associates. 2014. *Review of Water Supply, Sanitation, and Hygiene Coordination and Regulation in Zimbabwe.*

to strengthen Zimbabwe's systems for reconstruction and development through three thematic windows: (a) private sector growth, (b) systems and capacity development, and (c) resilience and livelihood support. The Ministry of Finance and Economic Development (MoFED) requested the Bank to support two priority activities under the ZIMREF—a 'small town's water supply investments and TA' and 'climate resilience, national water resources, and an irrigation master plan'—both covered under this project.

C. Higher Level Objectives to which the Project Contributes

15. **Bank priorities are guided by Interim Strategy Note 3 (ISN3) for the period July 2013 to June 2015, and this project is consistent with ISN3.** ISN3 focuses on measures needed to ensure the Bank's readiness for eventual reengagement, and lists infrastructure—and water and sanitation in particular—as a focus sector. The project addresses core public health risks from inadequate water and sanitation, especially against the background of the 2008-09 cholera epidemic, consistent with the Bank's and donor's priorities in Zimbabwe. By addressing public health risks, and focusing on the growth centers that have been most affected by the economic crisis, the project is also well-aligned to the Bank's twin goals of eliminating poverty and promoting shared prosperity. Development partner funds to the water sector are predominantly through UNICEF (with DFID and Australian Aid funding) in the rural sector and through the AfDB (ZIMFUND) in the urban sector. Growth centers are under-supported, and ZINWA does not receive funding from other development partners.

16. **This project is consistent with government priorities as stated in the Zimbabwe Agenda for Sustainable Socioeconomic Transformation (ZimASSET).** Cognizant of the need to rehabilitate and expand the country's infrastructure, the government that took office following the 2013 elections launched ZimASSET, an economic blueprint for the period 2013–2018. ZimASSET contains a long list of infrastructure projects that the government wishes to realize during its mandate period, though government funds—primarily through the Public Sector Investment Plan (PSIP)—fall short of the funds needed to implement ZimASSET. The government hopes that development partners and the private sector will fund some of the projects.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

17. The proposed project development objective (PDO) is to improve access and efficiency in water services in selected growth centers and to strengthen planning and regulation capacity for the water and sanitation sector.

18. This will be achieved through strengthening of the capacity of ZINWA and the MEWC through investments in seven growth centers and TA. The project is expected to directly benefit about 52,000 people living in the seven growth centers and the seven LAs, national government, and ZINWA through TA. Improving efficiency refers to improving the collection rate and reducing nonrevenue water (NRW) in the seven ZINWA stations covered under the project.

Project Beneficiaries

19. The project will have the following types of beneficiaries:

(a) The project will rehabilitate and upgrade water supply systems in seven growth centers and rehabilitate sanitation systems in three growth centers. As a result, a total of about 52,000 people will be direct beneficiaries from improved and expanded services.

(b) The project will also benefit the seven local governments in the growth centers, the national government, and ZINWA through TA and training.

PDO Level Results Indicators

20. The achievement of the PDO will be measured with regard to the following indicators:

(a) Direct project beneficiaries (percentage of which are female)

(b) People provided with access to 'improved water sources' under the project

(c) Improved collection rates for seven ZINWA stations supported by the project

(d) Reduced NRW in the seven ZINWA stations supported by the project

(e) National Water Resources Master Plan completed and endorsed

(f) Roadmap for establishing the WSS regulator endorsed

III. PROJECT DESCRIPTION

A. Project Components

21. The project will have three components:

(a) Growth center water and sanitation improvements

(b) Technical assistance

(c) Project management

22. Further details are provided in annex 2.

23. **Component 1: Growth Center Water and Sanitation Improvements (US$14.04 million).** This component will finance investments in WSS rehabilitation and upgrading in seven growth centers: (a) Guruve, (b) Gutu, (c) Lupane, (d) Madziwa, (e) Mataga, (f) Nembudziya, and (g) Zimunya. Detailed designs (including bills of quantities and tender documents) and preliminary Environmental Impact Assessments were completed for all seven growth centers in 2014 to address short-, medium-, and long-term investment needs. These plans were further updated in October 2015 by ZINWA. Investments will include expanding and

rehabilitating water treatment works, boreholes, transmission mains, storage and service reservoirs, distribution systems, connections, and meter installation and replacement. The works also include restoring wastewater treatment systems in some project areas where centralized wastewater systems are in place but not functional (for instance, clearing and de-sludging, repairs of inlet works, fencing, and restoring operator facilities).

24. **Component 2: Technical Assistance (US$5.11 million).** TA will be provided to strengthen the capacity of the relevant national and local institutions to ensure the sustainability of investments and improve the overall planning, regulation, and reform of the sector in line with the National Water Policy.

25. **Subcomponent 2.1: National Water Resources Master Plan (US$3 million).** The government requested TA to develop a National Water Resources Master Plan, building on the Water Resources Management Strategy of the mid-1990s and the subsequent River System Outline Plans (RSOPs).[9] The master plan is expected to provide (a) a full analysis of the quantity, quality, and spatial distribution of the water resources; (b) a detailed characterization of the current use of water resources and the spatial distribution of the demand for water; (c) a detailed characterization of demand by type of user; (d) an assessment of the varying demands; (e) a projection of future demand; (f) an assessment of the resilience of the water resources to climatic variability and indicative adaptation measures to climate change; (g) an assessment of in-stream environmental flows and other key environmental considerations in water resource management; (h) the gap between supply and demand; and (i) an institutional and investment needs assessment to bridge the supply-demand gap.

26. **Subcomponent 2.2: Technical Assistance for a Water Services Regulator (US$0.25 million).** In 2013, the government requested support to review the coordination and regulatory mechanisms in the water sector. The government is committed to establishing an independent regulator for the water sector.[10] This TA will provide the government with support to set up the new regulator. While the government has in principle endorsed the creation of a single economic regulator for both water supply and water resources, the details for its establishment must still be articulated. The specific set of activities for which the government requested support included the preparation of background papers to inform the government on the institutional and financing options available and any start-up funds that may be needed for first-year investments (office furniture, personnel costs, and so on). This support will be split between this TA and the WSP TA as follows: (a) WSP TA—background papers on (i) the appropriate type of institutional structure, (ii) the most appropriate business model for financing the regulator, and (iii) defining a roadmap for establishing the regulator, including timeframes, the nature of stakeholder consultations, south-south learning exchanges, and estimates on the full cost of establishing the regulator[11] and (b) this TA—support some of the key first-year investments for the established regulator and some capacity support and training, as appropriate.

[9] Commonly called Catchment Outline Plans developed and gazetted by the Government in the mid-2000s.
[10] The establishment of a water sector regulator was approved by a Cabinet Memorandum in April 2015. The recommendation was made in the Economic Consulting Associates report (October 2014) Review of Water Supply, Sanitation, and Hygiene Coordination, and Regulation in Zimbabwe.
[11] The Government will be responsible for drafting the legal instruments, based on the institutional structure and financing model proposed and pass the parliamentary bill for the creation of a regulator.

27. **Subcomponent 2.3: Technical Assistance to Local Authorities (US$0.4 million).** This subcomponent will finance three activities proposed by the Ministry of Rural Development and Preservation of Cultural Heritage (MRDPCH) and the Ministry of Local Government, Public Works and National Housing (MLGPWNH): (a) TA to support the LAs and ZINWA for formalizing Water Service Agreements, (b) updating spatial plans for the growth centers, and (c) sanitation promotion and hygiene education. Once the Water Service Agreements have been formalized, the WSP-TA will support the monitoring and reporting of the Water Service Agreements through the SLB, an activity currently being undertaken for the 32 ULAs. It is proposed that there will be capacity building in the area of spatial planning through training.

28. **Subcomponent 2.4: Institutional Strengthening of ZINWA (US$1.25 million).** In 2014, at the request of ZINWA, the Bank financed a skills audit and strategic gap analysis to identify key areas to strengthen ZINWA. Three key areas were identified as priorities: (a) separating ZINWA's utility and water resources functions, (b) improving commercial orientation, and (c) improving customer focus and poor stakeholder management. This subcomponent will also help ZINWA to carry out a sanitation needs assessment for growth centers, including developing options for sanitation in these areas.

29. **Subcomponent 2.5: Training (US$0.21 million).** The project will support a training plan developed by the MEWC, together with ZINWA and other relevant agencies. The training plan includes training needs of all project implementing entities, such as the MEWC, MLGPWNH, MRDPCH, Ministry of Agriculture, Mechanization, and Irrigation Development, and the LAs in the project areas, but will focus on the operational training needs required by ZINWA to implement the project and ensure sustainability of the investments beyond the project. There will also be on-the-job training through mentoring by consultants hired to support the Project Implementation Unit (PIU).

Component 3: Project Management (US$0.85 million)

30. ZINWA will set up a PIU to manage the project. The PIU will directly manage Component 1 and act as secretariat to the various lead ministries for Subcomponents 2.1, 2.2, and 2.3. The PIU will be staffed with 5–7 staff, including a project manager and staff with expertise in engineering, procurement, financial management (FM), safeguards, and monitoring and evaluation (M&E). The PIU may also have secondees (focal point officers) from other entities participating in the project.

Project Costs and Financing

31. The project cost is US$20 million which will be financed through a ZIMREF grant. The summary project costs are provided in table 1. A detailed cost breakdown is given in annex 5.

32. Currently US$10 million is available from ZIMREF, and so the first Grant Agreement for this Project will be for this amount. The works contracts under Component 1 have been arranged in two tranches, so the project can move ahead with the first package with the funds available now, and then with the second package when the remaining US$10 million becomes available. The Grant Agreement will be amended when the remaining US$10 million will be available, which is expected to be in the next few months.

Project Components	ZIMREF Financing (US$, millions)
Component 1. Growth Center Water and Sanitation Improvements	**14.04**
Component 2. Technical Assistance	**5.11**
Subcomponent 2.1 National Water Resources Master Plan	3.00
Subcomponent 2.2 TA for a Water Services Regulator	0.25
Subcomponent 2.3 TA to Local Authorities	0.40
Subcomponent 2.4 Institutional Strengthening of ZINWA	1.25
Subcomponent 2.5 Training	0.21
Component 3. Project Management	**0.85**
Total Financing Required	**20.00**

B. Lessons Learned and Reflected in the Project Design

33. **The Bank has had a close partnership with the Government in the water sector over the past five years.** Although support has been largely limited to TA, the Bank formed a close partnership with the MEWC and ZINWA through these activities, and is seen by the Government as a key partner in the water sector. These activities have laid the foundation for the proposed project, and given the Bank a unique position among the development partners to support key policy reforms (such as developing the master plan and creating the regulator). This project was prepared under the A-MDTF (including technical, economic, and institutional assessments).

34. **The Bank has a comparative advantage in working in small towns as a niche area for support.** With WSP funding, the Bank assessed the investment needs in 10 small towns to mobilize resources and address critical service delivery needs. This report provided some of the analytical underpinnings for the design of the Beitbridge project, a successful small town WSS project that benefited 40,000 people.[12] The partnership between the Beitbridge Town Council and ZINWA provides a model for future growth center projects, and the lessons drawn from the Beitbridge project have been used to design this project. This model of service delivery—of decentralizing responsibility to the local level, using government systems, and developing a collaborative relationship between ZINWA and the LA—is the core approach in this National Water Project. The new water policy requires a more formal and professional relationship between ZINWA and the LAs, and this partnership model will be further strengthened through the Water Service Agreements supported under the project.

35. **The Bank has provided extensive support to the Government in reviewing its own investment in the water sector through public expenditure reviews of the Public Sector Investment Program from 2009–2013.** Recommendations from these reviews influenced the

[12] World Bank. 2013. *Implementation Completion and Results Report for the Zimbabwe Beitbridge Emergency Water Supply and Sanitation Project*.

allocation of the Ministry of Finance between the water subsectors (water resources management and rural and urban WSS), and led to the request from the Government to do a Water Sector Investment Analysis. The Water Sector Investment Analysis provided an in-depth review of spending in the water sector and identified subsectors with the highest economic rates of return, and priority investments in each of the subsectors. The Government has used this analysis to screen water sector investments, and it was used in the selection of investments under this project.

36. **Key lessons on supporting service delivery in fragile states have also been built into this project**, particularly on (a) working with governments to overcome the 'capacity conundrum' by engaging directly with the state's role in developing infrastructure and (b) the analysis and support required to identify and build on resilient service delivery models.

37. **An early stumbling block to programmatic approaches in fragile states is the 'capacity conundrum'**: the aftermath of conflicts or economic crises results in both damaged infrastructure and government capacity that is too weak to deliver a peace dividend that meets basic donor accountability requirements and service delivery standards. There are two common responses from donors to this capacity conundrum: (a) channel funding to nonstate actors (often agreements between bilateral donors and a combination of United Nations agencies, national, and international NGOs, with short-term humanitarian objectives) and (b) setting up parallel state delivery systems such as community-driven development or social action funds.[13] While these strategies help in delivering services (including drilling of boreholes, trucking water, or provision of chemicals and toilets), they fail to build capacity for a country-led service delivery capable of translating finance into services.

38. **Overcoming the 'capacity conundrum' can be resolved only by engaging with government institutions directly.** It is only by channeling finance though country systems and enabling domestic institutions to learn by doing that, the capacity of government institutions is built.[14] This requires a careful stakeholder analysis and a higher degree of implementation support than is usual in more stable countries. An implementation arrangement endorsed by the Central Government was selected; however, it provides direct financing to ZINWA (arm's length from Central Government).[15] This will be the first time in many years that external funds are routed through government systems under a recipient-executed trust fund. ZINWA will be

[13] These multi-donor, multisector funds are often bolted on to a powerful central ministry such as the office of the president and administered by international development banks with medium-term reconstruction and development objectives including building positive citizen-state relations.

[14] For instance, in Liberia, by not entering into a direct financing arrangement on water and sanitation with the government, development partners missed the opportunity to shape the institutional structure of the water sector in the early post-conflict period. The lack of a substantive policy dialogue—particularly in the 2003 to 2007 period—meant that an extremely fragmented institutional setup emerged at the ministerial level with no clear locus of policy authority. Changing the established institutional set up—which has been unsuccessfully attempted since—remains a challenge to ongoing institutional capacity building and sector investment. An earlier move to development funding for water and sanitation through country systems would have been a point of leverage to influence institutional reforms and build a nucleus of capacity to orchestrate the actions of nonstate actors.

[15] This has proved a successful model in Zimbabwe where the Bank directly financed the rehabilitation of a small-town water supply and sanitation project with the Beitbridge Town Council that benefited 40,000 people. The project facilitated a partnership between the Beitbridge Town Council and ZINWA in which the council took on the role of the water and sanitation services authority and ZINWA, the role of service provider—mutual accountability in line with the National Water Policy.

responsible for the implementation arrangements and this hands-on experience will enhance its capacity as a technical agency to design, build, and operate water services using its core FM, human resources, and billing systems.[16]

39. **In fragile states, indicators of sustainability are often even worse than in politically stable countries.**[17] But there are also surprisingly robust service delivery models that can emerge in fragile states. Driven by basic needs and a limited tax base, the Hargeisa Water Agency in Somaliland emerged from a period of intense conflict in the 1990s to become a self-sustaining utility and a net contributor (through a sales tax) to the government budget. In the Democratic Republic of Congo , so-called autonomous piped systems supply over five million peri-urban and rural people with no subsidy from the state. These models are not only sustainable but regularly weather internal and external shocks.

40. **This project aims to spread the highly decentralized municipal model, which has proven to be remarkably robust through the period of economic crisis, to emerging growth centers.** The Water Service Agreements between the RDCs and ZINWA will strengthen accountability with local citizens. The Water Service Agreements will also indirectly empower local councils by expanding the number of serviced housing stands under their jurisdiction and so expand the local tax base that councils can raise from housing rates.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

41. **There will be three legal agreements:** (a) the MoFED, representing the Government of the Republic of Zimbabwe, will sign a Grant Agreement for the ZIMREF Grant with the Bank; (b) a Subsidiary Agreement between the MoFED and ZINWA through which funds and responsibility for project implementation will be passed on to ZINWA; and (c) a Project Agreement between ZINWA and the Bank which will define eligible activities and implementation modalities. ZIMREF covers the supervision costs.[18]

42. **The Government will establish the National Water Project Steering Committee (PSC)—a high-level committee to oversee coordination and implementation of the project.** It will be chaired by the MEWC and draw members from ZINWA and the relevant ministries (senior officers, preferably directors). The PSC will report to the Government through the minister of the MEWC. The PSC will be responsible for resolving any problematic issues related to policy, inter-departmental communication, coordination among entities, and any change in project design or reallocations.

[16] Under the Beitbridge project, funds were channeled through the Beitbridge Town Council. This project was implemented on time with no cost overruns—unallocated funds were used for additional activities. The fiduciary performance was Satisfactory according to the Implementation Completion and Results Report.

[17] A 2012 water point mapping survey of rural infrastructure in the Republic of Congo revealed that 50 percent of rural piped systems were nonfunctional after just five years of installation. In 2014, the utility in Port Harcourt, Nigeria which had failed for years to recover any costs from customers was left serving just 1 percent of the city's million plus population.

[18] There is $800,000 allocated for supervision by ZIMREF.

43. **ZINWA will implement the project through a PIU.** The PIU will have direct responsibility for activities under Component 1 and Component 3. Component 2 will be administered by the PIU, but different agencies will be responsible for the technical leadership of various subcomponents: 2.1, 2.2, and 2.5 by the MEWC; 2.3 by the MRDPCH and MLGPWNH; and 2.4 by ZINWA.

44. **The PIU will be responsible for project management, including monitoring the progress in each catchment, and procurement.** The PIU will also be responsible for (a) overall coordination of project activities, (b) managing the project's special account and ensuring proper and timely project accounting and reporting of project expenditures, and (c) preparing consolidated progress reports. The project manager will be the focal point for the Bank, and will work closely with focal point officers from participating entities, the PSC, and each Project Implementation Team (PIT) (see next paragraph). The PIU will also serve as the PSC's secretariat and will coordinate and prepare minutes of the PSC meetings.

45. **The PITs will be established in each catchment to implement subprojects and coordinate Component 1 activities.** The PITs will be made up of an operations engineer[19] and financial support staff. The PIT will also include secondees from the LAs. The operations engineer will act as the PIT team leader (and resident engineer) and will report to the project manager and the catchment manager. The catchment manger will be tasked with overseeing progress on works in the catchment. The PIT will be responsible for day-to-day activities related to the project, including drawing or approving specifications of goods, works, and services in the catchment, and preparing procurement requests to be forwarded to the PIU. The PIT will also be responsible for supervising and certifying works,[20] preparing payment certificates, receiving and verifying material specifications, and maintaining accurate project records (materials, work done, and labor and equipment returns). The PIT will also oversee the consultants working on activities in the catchment. It is expected to meet regularly and prepare progress reports covering progress to date, disbursement progress, update on procurement, safeguards compliance, M&E aspects, bottlenecks affecting progress and proposed measures to address them, and plans of action for remaining works and progress and disbursement projection.

B. Results Monitoring and Evaluation

46. **The project's Results Framework—shown in annex 1—forms the basis to track progress in meeting the project's objectives.** As part of the project, ZINWA will submit semiannual reports to provide an overview of progress made and highlight issues that require attention. The PIU will include a dedicated M&E specialist responsible for ensuring all project M&E is done.

47. **The project will pay close attention to M&E as this is one of the first Bank investment projects in Zimbabwe in over a decade, and can inform future investments in the water and other sectors.** ZINWA will set up an M&E system in the PIU that will report to

[19] Operations engineers are engineers responsible for the day-to-day operations of WSS systems in the catchments. It is proposed that they will be assisted by a technician or a junior engineer in the day-to-day supervision of the works under the project.

[20] The Bank will carry out an assessment of ZINWA's capacity to supervise the contracts in-house, and measures to strengthen this capacity will be put in place.

the PSC and the Bank. The M&E specialist will assist the PIU and PIT to conduct periodic M&E and prepare M&E progress reports. The PITs in each catchment will conduct monthly reviews to assess physical progress, progress toward targets including connections, identify implementation bottlenecks, and propose solutions to speed up progress. The project manager will prepare quarterly consolidated progress reports for the PSC and the Bank covering (a) progress to date in the implementation of the project, (b) challenges and proposed actions to address them, (c) status of the procurement of goods and materials, (d) status of disbursements and projections, (e) the environmental and social safeguards, and (f) monitoring and evaluation. The PIU will submit the report to the Government and the Bank; the Bank will submit the report to the ZIMREF working group.

C. Sustainability

48. **Government commitment.** Since the cholera crisis of 2008-09, the Government has embarked on significant policy and institutional reforms to rehabilitate the sector. Sector institutions have been rebuilt under the MEWC. The Government, through ZINWA, supported the preparation of a needs assessment survey of the water supply systems of 50 small towns and growth centers managed by ZINWA—one from each of the seven catchments have been selected for support under this project. The Government has demonstrated its commitment to this project, and is keen to demonstrate that this model can work and be replicated in other growth centers.

49. **Financial sustainability.** The financial analysis of the subprojects demonstrated that the investments will be financially sustainable—the expected revenue from the subprojects would exceed the expected variable costs (O&M costs). A detailed financial analysis is included in annex 6.

50. **Operational sustainability.** The project will support a training plan covering the capacity gaps as identified under the needs assessment study carried out under the A-MDTF. The training plan will include training needs of all project implementing entities—the MEWC, MRDPCH, MLGPWNH, and LAs in the project areas—but will focus on the operational training needs required by ZINWA to implement the project and ensure sustainability of the investments. There will also be on-the-job training through mentoring by consultants hired to support the PIU. All Terms of Reference (ToRs) and plans required for implementation of these TAs will be developed by ZINWA and cleared by the Bank before procurement. While the new policy reallocates responsibility for urban water services in the growth centers to the local government, it also requires authorities to ring-fence revenue from water sales and to set tariffs to achieve full cost recovery in the normalized phase. During the recovery period, the Government will provide interim subsidies to urban authorities through the PSIP and development partner financing that will be coordinated within a Water Sector Investment Framework to finance rehabilitation and expansion of infrastructure. Development of a Water Service Agreement with an operator, in line with the 2013 National Water Policy, will also help ensure the sustainability of the proposed investments.

51. ZINWA is staffed with competent engineers and managers and has experience working on a range of projects, including large and complex ones. ZINWA has a strong track record of design and implementation of infrastructure projects for water supply, including dams, and has the capacity to carry out designs and prepare specifications and tender documents internally.

52. **Environmental and social sustainability.** The implementation of this project is accompanied by the implementation and M&E of each of the seven Environmental and Social Management Plans (ESMPs) prepared by ZINWA for each respective subproject. The ESMPs' budget is included in the budget for both Component 1 and Component 3 and will be part of the bidding documents to ensure effective implementation by both ZINWA and its contractors. The major environmental concern arose from water pollution potential from backwash effluent disposal and dam safety concerns. Sustainable backwash treatment and disposal has been provided in all applicable subproject areas and dam safety inspections have been carried out. Resettlement screening was conducted as part of the ESMP formulation and there will be no resettlement in any of the subproject areas. The project will enhance social health by triggering a series of positive social impacts including personal hygiene, more time available for other activities, and alleviating the burden of household water supply from women and girls. Stakeholder consultations were conducted in all subproject areas and the local communities, local leadership, and the LAs will work closely with ZINWA and its contractors to ensure that potential negative environmental and social impacts are mitigated while the positive impacts are enhanced. This engagement will be maintained throughout the project's life.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

53. The risk ratings after mitigation measures are in place are reflected in the table below.

Risk Category	Rating
1. Political and Governance	Substantial
2. Macroeconomic	High
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Moderate
8. Stakeholders	Moderate
9. Other	
OVERALL	**Substantial**

54. **Overall risk rating is Substantial.** The project has used the interim guidance note for Systematic Operations Risk-Rating Tool (SORT) to assess the project risks. The assessment rates political and governance, institutional capacity for implementation and sustainability, and fiduciary risks as Substantial; macroeconomic risk is considered High. All other risks are considered Moderate, and the overall risk is rated as Substantial. Risk mitigation measures are further detailed in annex 3; risks rated as Substantial and High are detailed below.

55. **Political and governance risk is considered Substantial.** While ZINWA has the necessary capacity to implement the project, its governance has been the subject of political debate and interference over the years. The project will support ZINWA to transition into a commercially viability entity, but there is a further risk that this may in itself attract undesired interest. Ring-fencing ZINWA against these external interests has not been effective in the past. ZINWA has a new chief executive officer in place since September 2015, who may influence its organizational stability. The debate on the separation of roles between ZINWA and the LAs may

be enhanced through the performance contracts to be supported through this project, but the weak benefits sharing arrangements with the LAs may negatively influence the sustained growth of this relationship.

56. **Macroeconomic risk is considered High.** The macroeconomic outlook for Zimbabwe will significantly affect customers' ability to pay for services in the project areas. ZINWA has been enjoying reasonably good tariff setting arrangements through the MEWC, but this may also be subject to risk as political and other interests take center stage. Government institutions and civil servants form the bulk of the customer base in small towns, and the national macroeconomic scenario has a significant effect on the Government's ability to pay for services. However, this risk can be minimized by effectively ring-fencing water accounts in ZINWA. Water Service Agreements between ZINWA and the LAs will, on the one hand, clearly define the expected performance of ZINWA based on key performance indicators such as reliability of water supply, efficiency in revenue collection, access, and coverage, and so on, while on the other hand obliging citizens and their local political representatives to advocate and pay for water services. Tariffs established on the basis of such mutual obligations will enable effective citizen support, allow for regular evidence-based performance monitoring, and are likely to increase willingness to pay (WTP).

57. **Institutional capacity for implementation and sustainability risk is considered Substantial.** An institutional capacity gap assessment identified the following three key areas as priorities for building ZINWA's capacity: (a) separating the utility and water resources functions of ZINWA (as identified in the National Water Policy), (b) improving commercial orientation, and (c) improving customer focus and stakeholder management. Addressing these three areas constitutes a major institutional challenge, and the project will finance TA and capacity-building activities to address these gaps.

58. **Fiduciary risk is considered Substantial.** ZINWA's staff lack familiarity with Bank operational procedures and this poses procurement and FM risks. The only exposure ZINWA has had to Bank fiduciary processes over the last decade was through the Beitbridge Emergency Water and Sanitation Project—in this case funds were channeled through the Beitbridge Town Council and ZINWA staff were minimally involved in procurement and FM. However, ZINWA is adequately staffed with qualified personnel in its Finance Department. An FM assessment was carried out in May 2015, and concluded that the proposed FM arrangements for the project will meet the Bank's minimum FM requirements under OP/BP 10.02 in ensuring accountability and transparency in administering the project funds.

59. **The team has applied the Climate Change and Disaster Risk Screening Tool to understand the potential risks to the project from the effects of climate change in the project areas.** Projections for Zimbabwe indicate that daily minimum and maximum temperatures have risen over the last century, annual rainfall has become more variable, and there is anecdotal evidence that the wet season has progressively started later. These changes are likely to decrease the availability of water. A project designed to strengthen the water sector's capacity to deliver water and sanitation services will help to significantly reduce the potential impacts of climate change. The Water Resources Management Master Plan will fully assess the impact of climate change on the country's surface and groundwater and further assist in mitigating any climate change impacts.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

60. **A full economic analysis for six of the seven growth centers covered under the project was carried out by a consulting firm during the preparatory stage, and has been reviewed and updated.** This and the financial analysis are in annex 6.

61. The Bank adds value through bringing the expertise developed under the A-MDTF, and through its convening power of the donors involved in ZIMREF. The Bank's value-add is further bolstered by the project's focus on institutional reform and strengthening of ZINWA, in particular to begin the process of transforming ZINWA into a commercial utility. Given the project's focus on rehabilitating and expanding the water schemes in growth centers—those areas most affected by the economic crisis—it will address various redistributional and social issues, justifying public sector financing.

Economic Analysis

62. **The subprojects for six of the seven growth centers were analyzed to assess their economic viability.**[21] The cost benefit for the subprojects shows that all projects are economically justified. The range of economic benefits expected from the proposed subprojects for both households and businesses were examined.

63. For households, the main benefits were the following:

(a) **Time saved, mostly for women.** In some growth centers, women spend up to four to six hours per day collecting water from currently distant water sources.

(b) **Reduced health risks.** In many towns, people could use flush toilets instead of going to the bushes for defecation. This will lower the risk of groundwater contamination through defecation.

(c) **Speed up construction work.** Construction of houses in many new developments will be faster once water for buildings no longer has to be collected from remote sources.

(d) **Increased food security through gardening.** Most interviewed women said that they would use water for gardening to save money and increase food security.

64. For businesses, the main benefits were from employment creation and income increases associated with higher levels of output requiring water as an input (for example, food-processing industries).

65. **Economic benefits were measured as customers' WTP in addition to any positive impacts that would not be captured in a WTP assessment.** The WTP is a lower-bound

[21] The information needed for the economic and financial analysis for Gutu is not yet available. The investments in Gutu will be carried out during the second phase of the project. Ahead of these investments, ZINWA has committed to provide the Bank with the data needed for the economic analysis.

estimate of economic benefits. To estimate households' WTP in the six growth centers, two different WTP methods were used: (a) a WTP household survey and (b) a meta-analysis of existing WTP studies.

66. **Both methods led to similar results of a WTP of US$20 per household per month.** To obtain the total economic benefits of a subproject per year, households' WTP per month was multiplied by the total number of households with a functioning connection.

67. **Economic benefits from people that would benefit from connected businesses or institutions such as schools or universities were then added to this.** For example, WTP also did not capture the economic value of training urgently needed teachers for the country (in Madziwa) or increasing the number of students at universities (in Lupane). It also does not reflect the positive impact of Lupane assuming its role as the new provincial capital of the Matabeleland North Province. However, these would certainly be benefits of the subprojects. In these cases, the number of students that would benefit from a functioning connection was multiplied by US$5 per beneficiary per month.

68. **Finally, the WTP results were triangulated against standard economic benefits reported for water supply projects.** Households' WTP methods, while measuring inconvenience well, tend to underestimate the standard benefits associated with improved access to water supply.[22] Standard economic benefits include time savings, reduced health risks, faster construction work, and increased food security. In the case of these six growth centers, the economic benefits of time savings would have greater returns compared with the WTP results.

69. **The economic rates of return range from 11 to 26 percent, and assume a social discount rate of 10 percent.** The project will improve access to water and contribute to improvement in the standard of life in the project areas for about 52,000 people. It will also contribute to increased economic growth in the areas; a rapid survey carried out in 14 of the 50 towns covered by the needs assessment concluded that water was one of the key determinants to economic growth in the areas. Some of the economic benefits will come from better use of time, especially for women and children due to reduction in time required for fetching water. The other potential benefits will be from reduced health and medical costs at the household and government levels as a result of improved access, and improved water quantity and quality.

Financial Analysis

70. **The financial viability of this project relies on (a) the financial viability of ZINWA as the utility managing the water stations as well as (b) the scheme-level economic and financial viability.** Though ZINWA reported a loss of US$32 million in 2013, a critical analysis of ZINWA's financial statements reveals the following more nuanced picture of its performance:

[22] Whittington, Dale, W. Michael Hanemann, Claudia Sadoff, and Marc Jeuland. 2009. "The Challenge of Improving Water and Sanitation Services in Less Developed Countries." *Foundations and Trends® in Microeconomics* 4 (6–7): 469–609.

(a) The 2013 loss was due to a Government directive to a one-time write-off of the arrears for domestic customers (US$32.8 million).[23]

(b) Operating profit in 2013 before depreciation, amortization, and the debt write-off was positive (US$9.3 million).

(c) Much of the remaining debt is with Government institutions (US$16 million), irrigators (US$30 million), the LAs (US$20 million), parastatals, and other corporate consumers (US$12.5 million), and at least partially recoverable through direct negotiation with customers and off-setting with tax and other liabilities due to the Government.

(d) There is a critical cash flow problem as cash receipts were US$33 million and cash payments US$47 million.

71. While a repeat of the debt write-off directive is a real risk to ZINWA's viability, there is potential to sustainably grow the core raw and clear water businesses which generated revenues of over US$57 million.

72. **In the short term, ZINWA urgently needs to address its negative operating cash flows.** To do this, ZINWA will need to improve the billings to collection ratio both for domestic and other categories of consumer. ZINWA can also begin improving its cash flow by (a) broadening its customer base to reduce dependence on supplying clear water to Government institutions, (b) disaggregating costs between services (raw water supply and clear water supply) and regulatory and catchment management services, and (c) consolidating tariff blocks for clear water.

73. **Financial models were built for six subprojects to analyze two questions.** First, whether or not the subprojects would be financially sustainable, meaning that revenue will exceed O&M costs. Second, the financial models analyzed whether or not the subprojects would be financially viable, meaning that the subprojects would generate a reasonable rate of return to investors estimated at the prevailing cost of capital (20 percent).

74. **Demand forecasts were developed for these subprojects.** The water production required to meet this demand was estimated. The required water production informed investment plans. Expected revenue was derived from expected demand, expected O&M costs from required water production, and required capital expenditure from investment estimates generated by ZINWA. Net cash flows for each year were calculated over a planning horizon of 20 years. Finally, the internal rate of return (IRR) and the net present value (NPV) of each the subprojects was calculated.

75. **Based on this method, the financial analysis of the subprojects showed that they would be financially sustainable.** This means that the expected revenue from the subprojects

[23] While the arrears from customers unpaid bills accumulated on the ZINWAs balance sheet as a potentially recoverable asset these were posted as a loss at the point at which the Government declared an amnesty on all un-paid bills. The rationale for this was that the originally potentially recoverable asset was deemed unrecoverable by ZINWA and its auditors.

would exceed the expected variable costs, which are the O&M costs. The subprojects are thus expected to generate cash from operations. This should ensure that the service operator—whether ZINWA or a private company—will continue to service customers in the future.

76. **Collection rates were one of the most sensitive variables in the financial model.** A slight change in the collection rate can have a significant impact on the financial performance of the subproject. Therefore, the following aspects were considered when modelling expected collections:

- **In the last five years, collections rates differed widely between customer categories.** On average, collection rates from commercial customers were the highest, and above 90 percent. Collection rates from residential customers were between 60 and 70 percent. Collection rates from Government vary strongly from year to year. In the past two years, they were as low as 30 percent in some of the priority towns. Collection rates were therefore differentiated for different categories of customers.

- **On average, billed revenue should not be higher than the WTP.** Otherwise, the collection rate from residential customers will be low because people are not willing to pay the billed amount. In the model, the collection rate for residential sales was in line with households' WTP. This ensures that realistic collection rates from residential sales were used.

B. Technical

77. **Component 1: Growth Center Water and Sanitation Improvements.** The investments to be financed under Component 1 for rehabilitation and expansion of WSS systems were identified following a needs assessment survey of the water supply systems in 50 growth centers managed by ZINWA. Seven stations were selected: (a) Guruve (Manyame), (b) Gutu (Runde), (c) Lupane (Gwayi), (d) Madziwa (Mazowe), (e) Mataga (Mzingwane), (f) Nembudziya (Sanyati), and (g) Zimunya (Save).

78. **The seven stations were selected on the basis of addressing underserved areas where mostly the poor live, including new communities (in need of expansion), or schools, clinics, and other public institutions in need of a reliable and safe supply of water.** Some practical considerations were also taken into account (for instance, readiness of ZINWA designs). Geographical spread was incorporated by selecting one station in each of Zimbabwe's seven catchments.

79. **The needs assessment also considered the cost effectiveness of the proposed solutions.** For each town, ZINWA prepared plans for rehabilitating and expanding the systems. These plans were reviewed to remove over-designed elements, and ensure consistency between demand, production, treatment, storage, and distribution. The capital works proposed for each of the small towns have been developed to:

(a) respond to urgent, unmet demand and realistic projections of future demand, in a phased manner;

(b) be technically viable to ensure system capacities meet demand in the short and medium term (at least 10 years); and

(c) be financially and economically viable and cost-benefit justified—in other words, the financial and economic analysis helped to optimize the technical design.

80. **ZINWA (assisted by a consulting team) has prepared bills of quantities and work requirements (project scope of works, technical specifications, and drawings) for each of the seven subprojects.** Special attention was given to ensure that operational improvements are not overlooked, by including, for instance instrumentation and measurement devices (like bulk meters), equipment for chemical dosing, leak detection equipment, establishing District Metered Areas, and so on.

81. **Component 2: Technical Assistance.** The TA financed under Component 2 will strengthen the capacity of the relevant agencies, and help the Government to pilot operationalization of the vision outlined in the National Water Policy. Five areas identified for support under the project include:

(a) **National Water Resources Master Plan.** The MEWC will develop the concept and a detailed ToR for the study with inputs from relevant stakeholders. The master plan will assess the gap between supply and demand and update previous supply assumptions using the latest climate change modelling data;

(b) **Technical Assistance for a Water Services Regulator.** Establishing a water and wastewater services regulatory authority was approved by Cabinet Memorandum in April 2015. This project will collaborate closely with the WSP in helping the Government to establish this regulator;

(c) **Technical assistance to Local Authorities and ZINWA** for developing and formalizing Water Service Agreements, to operationalize the new National Water Policy, and for sanitation promotion and hygiene education;

(d) **Institutional strengthening of ZINWA** focused on improving the commercial and customer care orientation and functions of ZINWA, citizen engagement, developing a gender strategy for the project, and for assessing and promoting sanitation improvements in small towns and growth centers; and

(e) **Training.**

82. **Component 3: Project Management.** ZINWA will set up a PIU to manage the project ahead of effectiveness. ZINWA has submitted a detailed proposal for project management and proposes that the PIU will be mainly staffed with ZINWA staff and will be supported by consultants to be hired under the project to assist in the areas of procurement and contract management. The PIU manager has been appointed, effective November 1, 2015. The PIU will be assisted by the PITs in each of the seven project areas to supervise the works.

C. Financial Management

83. **An FM assessment was carried out in May 2015 to determine whether ZINWA is capable of managing the finances of the project.** The assessment concluded that the proposed FM arrangements for the project meet the Bank's minimum FM requirements under OP/BP 10.02 in ensuring accountability and transparency in administering the project funds. The FM team will, however, provide training and implementation support to the project's FM team when the grant becomes effective. Details of this assessment are included in annex 3.

D. Procurement

84. **Procurement under the project will be conducted by ZINWA on behalf of all the beneficiary agencies.** ZINWA's Procurement Unit will be strengthened and will be responsible for conducting procurement in collaboration with the technical departments in ZINWA and the other participating agencies. Procurement will follow the Guidelines: Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 (revised July 2014), and Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers, dated January 2011 (revised July 2014). The 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, will apply to this project.

85. **From the assessment, the national system for procurement shall not apply under the project due to several inadequacies that render it inconsistent with international practice.** The Government is reforming and strengthening its legislative and institutional framework to address these weaknesses. Beyond the national system, the key risks to procurement are (a) lack of established procurement planning leading to delays and inappropriate procurement, (b) lack of an established Procurement Unit with staff conversant with international project procurement, and (c) lack of clarity on the detailed applicable procedures in the absence of the national system. These will be mitigated by (a) establishing a system of procurement planning and monitoring for the project (the procurement plan has been finalized), (b) hiring a procurement consultant to conduct procurement and build in-house capacity of ZINWA in procurement, and (c) specifying the detailed procedures for procurement in the Project Implementation Manual before effectiveness. The detailed procurement arrangements are indicated in annex 3. In preparation for this project, the Bank's procurement team conducted preliminary training for ZINWA and the other project entities in June 2015. ZINWA is applying the knowledge gained in some of the project preparation activities.

E. Social (including Safeguards)

86. **The project will be implemented in what are called 'growth centers' in Zimbabwe.** These are rural or urban centers that have been specifically designated by the Government as centers of development. Usually, the initial triggers for this development include water and sanitation services, raw materials, energy supply, and a threshold population size capable of consuming services and goods.

87. **The growth centres are administered by the MRDPCH and the MLGPWNH, through the district administrator and the RDC.** The district administrator oversees all the Government departments within the district while the RDC champions development within the district with stakeholder participation through the elected board of ward councillors. The RDC coordinates all other development partners within the district including Government departments, parastatals including ZINWA, NGOs, and private investors. The RDC has the overall authority for service delivery for areas within their jurisdiction, though this can be delegated to service providers like ZINWA for water and sanitation services.

88. **The project activities are targeted for areas already served by ZINWA, the RDC landholding, or individual resident's stands.** In all the seven subproject areas, the water transmission will follow the existing routes while the water treatment components will be within ZINWA's existing plants or RDC-designated land. The distribution network will target individual consumers, institutions, and Government departments. In all these cases, the land use layouts are fully developed and the RDC has been enforcing the respective bylaws ensuring that the service lanes and road reserves are clear of any encroachments. The RDC and ZINWA have exchanged the layouts and physical inspections for the ESMPs and there will be no negative impact on physical structures along the transmission and distribution networks. On this basis, OP 4.12 Involuntary Resettlement is not triggered.

89. **The targeted distribution areas are formal settlements with a mixture of high- and medium-density areas.** Some of the project areas are yet to be constructed while others are already constructed and occupied. For areas that are already occupied, the residents developed and occupied their stands with the full knowledge and anticipation of the installation of water supply and sewer services resulting in the strict observance of the service lanes and road reserves, providing a minimum of 3 m between any back-to-back houses and a minimum of 6 m from the road edges. This development arrangement provides for adequate passage by the distribution network installations.

90. **The growth centres have varying economic activities, thereby dictating a wide range of livelihoods for the host communities from one subproject area to another.** Zimunya is a satellite township of Mutare City and most of the livelihood activities are centred on economic activities in the city. Most households have a family member who is formally or informally employed in the city. Some families supplement the family earnings through vending within Zimunya. Madziwa and Guruve are mining areas and most household earnings are from formal employment in the mining operations at the Shamva gold mine and Zimasco chrome mines, respectively. Gutu, Mataga, Nembudziya, and Lupane are farming areas where most livelihoods revolve around a mix of crop and animal husbandry. The average household income is about US$120/month and the targeted beneficiaries indicate that they are able to pay for the water supply.

91. **The average household size is six in the seven project areas.** Cultural practices in all the seven project areas indicate that women and girls are delegated the responsibility of fetching water for the family. While there are unprotected wells at some households, other families solely depend on the protected pump boreholes that are, on average, 1 km away. There have been reported cases of waterborne diseases for those households using shallow wells within their premises, and the situation remains critical since the households also use on-site sanitation

facilities. For the households that do not want to risk using contaminated water, time must be spent fetching water from the distant protected wells. In Nembudziya, some households spend an average of US$15 per month on 'water carrying gangs' who deliver water in containers using wheelbarrows.

92. **The negative social impacts accruing from this project are negligible and improbable.** These could include risks associated with open trenches within the community and general disruption of privacy during installations in households. There are no resettlement impacts from the project. The potential negative social impacts have been provided through the ESMPs, where emphasis is on close liaison with the host communities, and early backfilling of any trenched areas.

93. **The potential positive social impacts are vast.** The major positive impacts include improving hygiene, alleviating the water supply burden borne by women and girls, and creating the basis for replication in more areas. The anticipated benefits will be enhanced through the provision of a good-quality water supply service including meeting the drinking water quality, maintaining a sustained supply over time, and engaging the citizens continually. It is anticipated that girls will have more time to study and women and girls in particular will have more time for other activities and rest as a result of improved access to water supply.

94. **Key stakeholders—including women, residents associations, Government departments, and the RDCs—were consulted in the development of the ESMPs, which also form a mechanism for continuous engagement with stakeholders throughout the project's life.** A biannual customer survey will be implemented as part of the citizen and stakeholder engagement efforts.

F. Environment (including Safeguards)

95. **The project triggers OP 4.01 Environmental Assessment, OP 4.04 Natural Habitat, OP 4.37 Dam Safety Policies, and OP 7.50 Projects on International Waterways.** The project was screened and classified Category B because the potential negative environmental impacts of the subprojects are site-specific, in already developed areas, and do not negatively affect human settlements or alter environmentally important areas such as wetlands, native forests, grasslands, or other major natural habitats. In line with the environmental assessment policy, the ESMPs were formulated for each of the seven subprojects. The ESMPs have been cleared by the Environmental Management Agency (EMA) and the Bank's regional safeguards advisor. While OP 7.50 is triggered, the project falls under the exception to the riparian notification set out in paragraph 7(a) of the policy; the exception was approved by the regional vice president on October 13, 2015.

96. **OP 4.04 Natural Habitat is triggered for precautionary purposes considering that some of the raw water supply is from dams that may have some fish or other aquatic species.** Mitigation for the policy is considered as part of the ESMPs for respective subprojects and the necessary conservation measures are included as part of the ESMPs. More broadly, overall improvements in environmental flows below Zimbabwean dams overall (not just those linked to this project) will be assessed as part of the National Water Resources Master Plan under Subcomponent 2.1. At the Nembudziya subproject, the repainting of a large elevated water tank

will take place outside the breeding season to avoid disturbing the colony of Little Swifts (*Apus affinis*) that nest underneath the tank. OP 4.37 Dam Safety Policy is triggered because some of the water supply schemes (Mataga, Lupane, Gutu, and Zimunya) predominantly use existing dams as sources of water supply. Dam safety inspections for the above dams have been carried out and approved.

97. **The potential negative environmental impacts of the project are limited and include small-scale erosion from the excavated soils, competition on raw water abstraction, and occupational safety arising from open trenches.** The erosion impacts will be eliminated through timely backfilling and avoiding trenching during the rainy season. The hydrological assessments conducted during the ESMPs' formulations showed that the targeted raw water sources have adequate supply for the environment, domestic water supply, and the surrounding agricultural purposes where applicable. There is therefore no chance of raw water use conflicts within any of the seven project areas. ZINWA has ensured that where it implements the subprojects internally, there will be adequate provision of occupational safety and health mechanisms—including the issue of appropriate personal protective equipment and clear work procedures—especially where there are such risks as drowning, falling from heights, and use of chemicals. Where contractors implement, ZINWA has ensured that the ESMPs are part of the bidding documents that will guide the contractors on related environmental mitigation including occupational health and safety. In subprojects like Guruve, Mataga and Lupane, the subprojects may increase the effluent load to the backwash management system above the current capacity. To mitigate this potential water pollution impact, ZINWA has provided for the upgrading of the backwash management systems. With such upgrading, the resultant water pollution impact is expected to be negligible.

98. **The ESMPs were formulated by ZINWA internally as a means to ensure safeguards capacity building.** To incorporate environment and social safeguards in all project planning, implementation, monitoring, and evaluation processes, ZINWA appointed a safeguards coordinator based at the head office who will be part of the PIU. There are also safeguards representatives based in the seven catchments who were responsible for the formulating the ESMPs in the planning phase and will be responsible for monitoring and implementing the ESMPs on the ground during implementation. With the cooperation of the technical departments and Bank safeguards support, ZINWA has the capacity to enforce the safeguards requirements for the project. Training on the Bank safeguards requirements and processes is ongoing and has been planned for not only the safeguards team, but all participating units.

World Bank Grievance Redress

99. 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 in order 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 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. Information on how to submit complaints to the Bank's Corporate GRS, is available at

www.worldbank.org/GRS. For information on how to submit complaints to the Bank Panel, available at www.inspectionpanel.org.

Annex 1: Results Framework and Monitoring

ZIMBABWE: National Water Project (P154861)

Project Development Objective (PDO): To improve access and efficiency in water services in selected growth centers and to strengthen planning and regulation for the water and sanitation sector.

PDO Level Results Indicators*	Core	Unit of Measure	Baseline	Cumulative Target Values				Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition and so on.)
				YR1	YR2	YR3	YR4				
Direct project beneficiaries	X	Number (thousand) (cumulative)	0	0	36	48	52	Annual	Progress reports from ZINWA	ZINWA	Direct beneficiaries are people or groups who directly derive benefits from an intervention (that is, families that have a new piped water connection).
Female beneficiaries (percentage of direct project beneficiaries)	X	%	n.a.	n.a.	50	50	50	Annual	Progress reports from ZINWA	ZINWA	Based on the assessment and definition of direct project beneficiaries, specify what percentage of the beneficiaries are female.
People provided with access to 'improved water sources' under the project	X	Number (thousand) (cumulative)	0	0	31	42	48	Annual	Progress reports from ZINWA	ZINWA	This indicator measures the actual number of people who benefited from improved water supply services that have been constructed under the project. Guidance on 'improved water sources': Improved water sources include piped household connections (house or yard connections), public standpipe, boreholes, protected dug well, protected spring and rainwater collection. Hence, 'improved water sources' do not
Urban				0	21	25	27				
Rural				0	10	17	21				

											include, among others, water provided through tanker trucks or vendors, unprotected wells, unprotected springs, surface water (river, pond, dam, lake, stream, irrigation channel), or bottled water. The definition of what is considered an 'improved water source' follows the UNICEF-WHO Joint Monitoring Program definition. Note that 'improved water sources' does not refer to the question of new versus rehabilitated water sources, but is the standard definition used to track progress on the Millennium Development Goals.
Improved collection rates for 7 ZINWA stations supported by the project		%	0	53	55	60	70	Annual	Progress reports from ZINWA	ZINWA	–
Reduced NRW in the 7 ZINWA stations supported by the project		%	0	40	35	30	25	Annual	Progress reports from ZINWA	ZINWA	–
National Water Resources Master Plan completed and endorsed (Yes/No)		Yes/No	No	No	No	Yes	Yes	Annual	Progress reports from ZINWA	ZINWA	–
Road map for establishing the WSS regulator endorsed (Yes/No)		Yes/No	No	No	No	Yes	Yes	Annual	Progress reports from ZINWA	ZINWA	–

INTERMEDIATE RESULTS											
Results Indicators	**Core**	**Unit of Measure**	**Baseline**	**Cumulative Target Values**				**Frequency**	**Data Source/ Methodology**	**Responsibility for Data Collection**	**Description (indicator definition and so on.)**
				YR1	**YR2**	**YR3**	**YR4**				
New piped household water connections resulting from the project intervention	X	Number	0	0	2,603	3,760	4,765	Annual	Progress reports from ZINWA	ZINWA	
Piped household water connections that are benefitting from rehabilitation works undertaken under the project	X	Number	0	0	6,391	7,050	7,774	Annual	Progress reports from ZINWA	ZINWA	
People trained to improve hygiene behavior or sanitation practices under the project (of which female)	X	Number	0	3,500 50%	7,000 50%	10,500 50%	14,000 50%	Annual	Progress reports from ZINWA	MRDPCH/ MLGPWNH	
Water Services Agreements signed and implemented between ZINWA and 7 LAs (Number)		Number	0	0	7	7	7		Progress reports from ZINWA	ZINWA/ MLGPWNH/MRDPCH	
Complaints addressed satisfactorily (Percentage)		%	0	60	70	80	90	Annual	Progress reports from ZINWA	ZINWA	
Sanitation plans prepared for Growth Centers (Number)		Number	0	0	0	7	7	Annual	Progress reports from ZINWA	ZINWA	

Note: Baseline data and targets for NRW is largely estimated since there are currently no functional meters.

Annex 2: Detailed Project Description

ZIMBABWE: National Water Project (P154861)

1. The PDO is to improve access and efficiency in water services in the selected growth centers and to strengthen the planning and regulation capacity for the water and sanitation sector. This will be achieved by strengthening the capacity of ZINWA, MEWC, MLGPWNH, MRDPCH, and the seven LAs in the project areas through investments in rehabilitation and expansion of water and sanitation infrastructure in seven growth centers and through TA to address key sectoral issues. The project is expected to directly benefit about 52,000 people living in seven growth centers. The project will have three components as detailed below. Component 1 supports investments in seven growth centers for rehabilitation and expansion of water and sanitation infrastructure; Component 2 supports TA in key sectoral issues; and Component 3 supports project management.

Component 1: Growth Center Water and Sanitation Improvements (US$14.04 million)

2. With funding from the A-MDTF, ZINWA undertook a needs assessment of 50 ZINWA stations across Zimbabwe's seven catchments. The assessment estimated that US$100 million is needed to restore water services in the 50 stations and address all immediate, medium-, and long-term investment needs. From the 50 stations, seven stations were selected as priority areas. As agreed between ZINWA and the Bank, the priority stations were selected on the basis of addressing underserved areas where mostly the poor live, including new communities (in need of expansion), or schools, clinics, and other public institutions in need of a reliable and safe supply of water. Some practical considerations were also taken into account: for instance, readiness of ZINWA designs. The geographical spread was incorporated by selecting one station in each of Zimbabwe's seven catchments. The selected priority stations are: (a) Guruve (Manyame), (b) Gutu (Runde), (c) Lupane (Gwayi), (d) Madziwa (Mazoe), (e) Mataga (Mzingwane), (f) Nembudziya (Sanyati), and (g) Zimunya (Save).

3. Component 1 will finance investments in WSS rehabilitation and upgrading in these seven growth centers. Detailed designs (including bills of quantities and tender documents) and preliminary Environmental Impact Assessments were completed for all seven growth centers in 2014 (with funding from the A-MDTF). ZINWA reviewed the scope and cost estimates of the proposed investments and updated designs and tender documents in May 2015. Investments include expanding and rehabilitating water treatment works, boreholes, transmission mains, storage and service reservoirs, distribution systems, connections, and meter installation and replacement. The works will also include minimal works to restore operation of the wastewater treatment systems in three project areas (Gutu, Guruve, and Zimunya). The investments are estimated at about US$14 million, broken down by growth center in table 2.1.

Table 2.1. Investments Broken Down by Growth Centers

Growth Center	Raw Water Source	Planned Investments	Cost Estimate[24]
Guruve	Dande Dam	• Replacement of two pump sets (111 m^3 per hour) for raw water abstraction • Raw and clear water pressure gauges • New filter media • Dosing pumps • Clear water pump sets (duty and standby) and MCC starters/breakers • New 150 mm gate valves installation • New backwash tank • Booster pump and standby • Facilitate formation of water committee • Supply 50 domestic and 10 commercial flow meters • Expansion of reticulation system to 700 stands • Give station a facelift and other safety-related work • Procure NRW detection equipment • Water quality equipment • Construction of 1000 m^3 reservoir • Further extension of reticulation lines	US$1,500,000
Gutu	Turamura and Woodland Dams	• Raw water pump sets and fittings • Raw water pumping main fittings • Clear water pump sets and fittings • Clear water pumping main and fittings • Facelifting of buildings • Civil work at the treatment plant • Storage reservoir fittings • Replacement of worn out pipes in reticulation • Replacement of nonfunctional domestic water meters • Extension of new reticulation Mpandawana Extension	US$950,000

[24] Inclusive of VAT, 20 percent Ps&Gs, and 10 percent contingencies.

Growth Center	Raw Water Source	Planned Investments	Cost Estimate[24]
Lupane	Groundwater and the new Bubi-Lipane Dam	• Rehabilitate existing seven boreholes and existing booster pump and procure standby unit • Repair leaking reservoirs (250 m^3, 500 m^3, and overhead reservoirs) • Install water level controls • Two pilot DMAs (bulk meter, pulse sensor, data logger, 3 x pressure gauges/pressure logger, meter box) • Equipment package for leak detection (pipe locator, box locator, ultrasonic clamp on meter, 2 x acoustic listening stick, basic leak noise correlator, ground microphone, noise logger (set of six), 10 x sampling customer meters • Valves and water meters • Motorbike and bicycles • Booster pump house at each reservoir site • Overhead tanks at each reservoir site • 3.5 km PVC raw water pipeline to Lupane State University • Pick-up wire and pump house • Reticulation distribution mains • Construction of 2280 m^3 RC reservoir; 1000 m^3 RC reservoir.	US$2,970,000
Madziwa	Mapfurundi River	• Construction of new intake works • Replace the existing 7 km raw water conveyance pipe • Construction of 1000 m^3 raw water storage • New 50 m^3 per hour conventional water treatment plant • Rehabilitation works will be done to the 500 m^3 clear water sump and the clear water pump house, pumping equipment and electrical installations • New clear water pumping main will be constructed at the primary school while rehabilitation work will be carried out for the existing reticulation system. • Reticulation network will also be extended and individual connections done • Installation of 2 x 23 m^3 elevated tanks and 2 x 207 elevated modular steel tanks, a 250 m^3 brick reservoir will be constructed to increase clear water storage; construction of operators staff houses	US$2,700,000

Growth Center	Raw Water Source	Planned Investments	Cost Estimate[24]
Mataga	Mundi Mataga Dam	• Construction of a new raw water abstraction system at Mundi Mataga Dam • Change the filter media and install a bulk meter on the treated water line and install meters for existing consumers • Procure leak detection equipment and water quality testing equipment and install dosing equipment • Complete the 100 m^3 per hour treatment plant that is currently at about 50%–60% level of completion including equipping both the raw and clear water pumping plants • Lay the raw and clear water mains to the reservoir, a total of about 1.5 km of piping will be laid for both the components • Provide new reticulation lines to service currently unserved areas and new built-up areas • Construct a new 500 m^3 reservoir.	US$1,580,000
Nembudziya	Groundwater	• Rehabilitation of existing three boreholes including replacement of pumps and pumping main • Rehabilitation of eight 18 m^3 elevated tanks • Rehabilitation of existing reticulation system • Replacement of nonfunctional meters • Installation of isolation valves • Installation of DMAs • Reticulation extension covering 500 new stands • Installation of a 500 m^3 modular tank • Drilling, equipping, and electrification of three boreholes that have already been sited and construction of the pumping mains linking them to the reservoirs • Construction of two operators' houses and electrification of the existing one • Construction of a 2000 m^3 concrete reservoir • Construction of booster station • Drill and equip three more boreholes • Construction of pumping mains from newly drilled boreholes • Supply water quality and leak detection equipment.	US$2,570,000

Growth Center	Raw Water Source	Planned Investments	Cost Estimate[24]
Zimunya	Zimunya Dam and River	• Rehabilitation of raw water abstraction/intake works • Pump house rehabilitation and installation of three raw water pump sets at 56 m^3 per hour and three clear water pump sets at 92 m^3 per hour • Water works rehabilitation and 100 m^3 per hour treatment plant and sump construction • Installation of dosing equipment and supply of water testing equipment • Replacement of clear water pumping main - 225 mm PVC • Booster station storage tanks repairs and installation of three pump sets at 92 m^3 per hour • Storage tanks repairs and fencing • Water distribution network rehabilitation and extension for 10 km • Sewer distribution network extension for 6 km and rehabilitation of ponds	US$1,770,000

Component 2: Technical Assistance (US$5.11 million)

4. TA will be provided to strengthen the capacity of the relevant national and local institutions to ensure sustainability of the investments and improve the overall planning, regulation, and reform of the sector in line with the National Water Policy and the Government's current thinking. There will be five subcomponents of TA.

5. **Subcomponent 2.1: National Water Resources Master Plan (US$3 million):** During the mid-1990s, the Government of Zimbabwe embarked on a water resources management reform. This reform was built on earlier reform initiatives that were started through the Integrated Rural Water Supply and Sanitation Program.

6. The Government has requested TA under the project to develop a National Water Resources Master Plan. The master plan will build on the Water Resources Management Strategy of the mid-1990s and the subsequent RSOPs[25] developed in the mid-2000s and gazetted by the Government. The RSOPs for each of the seven catchments aim to (a) consolidate hydrological information and potential yield data for each catchment and subcatchment system; (b) provide a summary of existing water resource potential (both surface and groundwater systems); (c) provide a mapping of known and potential dam sites for optimal utilization of the hydrological potential of the river systems; (d) project future water demands; (e) broadly outline plans to develop the water resources to meet the projected demands; (f) provide indicative sustainable allocations for the different competing demands; (g) prioritize essential water resources, reservoirs that require optimum preservation in the national interest; and (h) indicate areas and priorities for additional investigations to better understand and characterize the resources and demands.

7. Building on this, the National Water Resources Master Plan is expected to provide (a) a full analysis of the quantity, quality, and spatial distribution of the water resources available in Zimbabwe (surface water and groundwater, blue and grey water); (b) a detailed characterization of the current consumptive and non-consumptive uses of water resources and the associated spatial distribution of these demands; (c) a detailed characterization and demand by type of users (energy, domestic, recreational, environment, irrigation, industry, mining); (d) an assessment of the varying demands (across catchments, national, subnational, and transboundary); (e) projection of future demands, by geographical area and by type of user; (f) an assessment of in-stream environmental flows and other key environmental considerations in water resource management, including protected areas, priority aquatic habitats, environmental criteria for future site selection of water infrastructure, and management of headwater wetlands and other watershed catchments; (g) an assessment of the resilience of water resources to climatic variability and indicative adaptation measures to climate change; (h) an assessment of the gap between supply and demand and an update of previous supply assumptions using the latest climate change modelling data; (i) an institutional and investment needs assessment to bridge the supply-demand gap and restore resource balance to meet national development goals in the wake of climate change.

[25] Commonly called Catchment Outline Plans

8. The MEWC will set up a core task team to develop the ToR for the study and will, on behalf of the PSC, interact with the consultants in delivering the product. Consideration will be made to strengthen the Water Resources Subcommittee of the National Action Committee to facilitate wider consultation and oversight where necessary. This is expected to be a firm consultancy TA that will include professional fees, travel, workshops, consultations, and product dissemination.

9. **Subcomponent 2.2: TA for a Water Services Regulator (US$0.25million).** In 2013, the Government requested the WSP's support to review the coordination and regulatory mechanisms in the water sector. This work concluded recommending that an independent, free-standing Water Sector Regulator be established according to international best practice principles: (a) the authority's roles and objectives should be clearly defined in the act through which it is established; (b) the authority's independence or autonomy should be ensured through provisions on procedures for appointing and removing board members, clear rules on conflicts of interest, adequate funding, and autonomy to hire its own staff, establish its own procedures, and make its own decisions, (c) accountability, transparency, and participation should be cardinal principles of the authority; (d) the authority should strive to ensure predictability in all that it does, particularly in its decision-making. The study further recommended that the new regulator take on both water resource management and WSS regulatory functions, specifically:

(a) For urban WSS, which will be the sector making the biggest demands on the new regulator, the main regulatory functions should be the following:

    (i) Licensing—issuing licenses to urban water and sanitation service providers and monitoring compliance to license terms and conditions

    (ii) Tariff setting—developing and providing tariff calculation guidelines and approving tariff proposals from urban water and sanitation service providers

    (iii) Technical quality regulation—including performance monitoring and benchmarking

    (iv) Consumer protection—providing a forum for consumers to lodge complaints and also conduct awareness by organizing seminars for consumers.

(b) For WRM, certain regulatory functions currently performed by ZINWA will be transferred to the new water regulator, notably:

    (i) Tariff setting—setting and enforcing raw water pricing

    (ii) Dam safety regulation—maintaining and enforcing dam safety standards

    (iii) Registering drilling companies and dam designers—maintaining and updating the register of drilling companies and engineers authorized to design large dams

(c) For rural WSS, the water regulator should:

(i) Collect information on rural WASH and disseminate best practices within the sector.

(ii) Scrutinize and approve WSS technologies

(iii) Monitor the rural WASH program and publish benchmark reports on comparative performance of rural water and sanitation services. The publication of the achievements of some districts in, for example, attaining and maintaining open defecation free status and in attaining high levels of rural water point/pump functionality.

10. Following these recommendations and stakeholder workshops, the MEWC adopted the recommendations and drafted a Cabinet paper to seek Cabinet approval. The Government has decided to set up a WSS regulatory authority and approved a Cabinet Memorandum in April 2015 to set up a single sector regulator to cover both water resources regulation and water and sanitation services. The regulator's main purpose will be to balance the interest of the consumer—whose interest is best service at least cost—with that of providers who are generally in a monopoly position, but need to receive predictable periodic tariff adjustments that are cost reflective and sustainable along with adequate access to water resources. The regulator will ensure that the agreed rules are fairly implemented and that all people are provided with at least a basic service and at a minimum acceptable standard.

11. To steer the process forward, the Government has established an inter-ministerial committee chaired by the MEWC, and has asked the Bank for help through this project and through the WSP. A holistic support initiative to create the necessary capacity for the establishment of the regulator has been developed, understanding that the final process of getting the regulator on board is the Government's responsibility. The TA support will draw from global experiences on regulation and package these into essential background knowledge inputs for the Government's use.

12. The WSP TA will support background papers that will provide essential insights into areas such as (a) the type of regulatory institutional structure appropriate for Zimbabwe, (b) the most appropriate business model for financing the regulator, and (c) defining a roadmap for establishing the regulator,[26] including timeframes, the nature of stakeholder consultations, south-south learning exchanges, and estimates on the full cost of establishing the regulator. The TA under this project will support some of the key first-year investments for the established regulator and provide capacity support and training as appropriate. The Government will be responsible for drafting the legal instruments, based on the institutional structure and financing model proposed and pass the Parliamentary bill for the creation of a regulator.

13. **Subcomponent 2.3 TA to LAs (US$0.40 million)**. LAs are mandated to develop the areas under their jurisdiction. However, the effective execution of this mandate has been hampered by the economic challenges, poor revenue base, inadequate investments, low capacity, and the Central Government's financial transfers.

[26] The proposed roadmap will also clarify for the government the expected interface with the SLB currently being practiced by 32 municipal councils, and proposed to be extended to the seven growth centers covered under this project. A set of key performance indicators will be outlined for monitoring and agreed with utilities going forward.

14. **TA to formalize Water Service Agreements.** The National Water Policy (2013) provides for the separation of service authorities and service providers. ZINWA has, by default, become the service provider for most small towns and growth centers. However, no formal agreements have been made between ZINWA and the respective LAs and so no mechanism is in place to make the service provider accountable to the citizens.

15. Six of the proposed investments under this project are under the jurisdiction of RDCs. The seventh, Lupane, was recategorized as an Urban District Council in 2012. As the capacity of these councils is limited—most not having or being in a position to hire an engineer—MLGPWNH and MEWC confirmed that the councils will need to develop a Water Service Agreement with ZINWA to ensure the sustainability of the proposed investments. In line with the 2013 National Water Policy all of these LAs ('Water Service Authorities') will develop Water Service Agreements with ZINWA for the investment, operation, and maintenance of the water production operations. In some cases this Water Service Agreement will also cover sewerage. The project will assist LAs and ZINWA to pilot these agreements. WSP will further assist in joint monitoring of the Water Service Agreements in line with the performance indicators as set in the performance benchmarking process currently being practiced by the 32 ULAs. The seven LAs will participate in a peer review service level performance benchmarking process. The results of such performance benchmarking and monitoring will be confirmed and shared with citizens and will form part of the citizen engagement process.

16. **Sanitation promotion and hygiene**. Sanitation promotion and hygiene education are essential for ensuring that good sanitation conditions are maintained in the growth centers, and that renewed sanitation assets are not vandalized. Critical messages will be posted on billboards and may cover such issues as, where customer complaints should be channeled, citizen obligation to pay for services, asset protection, and the importance of a good sanitary environment. Such engagement with local communities strengthens citizen engagement. Experiences from Beitbridge indicate that solid waste removal and the visible signage on refuse collection trucks brought communities, services providers, and LAs closer together. The project will provide refuse bins and other equipment as necessary to promote cleaner environments in growth centers.

17. **Updating spatial plans for growth centers.** Migration to growth centers has put pressure on proper spatial planning for these areas. The proper provision of water and sanitation services requires that growth centers have proper indicative plans, on which basis demand can be forecasted.

18. Rural growth centers are growing quickly as is the demand for proper plans and services. In the absence of adequate capacity in the RDCs, the MLGPWNH has the responsibility—through the Department of Physical Planning—to produce development plans for the growth centers. However, the demand for housing has outstripped the Department of Physical Planning's capacity.

19. Spatial plans provide important information on where services are needed and on current and future customers. This information enables RDCs and ZINWA to account for possible revenues (from property tax and water sales and wastewater collection, respectively). Under this component, the project will support developing or updating spatial plans for the seven growth

centers and producing GIS referenced property stock. A consultant will be hired to undertake this task or, where possible, the Department of Physical Planning's capacity will be strengthened to provide this service. GIS referenced property stock will populate the ZINWA/RDC database, will enhance the Water Service Agreements and performance benchmarking outputs, and form a good operating platform for the future regulator.

20. **Subcomponent 2.4 Institutional Strengthening of ZINWA (US$1.25 million).** In 2014, at the request of ZINWA, the Bank financed a skills audit and strategic gap analysis to identify key areas to strengthen ZINWA. Three key areas were identified as priorities: (a) separating ZINWA's utility and water resources functions, as identified in the National Water Policy, (b) improving commercial orientation, and (c) improving customer focus and stakeholder management. The following three areas have been proposed for support under the project.

(a) **Improving the commercial and customer care orientation and functions of ZINWA.** ZINWA's financial records indicate it is making losses, driven mainly by high NRW and low revenue collection. ZINWA has no commercial department responsible for managing its day-to-day commercial functions like (a) customer care, (b) dedicated debt management, (c) connections, (d) metering, (e) NRW reduction, and (f) billing. ZINWA recently established a 'commercial unit', whose mandate is to explore new business opportunities for ZINWA. The project will assist ZINWA to design and setup an effective commercial services department. The department's main function will be revenue generation through connections, metering, billing, and revenue collection (including debt management). A consultant will assist ZINWA to develop its service and customer charters, set up a customer care unit, and propose a road map for a fully-fledged modern and responsive customer care unit. Improving customer care functions will improve ZINWA's image, lead to better complaint handling, and result in enhanced WTP by customers.

(b) **Citizen engagement** is necessary for long-term sustainability of services. The RDCs have a comparative advantage to ensure that citizens pay for services, practice good hygiene, do not vandalize assets, and agree—through political dialogue and performance service benchmarking—to acceptable service quality and tariffs. There is a realization that effective citizen engagement will lead to better service delivery and accountability. The Beitbridge Impact Assessment[27], for example, makes a number of general recommendations on how to maximize state building dividends in infrastructure projects, such as (a) identify and address inequalities that may be long-standing or that may have emerged during recent crises; (b) support LAs (in this case RDC/ULA and ZINWA) to clearly brand improvements in service delivery to ensure citizens recognize that it is the government institutions that are delivering results; and (c) collect base-line and end-line data on citizen attitudes and confidence in domestic institutions to assess whether the investment has changed citizens' perceptions. The Government is moving toward requesting state enterprises—including ZINWA—to provide people-centered services. It is also pressing for greater citizen engagement and accountability. The National Water Policy also states

[27] http://www.wsp.org/sites/wsp.org/files/publications/WSP-Beitbridge-Zimbabwe-WSS-Impact-Assessment-Report.pdf

customer and stakeholder involvement as a way of increasing accountability in the water sector. In recent months ZINWA has established water committees in areas where it supplies water including some of the project areas. The project will help ZINWA develop citizen engagement and communication strategy building on current initiatives. This activity will require close consultation and collaboration between ZINWA and LAs. The strategy should address gender and vulnerable groups (including those with HIV/AIDS). The TA will also propose possible institutional arrangements for citizen engagement. Activities included under citizen engagement, which will most likely fall under the commercial department, will also need to be complementary with the stakeholder consultation under the safeguards work.

(c) The Bank will assist the Government to develop a gender strategy for the project. It is suggested that the Government involve the Ministry of Gender in the appropriate way.

(d) **Promoting sanitation improvements in growth centers.** Provision of sanitation services has not been consistently assigned to any one institution in growth centers or small towns. In some growth centers, ZINWA is responsible (although it has not been able to fulfill this responsibility due to internal low capacity for sanitation within ZINWA), while in others LAs have taken on the responsibility in the absence of any viable alternatives. This has resulted in the deterioration of sanitation assets (such as the collapsed ponds in Guruve and the neglected pond system in Zimunya and Gutu). This trend is evident throughout Zimbabwe and there is a need to undertake an assessment of the existing situation and, where possible, make investments to halt further deterioration of assets. Solid waste management is the responsibility of LAs, but this service has also largely been neglected, with solid waste accumulating in market places and street corners, thus posing a health hazard.

(e) It is proposed that ZINWA develop a ToR for a sanitation needs assessment. Some investments will be channeled towards improving identified sanitation needs as appropriate. In three of the growth centers—Chegutu, Gutu, and Zimunya—existing waste stabilization ponds are currently under ZINWA's management. Options for community mobilization for sanitation will be identified and where necessary potential for improving community livelihoods through wastewater reuse (small irrigation, growth of duck weed, and so on) will be investigated.

21. **Subcomponent 2.5: Training (US$0.21 million).** The project will support a training plan developed by MEWC, together with ZINWA and other relevant agencies. The training plan has been approved and includes the training needs of all project implementing entities, such as MEWC, MLGPW, and LAs in the project areas, but focuses mainly on the operational training needs required by ZINWA to implement the project and ensure sustainability of the investments. There will also be on-the-job training through mentoring by consultants hired to support the PIU. The needs assessments have identified capacity gaps in the areas of utility management (commercial and customer care functions, NRW management), asset management, project management, procurement, safeguards, and M&E.

Component 3: Project Management (US$0.85 million)

22. ZINWA will set up a PIU to manage the project. The PIU will directly manage Component 1 and act as secretariat to the various lead ministries for subcomponent 2.1, 2.2, and 2.3. The PIU will be staffed with 5–7 staff, including a project manager, and will include competence in engineering, procurement, FM, safeguards, and M&E. The PIU may have secondees (focal point officers) from other entities participating in the project.

23. The project manager will be the focal point for the Bank and will also work closely with each PIT established in the catchments and the focal point officers from other implementing entities. The PIU will be responsible for (a) monitoring progress in each catchment, (b) all procurement, (c) overall coordination of project activities, (d) managing the project's special account and ensuring proper and timely project accounting and reporting of project expenditures, and (e) preparing consolidated progress reports.

24. The project manager will use quarterly reports from the PITs in the catchments to prepare a consolidated progress report. The report will cover (a) progress to date in project implementation, (b) challenges and proposed actions to address them, (c) status of the procurement process of goods and materials, (d) status of disbursement and projections, (e) the environmental and social safeguards, and (f) M&E. The PIU will submit the report to the Government and the Bank. The PIU will also coordinate the PSC meetings and prepare minutes of the PSC meetings.

Annex 3: Implementation Arrangements

ZIMBABWE: National Water Project (P154861)

Project Institutional and Implementation Arrangements

1. **There will be three legal agreements**: (a) the MoFED, representing the Government of the Republic of Zimbabwe, will sign a Grant Agreement for the ZIMREF Grant with the Bank, (b) a Subsidiary Agreement between the MoF and ZINWA through which funds and responsibility for project implementation will be passed on to ZINWA, and (c) a Project Agreement between ZINWA and the Bank which will define eligible activities and implementation modalities.

2. **The Government will establish the National Water PSC**—a high-level committee to oversee coordination and implementation of the project. It will be chaired by the MEWC and draw members from ZINWA and relevant ministries (senior officers, preferably directors). The PSC will report to the Government through the Minister of MEWC. The PSC will be responsible for resolving any problematic issues related to policy, inter-departmental communication, and coordination among entities.

3. **ZINWA will implement the project through a PIU**. The PIU will be directly responsible for activities under Component 1 and Component 3. Component 2 will be administered by the PIU, but different agencies will be responsible for the technical leadership of various subcomponents: 2.1, 2.2 and 2.5 by MEWC, 2.3 by MRDPCH and MLGPWNH, and 2.4 by ZINWA. The PIU will be staffed with 5–7 specialists, with competencies in engineering, procurement, FM, safeguards, and M&E. The team will be led by a project manager and the PIU may also have secondees (focal point officers) from other entities participating in the project. Except for disbursements using the direct payment method, all funds will flow through the Designated Account to be managed exclusively by ZINWA.

4. **The PIU will be responsible for project management, including monitoring the progress in each catchment and procurement.** The PIU will also be responsible for (a) overall coordination of project activities; (b) managing the project's special account and ensuring proper and timely project accounting and reporting of project expenditures; and (c) preparing consolidated progress reports. The project manager will be the focal point for the Bank and will work closely with focal point officers from participating entities, the PSC, and each PIT. The PIU will also serve as the PSC's secretariat and will coordinate and prepare minutes of the PSC meetings.

5. **PITs will be established at the catchment levels to implement subprojects and coordinate project activities.** The PITs will comprise an operations engineer, financial support staff, secondees from the LAs, and other staff as appropriate. The operations engineer will act as the PIT team leader (and resident engineer) and will report to the project manager and the catchment manager. The catchment manager will be responsible for overseeing progress on works in the catchment. The PIT will be responsible for day-to-day activities related to the project, including drawing/approving specifications of goods, works, and services in the catchment and preparing procurement requests to be forwarded to the PIU. The PIT will also be

responsible for supervising and certifying works, preparing payment certificates, receiving and verifying material specifications, and maintaining accurate project records (materials, work done, and labor and equipment returns). The PIT will also oversee the consultants working on activities in the catchments. It is expected to meet regularly and prepare progress reports covering progress to date, disbursement progress, update on procurement, safeguards compliance, M&E aspects, bottlenecks affecting progress and proposed measures to address them and plan of action for remaining works, and progress and disbursement projections.

Financial Management, Disbursements, and Procurement

Financial Management

6. In May 2015, the Bank team assessed the FM arrangements to determine whether controls were in place to ensure that (a) funds will be used for the intended purposes and in an economical and efficient way; (b) financial reports of the project will be prepared in an accurate, timely, and reliable manner; and (c) the project's assets will be safeguarded. The FM assessment was carried in accordance with the FM Manual issued by Operations Policy and Country Services on March 1, 2010.

7. The team noted that the budget preparation process follows the budget guidelines issued by the MoFED with additional guidance from the sector ministry. Inputs into the budget originate from the lower units and are informed by expected activities to be undertaken during the fiscal year. These inputs are consolidated at head office by the management accountant and the budget is reviewed by the management—Executive Committee—then the Finance Committee of the Board and then the full Board, before it is presented to the ministry for approval.

8. The FM system in ZINWA is managed by a team of competent staff led by the director of finance who is a professional accountant. The accounting and financial reporting is done using BIQ software. It was noted that there exist sufficient staff to ensure segregation of duties. For instance, the responsibility for the BIQ system administration is with the Information Technology Unit, hence separated from end users. Record keeping looks good but an asset management system needs to be put in place for protection of assets acquired by the project in particular and by extension, ZINWA.

9. There is an internal audit unit with seven staff members competent to handle all the internal audit requirements of the project. The internal audit report covered internal control weaknesses sufficiently but the report did not have responses from the auditees. It is recommended that the internal auditors ensure that responses from the auditees are captured in their reports.

10. A review of the 2012 and 2013 audited financial statements show a clean opinion from auditors. The 2014 audited financial statements were not ready at the time of the assessment but the team sighted a draft report also with a clean opinion. The audit reports, according to auditors are in line with International Financial Reporting Standards and also in compliance with section 82(3) of the Public FM Act 2009 which requires among others the need for the auditor to include

in the report, if he or she has not obtained all the information and explanations which to the best of his or her knowledge and belief were necessary for the purposes of the audit.

Financial Management and Fund Flow Arrangements for the Project

11. ZINWA will be responsible for the FM of the whole project and the accounting unit of each catchment office will be responsible for the FM for their catchment area. ZINWA will be required to open and manage a designated bank account for the project at a bank acceptable to the World Bank and the catchment offices will open project accounts, one for each catchment area.

12. When the grant becomes effective, authorized staff will on behalf of ZINWA submit withdrawal applications, either online or manually. Apart from the initial withdrawal application, subsequent withdrawal applications will be accompanied by Statements of Expenditure in a format to be provided by the Bank together with copies of supporting documents—invoices, delivery notes, and so on.

13. The disbursements for big procurements or high value contracts will be made by the Bank directly to the third party (supplier or service provider). For small value contracts and operating expenses, disbursements will be made by the Bank into the Designated Account based on cash requirement of the approved work plan for the year. The Bank will release money to the Designated Account initially to cover the first two quarters (maximum) and thereafter the releases may be done at least in each quarter or on need basis.

14. Four disbursement methods will be made available to the project. These methods are explained below:

(a) **Direct Payment Method.** The client submits contract, invoices, and other documents to confirm receipt of goods or services and payment is made directly to the supplier or service providers usually from US$100,000 and above but reduced to US$50,000 for this project.

(b) **Reimbursement Method.** If recipients use their funds on eligible project activities, they are reimbursed after verifying the contract, invoices, and other documents.

(c) **Advances Method.** Funds are given to the recipient usually on quarterly installments.

(d) **Commitment Method.** In this method**,** letters of credit are usually established.

15. ZINWA may release funds for operating expenses into project accounts for each of the catchment offices on monthly or quarterly basis depending on the work plan of the catchment areas.

Financial Reporting

16. The PIU of ZINWA will submit unaudited interim financial reports to the Bank not later than 45 calendar days after the end of each quarter, supported by bank statements. The FM team

from the Bank will conduct assessments and in-depth reviews into the FM system of the project at least every six months to ensure that there is compliance with the rules, regulations, and other internal controls. At the end of each financial year, ZINWA will prepare the annual financial statement using International Financial Reporting Standards.

Internal Audit

17. The internal audit unit of ZINWA will on a continuous basis audit the project to ensure compliance with rules, regulations, and other internal control measures. The quarterly internal audit reports on the project will be shared with the Bank.

External Auditing

18. When the project becomes effective, an auditing firm acceptable to the Bank will be appointed by ZINWA using the procurement procedures of the Bank. The project accounts and financial statements of the project shall be audited by the auditing firm using ToRs agreed with the Bank. The audited financial statement and the management letter shall be submitted to the Bank not later than six months after the end of each financial year.

Conclusion

19. The assessment concluded that, the proposed FM arrangements for the project will meet the Bank's minimum FM requirements under OP/BP 10.02 in ensuring accountability and transparency in administering the funds related to the project. The FM team from the Bank will continuously provide training and implementation support to the FM team of the project until such time that the capacity and experience with the PIU of ZINWA is deemed sufficient.

Procurement

Procuring Agencies and Scope of Procurement under the Project

20. Procurement under the project will be conducted by ZINWA for all beneficiary agencies under the project. A summary of the major procurements is indicated in table 3.1.

Table 3.1. Summary of Major Procurements

Component	**Agency Responsible for Procurement**	**Summary of Major Procurements Expected**
Component 1 – Growth Center Water and Sanitation Improvements	ZINWA	1. Works for rehabilitation and upgrading of water and sanitation treatment and distribution systems in seven growth centers 2. Consultants to supervise the works
Component 2 –Technical Assistance	ZINWA	1. TA to develop the National Water Resources Master Plan 2. TA to support establishment of an independent water sector regulator 3. Development of quality assurance system 4. TA to support LAs and ZINWA to formalize water service agreements 5. TA for institutional strengthening of ZINWA
Component 3 – Project	ZINWA	1. Individual consultants to support project

Component	Agency Responsible for Procurement	Summary of Major Procurements Expected
Management		implementation 2. Motor vehicles

Applicable Guidelines

21. Procurement under the project will follow the Guidelines: Procurement of Goods, Works, And Non-Consulting Services Under IBRD Loans And Ida Credits & Grants By World Bank Borrowers and Guidelines: Selection and Employment of Consultants Under IBRD Loans And Ida Credits & Grants by World Bank Borrowers dated January 2011 (revised July 2014).

22. All contracts will be subject to prior review for the first 12 months of implementation. After the first 12 months, this arrangement will be reviewed.

Use of National Procurement System

23. Procurement in Zimbabwe is covered by the Procurement Act of 1998 (amended in 1999 and 2002) and its Regulations of 2002 (amended in 2003). The Act establishes the State Procurement Board as a regulatory agency which also conducts procurement above a given threshold on behalf of procuring entities. The legal framework in the Act and regulations is based on competitive factors such as price and quality. This Act mainly establishes the composition and functions of the State Procurement Board, outlines general and financial provisions, provides guidance in the conduct of procurement proceedings, and sets out a procedure for appeals. The national procurement procedures and SBDs for procurement of goods and small works are not acceptable for use under Bank-financed projects. The legal framework in the Act and regulations is based on competitive factors such as price and quality, but National Competitive Bidding (NCB) procedures in the Act and regulations need to be revised substantially to be compliant with international practice. The Act and regulations leave a lot to interpretation in areas where it is not clear or specific in laying out the procedures. Additionally, there are no standard bidding documents. Therefore the national procurement system shall not apply under the project and procurement shall follow the Bank's guidelines. To complement the guidelines, the following will be established and shall be elaborated in the Project Implementation Manual (PIM):

(a) The CEO of ZINWA shall be the accounting officer.

(b) A procurement consultant shall be hired under the project to conduct procurement and support strengthening ZINWA's institutional capacity in procurement.

(c) A procurement committee is already established in ZINWA but its responsibility shall be revised to focus on oversight with its role limited to considering and approving (i) the procurement plan, (ii) solicitation documents prior to their issuance, and (iii) evaluation reports and award of contract. The committee or its members shall not participate in bid evaluation.

(d) Evaluation committees shall be established on an ad hoc basis to evaluate bids.

(e) Procurement complaints shall in the first instance be submitted to the accounting officer. Where the complainant is dissatisfied with the response, they may appeal to the State Procurement Board

(f) The State Procurement Board shall not be involved in conducting procurement under the project but may play its monitoring and capacity building function.

24. **Procedure for Shopping.** Shopping shall follow the Request for Quotation procedures with quotations sought from at least three bidders. A Request for Quotations Document shall be developed for use and included in the PIM.

25. Advance Contracting and Retroactive Financing shall apply to this project and ZINWA has already initiated some of the procurements. To be eligible for financing, the procurements shall follow the grant agreement and the procurement plan.

Table 3.2. Procurement Thresholds to be Applied in the Procurement Plan

Expenditure Category	Contract Value Threshold (US$)	Procurement Method	Contracts Subject to Prior Review
1. Works	5,000,000 and above Below 5,000,000 Below 100,000	ICB NCB[28] Shopping	All contracts All contracts All contracts
2. Goods and Non-consulting Services	500,000 and above Below 500,000 Below 50,000	ICB NCB Shopping	All contracts All contracts All contracts
3. Consulting Services[29] and Training	With firms above 300,000 With individuals above 100,000 With firms up to 300,000 With individuals up to 100,000	QCBS Individual Qualifications/Other Individual	All contracts All contracts All contracts All contracts
4. All types of contracts	All contracts	Sole source/direct contracting and ToRs	All contracts

Note: ICB = International Competitive Bidding
QCBS = Quality- and Cost-Based Selection

[28] National Competitive Bidding in this context refers to advertising in the newspapers of wide national circulation without needing to advertise on the United Nations Development Bank.
[29] A shortlist of consultants for services estimated to cost less than US$300,000 equivalent per contract may consist entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

Procurement Arrangements, Risks, and Mitigation Measures

26. **Works for refurbishment and expansion of water schemes.** This shall be the main procurement under the project. The works have been packaged into two procurement packages—the first with four lots and the second with three—with each lot representing a town. Bidders will have an opportunity to bid for one or more lots depending on their capability and also allowing the Government to benefit from opportunities of scale with one contractor potentially working on multiple lots. The designs were prepared within the last year and have been updated by ZINWA. This packaging shall however be confirmed upon clarification on the phasing of funds from the Country Management Unit.

27. There are sufficient contractors within the region to generate sufficient competition even though there have not been many recent large contracts for water rehabilitation in Zimbabwe. The contract will therefore be subject to international competition and it is expected that additional contractors from within the region shall apply. An assessment is currently ongoing as to whether ZINWA has sufficient in-house capacity to supervise the works or whether external supervision shall be required and what the scope of this shall include.

28. **Responsibility for Procurement**. Procurement is to be conducted by ZINWA for itself and on behalf of other agencies. The respective agencies shall participate by preparing ToRs or specifications, participating in evaluation, and supervising the consultants and suppliers for those procurements that are intended to benefit the respective agencies. Within ZINWA, procurement shall be done by the by the Procurement Unit. The unit's capacity shall be strengthened with additional staffing and consultant report as well is upgraded as per the strengthening plan below.

Procurement Plan

29. ZINWA has prepared a procurement plan which has been reviewed and agreed to by the Bank. The plan will however be revised to reflect the phasing of funds availability. The contracts subject to international competition are specified in table 3.3 and table 3.4.

Table 3.3. Good and Works

		Description	Estimated Cost (US$)	Procurement Method	Prequalification (yes/no)	Review by Bank	Expected bid opening date	Expected contract completion
ZINWA/G001	1	Supply and delivery of computer accessories: 5 laptops, 1x 4 in. 1 heavy duty printer, 7 small printers and 1 x plotter, 2 x digital cameras	30,000	Shopping	No	Prior	5 February 2016	19 April 2016
ZINWA/G002	1	Office equipment: 3 executive desks and chairs, 6 visitors' chairs 1 refrigerator, 1 coffee making machine and 2 filing cabinets, 1 x round table.	25,000	Shopping	No	Prior	3 February 2016	17 April 2016

ZINWA/G003	1	Supply and delivery of 8 x single cab vehicles, 2 x double cab vehicles , and 1 x sedan vehicle.	440,000	NCB	No	Prior	8 October 2015 (actual)	25 March 2016
ZINWA/G004	1	Supply and delivery of 7 motor bikes.	21,000	Shopping	No	Prior	4 February 2016	27 June 2016
ZINWA/G005	1	Supply and delivery of 21 bicycles.	3,780	Shopping	No	Prior	3 February 2016	26 June 2016
ZINWA/G006	1	Supply and delivery of laboratory equipment.	175,000	ICB[30]	No	Prior	18 March 2016	6 January 2017
ZINWA/G007		Audit Software Consultancy	60,000	Shopping	No	Prior	19 February 2016	11 September 2016
ZINWA/G008		BIQ Software Consultancy	50,000	Direct Contracting	No	Prior	7 February 2016	30 August 2016
ZINWA/W001	1	Rehabilitation and expansion of water supply systems in Lot 1: Madziwa TC, Lot 2: Guruve, , Lot 5: Lupane, Lot 4: Zimunya	8,949,150	ICB	No	Prior	16 March 2016	25 November 2018
ZINWA/W002		Rehabilitation and expansion of water supply systems in, Lot 6: Mataga, Lot 3: Gutu , Lot 7: Nembudziya	5,095,008	ICB	No	Prior	1 June 2016	10 February 2019

Table 3.4.Consultants

Ref. No.	Description of Assignment	Estimated Cost (US$)	Selection Method	Review by Bank	Expected Proposals Submission Date	Expected Contract Completion
MEWC/C001	Consultancy for the preparation of water resources master plan	3,000,000	QCBS	Prior	21 September 2016	14 November 2018
MEWC/C002	Consultancy to support the Government to establish a water services regulator	250,000	CQS	Prior	05 March 2016	16 November 2017
MoLG/C001	Consultant for support to ZINWA and LAs to formulate water services agreements.	150,000	ICS	Prior	05 March 2016	25 November 2016
ZINWA/C001	Consultancy for sanitation needs assessment in the 7 project areas	250,000.00	CQS	Prior	5 March 2016	16 November 2016
ZINWA/C002	Consultancy for the design and setting up of a commercial services department including customer care and organizational culture	300,000.00	QCBS	Prior	10 March 2016	7 February 2017

[30] Request for Proposals to have advertised in the UNDB and local and international newspapers.

ZINWA/C003	Consultancy for baseline survey in water access	150,000.00	CQS	Prior	29 March 2016	19 December 2018
ZINWA/C004	Procurement Consultant/Specialist	80,000.00	ICS	Prior	19 November 2015 (actual)	30 July 2017
ZINWA/C005	Contract Management Consultant/Specialist	90,000.00	ICS	Prior	14 April 2016	13 April 2018

Note: CQS = Consultant's Qualifications

30. **Procurement Risks and Mitigation Measures.** An assessment of the procurement capacity of the MoFED was conducted in June 2015. The assessment reviewed the legal framework, the institutional arrangements, the staffing for procurement, the quality of record keeping, and the actual procurement practice. The risk to procurement was rated as High. Table 3.5 shows the key risks and mitigation measures:

Table 3.5. Key Risks and Mitigation Measures

Risk	Remedial Action	Timeframe	Responsibility
Conflict of Interest caused by the involvement of State Procurement Board in the procurement process.	Use Bank guidelines for procurement of goods and works. Procurement Committee to be responsible for award of contract without reverting to SPB	Throughout implementation	ZINWA
Disincentive to competition due to lack of system to quickly resolve complaints as the system relies on Administrative Courts making the process lengthy	Project implementation to provide for complaints handling system with first recourse to ZINWA and then SPB	Prior to effectiveness	ZINWA
Insufficient bidder response due to incomplete bidding document arising from Lack of standard bidding documents	Use Bank standard bidding document for procurement of goods and works.	Throughout implementation	ZINWA
Institutional arrangements inadequate in ensuring good procurement outcomes	Strengthened institutional arrangements to be used for the project and documented in the PIM including (a) role of procurement committee in approving contracts and (b) establishment of ad hoc evaluation committees	First year of implementation	ZINWA
Poor quality procurement and outcomes due to limited procurement and contract administration capacity of agency	Hire or designate procurement staff within ZINWA with appropriate qualifications and experience Establish procurements at an appropriate seniority level within the organization structure Hire a procurement consultant conversant with Bank procurement guidelines to mentor hired/designated procurement	Before effectiveness	ZINWA

Risk	Remedial Action	Timeframe	Responsibility
	staff		
Lack of procurement planning	Establish system for procurement planning within ZINWA Staff to be trained on procurement planning Prepare procurement plan for the project	Prior to procurement Complete.	ZINWA World Bank ZINWA

Frequency of Procurement Supervision

31. In addition to the prior review supervision to be carried out from the Bank offices, the capacity assessment of the implementing agency recommends six monthly supervision missions to visit the field, including at least one mission to carry out a post review of procurement actions.

Environmental and Social (including safeguards)

32. ZINWA formulated seven ESMPs internally to enhance project ownership and capacity utilization of its staff. The implementation of the ESMPs will be done by ZINWA in some instances and by the respective contractors in others. In each of the seven catchment areas, ZINWA has experienced water quality staff who will act as the core of the catchment safeguards staff and will be supported by the head office-based safeguards coordinator who is located within the PMU.

33. Where ZINWA implements directly, the activities are provided for in the PMU costs. Where contractors implement projects, the contractors are expected to include the cost of these activities. ZINWA will carry out internal monitoring through catchment-based safeguards staff and the head office-based coordinator who will undertake inspections of contractors' work areas. The respective regulatory authorities will conduct external monitoring through statutory inspections on the project areas. The statutory inspections will include environmental and social impacts by the EMA, occupational safety and health impacts by the National Social Security Authority, and public health impacts by the Ministry of Health and Child Welfare. The respective LAs will augment EMA statutory inspections through their environmental health and social welfare departments. Stakeholder consultation and citizen engagement will be done by ZINWA with the support of the LAs and any local community-based organizations applicable. ZINWA's safeguards staff will ensure that the statutory inspections are conducted through liaison with the respective regulatory authorities.

Monitoring & Evaluation

34. ZINWA will conduct overall monitoring and coordination of project activities in accordance with the indicators included in the results framework, including the monitoring of compliance with safeguard policies. ZINWA will submit semiannual reports to the Bank covering all activities, including a procurement and financial report. Quarterly financial reports will also be provided to the Bank no later than 45 days after the end of each quarter. The biannual reviews, the first one to take place six months after effectiveness, will provide a detailed analysis of implementation progress toward achievement of the PDO.

35. ZINWA will, no later than two years after the effectiveness date (or such other date as agreed with the Bank), carry out a midterm review of the project and prepare and furnish to the Bank a midterm report documenting progress achieved in the project's implementation during the period preceding the date of the report, taking into account M&E activities performed and setting out the measures recommended to ensure the continued efficient implementation of the project and the achievement of its objectives for the remainder of the project's life. ZINWA will review this midterm report with the Bank, at or about one month after its submission.

Annex 4: Implementation Support Plan

ZIMBABWE: National Water Project (P154861)

Strategy and Approach for Implementation Support

1. The strategy for implementation support has been developed based on the nature of the project and its risk profile. The aim is to make implementation support to the client more flexible and efficient by focusing on implementing the risk mitigation measures defined in the SORT.

Implementation Support Plan

2. The Bank task team leader will provide ongoing support by coordinating with the client and among Bank staff who will provide implementation support on technical, fiduciary (FM and procurement), and safeguards aspects. Implementation will be supported by task team members in the Bank's Washington, DC offices as well as selected field offices (such as Harare, Lusaka, and Nairobi). This will ensure that field missions, should the need arise, can be organized quickly and that international expertise can also be mobilized to provide global best practices. Formal missions and formal briefings to the relevant ZIMREF technical working group will be carried out at least twice per year, and ZIMREF donors may participate in implementation support missions.

3. In conjunction with Government counterparts, the Bank will monitor progress against the monitoring indicators in the results framework. The Bank will also monitor risks and update the risk assessment and risk management measures, as needed. A midterm review will involve a more in-depth stocktaking of performance under the project. Based on the assessment of progress at the midpoint, Government counterparts, the Bank and the ZIMREF policy oversight committee will consider recommendations for improvements or changes.

4. The Bank team will maintain close coordination with ZIMREF and other development partners operating in the water and sanitation sector. Table 4.1 summarizes the annual expected supervision needs. Year 1 will require a higher level of input to support the project in getting started. Missions will be scheduled as needed.

Table 4.1. Implementation Support Main Focus and Skills

Skills Needed	Resource Estimate (Staff weeks Per Year)	
Task team leader	10	Based in HQ
Procurement specialist	6	Based in regional office
FM specialist	6	Based in regional office
Engineer	12	Based in country office
Economist/financial analyst	3	Based in regional office
Institutional specialist	12	Based in regional office
Local social and environmental specialist	8	Based in country office
International social and environmental specialist	6	Based in HQ
Administrative and client support	12	Based in country office

Annex 5: Detailed Project Costs

ZIMBABWE: National Water Project (P154861)

Table 5.1. Detailed Cost Breakdown

Project Components		**US$, millions**
Component 1: Growth Center Water and Sanitation Improvements		**14.04**
Guruve	1.50	–
Gutu	0.95	–
Lupane	2.95	–
Madziwa	2.70	–
Mataga	1.57	–
Nembudziya	2.58	–
Zimunya	1.79	–
Component 2: Technical Assistance		**5.11**
Subcomponent 2.1 National Water Resources Master Plan	3.00	–
Subcomponent 2.2 TA for a Water Services Regulator	0.25	–
Subcomponent 2.3 TA to LAs	0.40	–
2.3.1 Consultants for support to ZINWA and LAs to formulate Water Service Agreements	0.15	–
2.3.2 Consultancy for sanitation needs assessments in the seven project areas	0.25	–
Subcomponent 2.4 Institutional Strengthening of ZINWA	1.25	–
2.4.1 Consultancy for the design and setting up of a commercial services department	0.30	–
2.4.2 Consultancy for baseline survey	0.15	–
2.4.3 BIQ software consultancy	0.05	–
2.4.3 Goods and equipment	0.75	–
Subcomponent 2.5 Training	0.21	–
2.5.1 Training for ZINWA	*0.18*	–
2.5.2 Training for MEWC	*0.01*	–
2.5.3 Training for local government	*0.01*	–
2.5.4 Training for Ministry of Agriculture	*0.01*	–
		–
Component 3: Project Management		**0.85**
Subcomponent 3.1 Incremental project costs	0.65	–
Subcomponent 3.2 PIU consultants	0.20	–
		–
Total Financing Required		**20.0**

Annex 6: Financial and Economic Analysis

ZIMBABWE: National Water Project (P154861)

1. The Bank adds value through bringing the expertise developed under the A-MDTF, and through its convening power of the donors involved in ZIMREF. The Bank's value-add is further bolstered by the project's focus on institutional reform and strengthening of ZINWA, in particular to begin the process of transforming ZINWA into a commercial utility. Given the project's focus on rehabilitating and expanding the water schemes in growth centers—those areas most affected by the economic crisis—it will address various redistributional and social issues, justifying public sector financing.

2. The historical funding structure (1980–2000) for water and sanitation services in urban areas and growth centers in Zimbabwe was that the Central Government funded investment for capital works, major repairs, and rehabilitation through the Public Sector Investment Plan while service providers, mainly the LAs and ZINWA in a few areas, funded recurrent costs from tariff. The economy of many small towns and rural growth centers during this period was driven by agriculture and agriculture-related industries. Unlike many countries in the Africa region, the strong agricultural economic base and the tariff structure enabled these service providers to meet the costs of routine O&M particularly chemicals, energy, minor repairs, as well as salaries for staff.

3. During the economic crisis (2000–2008), poor performance of the agricultural sector—including agro-processing—resulted in high unemployment in many small towns, disposable incomes dropped, as did the ability to pay for basic services, including water. As a result, service providers struggled to operate and maintain infrastructure. At the same time, the Central Government revenue effort declined drastically, in real terms, leaving it unable to meet its capital financing obligations to the LAs under the PSIP. In addition, arrears with multilateral funding institutions accumulated and capital financing from these institutions was suspended.

4. Over this same period, the economic crisis led to a population increase in many small towns and rural growth centers. Though it is not possible to disaggregate small towns and rural growth centers,[31] urban growth over this period has been much stronger in the predominantly rural provinces (26 percent) compared to the population growth of urban Bulawayo (-3 percent) and Harare (7 percent).[32] Infrastructure in small towns and growth centers that was built for much smaller populations must now also accommodate people who have migrated into these emerging areas.

5. This combination of the erosion of tariff revenues and capital investment along with small town growth has severely caused a setback to water and sanitation service provision. Zimbabwe is faced with declining access rates in urban areas and small towns and a growing maintenance and rehabilitation backlog.

[31] These settlements span part of the 'urban council area' and 'growth points' as defined by the 2002 and 2012 housing and population census.

[32] In addition to designated urban areas, places which had all the following characteristics were also defined as urban areas: having 2,500 inhabitants or more; a compact settlement pattern with the majority (more than 50 percent) of the employed persons engaged in nonagricultural occupations.

6. Yet the principles of cost recovery are well entrenched and there has been a rebound in tariff revenues since 2008 with the adoption of a multicurrency system. The problem though is that in response to the economic crisis, the tariff structure has undergone multiple ad hoc changes often resulting in a mismatch between tariff revenue and expenditure assignments. These ad hoc changes have also been a coping strategy in the face of no or limited capital investment. Bringing revenues back in line with expenditure assignments will require careful review of the tariff structure, a key role of the proposed economic regulator.

7. As preparatory work for the Zimbabwe National Water Project, which aims to address the needs of small towns and growth centers, a series of analytical reports were commissioned including two that are pertinent to economic and financial analysis:

(a) An economic development survey in 14 small towns and growth centers to determine the constraints to economic growth and how water can be integrated into the overall development process.

(b) An institutional and financial assessment to identify the reforms needed to restore functionality and improve sustainability of ZINWA and its constituent raw water and clear water businesses.

8. These two studies—along with data from the 2012 Housing and Population Census and the 2011/12 Poverty Income Consumption and Expenditure Survey (PICES)—are the main sources for the financial and economic analysis carried out for the appraisal of the Zimbabwe National Water Project.

Economic Analysis

9. The 1998 Water Act established the river catchment basin as the basis for managing water resources. Accordingly, the country was divided into seven catchment areas, managed by seven Catchment Councils and 47 Subcatchment Councils. The demarcation lines of the catchments follow the river systems of Manyame, Mazowe, Save, Runde, Mzingwane, Gwayi, and Sanyati rivers.

10. ZINWA's current strategic business units) are based on these seven catchments. In each catchment, ZINWA's business is split into its raw water business (managing dams and water abstractions) and its clear water business of operating and maintaining 534 water supply stations. These 534 water supply stations serve a range of domestic, institutional, and industrial customers living in small towns and rural growth centers.

11. Based on a broader scoping study of ZINWA's 534 water supply stations, 50 with potential for expansion were selected for an engineering assessment. Among these 50, 14 were selected for an economic development survey. The economic development survey carried out in 2014 selected two towns from each of the seven catchments where ZINWA was the clear water provider.

12. The survey classified towns according to the main service functions that the town performed (see figure 6.1). All the towns had growing populations and water supply was identified as a constraint to growth in the development of house stands and operations of

business and service industries. Potential economic uses of water in each town reflected an expansion and intensification of existing livelihood patterns:

(a) **Agriculture.** Small-scale agro-processing and value addition (brewery, dairy, and leather).

(b) **Mining.** Develop and support informal and artisanal mining, mine processing and value-addition nearer to source, and potential for coal exploitation in some towns.

(c) **Administration.** Attract more public services (such as education and hospitals) and attract logistics industries, thus becoming transport hubs.

(d) **Commuter.** Sale of stands and location of industry as land is cheaper than in nearby cities.

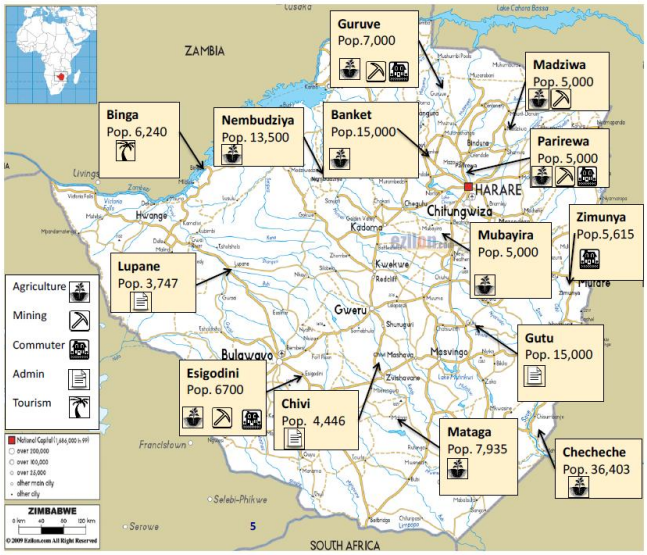
(e) **Tourism.** Attract more tourists, improve lodging, sell local products to tourists, and sell fish to the wider market.

13. The seven small towns and growth centers with the greatest potential for economic growth were selected as the focus of the Zimbabwe National Water Project. Across all seven towns, a combination of population growth and a lapse in the practice of developing serviced stands led to houses without water supply connections. This is due to long-term deferred maintenance of systems during the economic crisis and a lack of financing for servicing new stands.

14. In commuter towns, fully serviced houses are important to growth as residential real estate is the major economic activity. As noted by one respondent, "Lack of adequate, safe water is impeding growth. Since Zimunya is largely a town accommodating employees that work in Mutare, fully serviced houses will see a rise in migration." In non-commuter towns, poorly serviced housing means that higher-level executives and Government officials choose to live in provincial capitals. This results in slower turnaround times, inefficiency, and wastage.

15. Businesses and service industries need water to function. In administrative centers, there is a rapid growth of restaurants, hotels, and bakeries. However, among the many constraints to growth in these towns and a general lack of finance, inadequate water is deterring investors because there is an increase in the cost of doing business. The survey highlighted that adequate water is an important element to the development of growth points seeking to attain town status. At the same time, there are multiple binding constraints to growth

Figure 6.1. Small Towns and Their Main Service Functions



in these towns, so it does not necessarily follow that improving water delivery alone will lead to growth.

16. A brief overview of the main characteristics of these towns and their economic potential and key water supply interventions are set out in table 6.1.

Table 6.1. Main Characteristics, Economic Potential, and Key Water Supply Interventions of the Seven Selected Small Towns and Growth Centers

Town (population)	Main Economic Activities	Economic Potential and Key Interventions
Lupane (3,747)	Timber processing Construction Retail University campus	Lupane has the potential for large-scale timber processing, brick moulding, and the expansion of cement industries. The presence of methane gas could jumpstart development. The University of Bulawayo is planning to set up a satellite campus in Lupane which would increase the population by up to 10,000 people. Inadequate water has affected irrigation schemes that surround the town, mainly Makhovula and Jotsholo, communities that supply Lupane with agricultural products and provide a source of employment. Water pump houses and purification works that are under construction are developing at an extremely slow pace in comparison to the needs of the community. Power cuts affect water supply as the pumps are electric-powered. Lupane relies on borehole water and only four out of ten boreholes are functioning. Assistance to complete the entire water supply system which consists of a 240 m^3 treatment plant is required.
Gutu (15,000)	Retail and Light industry	There is also potential to develop industries such as milling, metal fabrication, and cooking oil manufacture and for the development of residential and commercial real estate. Gutu's water supply is currently dependent on one pump. If there's a breakdown, the whole town suffers. Water infrastructure reservoirs are not big enough to sustain the growing population.
Nembudzia (13,500)	Agriculture (cotton, small grains and maize) Retail	There is potential for dairy, brewery, and leather industries and for milling companies to add value to locally produced grain. Mining could also jumpstart Nembudzia's development. Electricity supply affects water distribution. Inadequate water has resulted in skilled manpower moving to more developed towns. Lack of water has hampered growth of industries and resulted in the deterioration of Nembudziya's health facilities. ZINWA supplies the water, the local council distributes it, and the District Development Fund provides the funds for borehole drilling. Standard accommodation for ZINWA workers is necessary to attract skilled personnel such as electricians and engineers.
Zimunya (5,615)	Residential real estate and Retail	Zimunya is within the Beira corridor. The infrastructure for industrial growth already exists but is currently derelict. Economic growth in Zimunya means that house stands are being developed without water services. Due to the topography, Zimunya relies on a double-pumping system which increases the costs of production. ZINWA is unable to maintain services properly. Agriculture is a challenge in Zimunya as it is one of the driest areas in Zimbabwe. Adequate water is necessary for irrigation schemes. Water is also essential to run industries and Zimunya's sewer system.
Matanga (7,935)	Agriculture and Retail	There is potential to mine chrome and revive coal mining. Irrigation development of the Monte Mataga dam could elevate the growth point to town status.

Town (population)	Main Economic Activities	Economic Potential and Key Interventions
		There is no access to water from Monte Mataga so the Mataga relies on water from Matanga which is inadequate for the growing population—98% of the population does not have access to ZINWA water. Residents walk long distances to fetch water, impacting health and productivity. The reservoir and ZINWA machinery that connects the township to Monte Mataga is still under construction. Financial assistance is needed for the completion of a treatment plant that is still under construction.
Guruve (7,000)	Agriculture Mining (gold)	Despite low rainfall, Guruve has great agricultural potential due to its fertile soil. There is also a potential to exploit valuable minerals such as nickel, tungsten, and uranium which could elevate the growth point to town status. Due to the economic downturn, grants/loans from the Public Sector Investment Program and the Infrastructural and Development Bank of Zimbabwe stopped flowing to Guruve. The RDC is also suffering from a shrinking revenue base (decreased by 40%) due to nonpayment of rates. Better access to potable water will accelerate stand construction, encouraging employees who work in Bindura to live in Guruve. Population growth along with the subsequent establishment of supporting services will assist Guruve in attaining town status.
Madziwa (5,000)	Agriculture Mining (gold) Retail Teacher training college	Madziwa has land that can be developed for agricultural, residential, and industrial purposes. The village presently relies on infrastructure left behind by the now-closed Bindura Nickel Mine. Residential areas are expanding rapidly, yet the water source and infrastructure remain the same. The teacher training college is an important anchor customer serving around 800 people which could be expanded to over 2,500 people if more water was available. The additional water will also benefit the local primary school. Investment in water pumping infrastructure to draw water from a downstream source is needed.

Economic Viability of Selected Growth Centers

17. The subprojects for six of the seven growth centers were analyzed to assess their economic viability.[33] The cost benefit for the subprojects shows that all projects are economically justified. The range of economic benefits expected from the proposed subprojects for both households and businesses were examined.

18. For households, the main benefits were the following:

(a) **Time saved mostly for women.** In some towns, women spend up to 4–6 hours per day collecting water from currently distant water sources.

(b) **Reduced health risks.** In many towns, people could use flush toilets instead of going to the bushes for defecation. This will lower the risk of groundwater contamination through defecation.

[33] The information needed for the economic and financial analysis for Gutu is not yet available. The investments in Gutu will be carried out during the second phase of the project. Ahead of these investments, ZINWA has committed to provide the Bank with the data needed for the economic analysis.

(c) **Speed up construction work.** Construction of houses in many new developments will be faster once water for buildings no longer has to be collected from remote sources.

(d) **Increased food security through gardening.** Most interviewed women said that they would use water for gardening to save money and increase food security.

19. For businesses, the main benefits were from employment creation and income increases associated with higher levels of output requiring water as an input (for example, food-processing industries).

20. Economic benefits were measured as customers' WTP in addition to any positive impacts that would not be captured in a WTP assessment. The WTP is a lower-bound estimate of economic benefits. To estimate households' WTP in the six priority towns, two different WTP methods were used:

- **WTP household survey.** The WTP was assessed based on a household survey across the seven towns. The survey asked households what they would be willing to pay for a connection that delivered water for at least four hours per day. Respondents were prompted with a declining scale of possible amounts for this connection starting with US$50 and reducing in amounts of US$10 to US$20 per month as well as an 'other' amount category for those who were not prepared to pay even US$20 per month. The household surveys revealed that households' WTP for connected water was about US$20 per month. This is higher than the water bill of US$18 for the monthly average consumption of 14 m^3. However, in several high-density neighborhoods, the WTP is only US$15 per month. This is more than the water bill of US$8.30 for a minimal consumption of 6.5 m^3 per month, but lower than the water bill of US$18 for the average consumption of 14 m^3 per month.

- **Meta-analysis of existing WTP studies.** The WTP was also estimated based on a regression equation drawn from a meta-analysis of more than 20 studies estimating household WTP for various improvements in water services in low-income countries using the contingent valuation method.[34] The main variables considered in the regression included the size of the town, the average monthly household income, and the average household size. The regression considers a dummy variable for Africa.

21. Both methods led to similar results of a WTP of US$20 per household per month. To obtain the total economic benefits of a subproject per year, households' WTP per month was multiplied by the total number of households with a functioning connection.

22. Economic benefits from people that would benefit from connected businesses or institutions such as schools or universities were then added to this. For example, the WTP also did not capture the economic value of training urgently needed teachers for the country (in Madziwa) or increasing the number of students at universities (in Lupane). It also does not

[34] Ukoli-Onodipe 2003

reflect the positive impact of Lupane assuming its role as the new provincial capital of Matabeleland North Province. However, these would certainly be benefits of the subprojects. In these cases the number of students that would benefit from a functioning connection was multiplied by US$5 per beneficiary per month.

23. Finally, the WTP results were triangulated against standard economic benefits reported for water supply projects. Households' WTP methods, while measuring inconvenience well, tend to underestimate the standard benefits associated with improved access to water supply (Whittington et al 2008).[35] Standard economic benefits include time savings, reduced health risks, faster construction work, and increased food security. In the case of these six towns, the economic benefits of time savings would however have great returns compared with the WTP results.

24. However, it is the economic returns for the WTP results that is presented for the six towns in table 6.2. Based on this, all six projects except the Madziwa Teachers College improvement had a positive NPV for economic benefits. Using a 10 percent discount rate, all IRRs for both priority investments (all >8 percent) and for their full coverage variants (all >11 percent) were positive. For the Madziwa Project, it is argued that the WTP estimates understate total benefits, since the main benefit of the project is to allow a teachers college to operate at full capacity, rather than one-third capacity as now. Taking this into account, the Madziwa investment would have a positive net economic benefit.

25. In all but one of the water stations, there is existing latent demand that the investments will supply, giving a high level of certainty that the projected revenues will be realized (contingent on improved billing to collection ratios).

[35] Whittington, Dale, W. Michael Hanemann, Claudia Sadoff, and Marc Jeuland. 2009. "The Challenge of Improving Water and Sanitation Services in Less Developed Countries." *Foundations and Trends® in Microeconomics* 4 (6–7): 469–609.

Table 6.2. Economic Viability of Six Subprojects

Town	Priority Sub-Projects		Full Coverage Variant		Unquantified benefits
	Econ. NPV	Econ. IRR	Econ. NPV	Econ. IRR	
	US$'000	*%*	*US$'000*	*%*	
Guruve	437	26	603	26	
Lupane	3,245	27	2,756	22	
Madziwa TC	-164	8	141	11	
Mataga	286	14	288	14	
Nembudziya	1,502	35	1,240	22	
Zimunya	635	25	56	11	

Note: The red square indicates towns where people would move from currently drinking contaminated water to drinking safe water (most urgent need).

The yellow triangle indicates towns where the sub-projects would have a significant economic impact through ensuring functional administrative infrastructure.

The green dot indicates towns where the sub-projects would have a significant economic impact through ensuring education.

Affordability of Water Services for the Poor

26. In addition to analyzing the economic viability of the project, a simple analysis of affordability of ZINWA's water services is presented for households below two poverty lines defined for Zimbabwe in the 2011/12 PICES. The PICES defines two poverty lines: a lower and a higher one. The lower poverty line, the Food Poverty Line (FPL), represents a minimum needs basket of food items equivalent to 2,100 calories per person per day. People living below this poverty line are categorized as extremely poor. The rural average was calculated as US$33.2 per person per month. The upper poverty line, the Total Consumption Poverty Line (TCPL) includes nonfood minimum need requirements such as housing, clothing, transportation, health care, and so on. The rural average was calculated as US$63.30 per person per month.

27. Table 6.4 presents the rates for both these poverty lines by district along with rates of access to improved water supply, access to piped water, and access to improved sanitation. Together these figures provide an insight into both the opportunity of supplying a greater number of people with modern piped water supplies and the possible affordability constraints faced by households.

28. The extremely low levels of access to piped water supply in these districts—ranging from none in Lupane to 10 percent in Shamva district—suggest that at least in the more densely populated growth centers there is an opportunity for ZINWA to expand its services by providing a more convenient alternative to fetching water from a protected borehole or spring. However, the targeted districts have high rates of poverty—ranging from 65 percent in Gutu district to over 86 percent in Lupane district. Rates of extreme poverty range from 12 percent in Makoni district to over 37 percent in Lupane district. These extremely high rates of poverty are likely to be even higher in the communal and resettlement lands of these districts and slightly lower in the targeted growth centers.

Table 6.3. ZINWA Tariff Structure

29. With ZINWA's current tariff structure, the US$8 cost per month of a household connection supplying 20 liters per person per day would be eating into the minimum needs food budget of households at or below the FPL (meaning that they would have to substitute water for food or at least compromise the balanced basket of foods provided for under the FPL). The US$8 a month for water services would also be over the widely accepted 5 percent threshold of household income (World Bank 2010).

	Residential Customers			Commercial Customers		
	Amount	Price ($/m³)		Amount	Price ($/m³)	
Tariff Blocks		High density	Low density		High density	Low density
Fixed charge		7.00	7.00		30.00	40.00
1	1-10	0.40	0.80	1-25	1.04	1.12
2	11-20	0.96	0.96	26-50	1.12	1.21
3	21-30	1.04	1.04	50-100	1.21	1.29
4	31-40	1.12	1.12	>100	1.29	1.37
5	41-50	1.21	1.21			
6	>50	1.29	1.29			

Source: ZINWA

30. For households at or below the TCPL, the US$8 a month for water services would be equivalent to 3 percent of household income. With likely reductions in health expenditure and opportunities for increased productivity due to time saved collecting water, expanding services to households in this category appears both affordable and a desirable proposition confirmed by the results of the WTP data.

31. There are two caveats to this analysis. First, as US$7 of the US$8 are a flat rate charge levied per connection, affordability for the poor and extreme poor can be improved by allowing a number of households to connect to one connection (for example, households living in a common compound). And conversely, smaller households—for example of older people—above the TCPL poverty line may find that ZINWA's charges are higher than 5 percent of income.

32. In summary, while the poverty data are districtwide rather than for the specifically targeted growth centers, this poverty analysis indicates that ZINWA's water services would not be affordable to the extreme poor without a review of the tariff structure or a specific policy of allowing more than one household in poorer areas to connect through a communal compound connection.

Table 6.4. Poverty Rates, Access to Improved Water Supply, Piped Water, and Improved Sanitation for Selected Districts

Growth Center	Province	District	Poor HH (below TCPL)	Extreme Poor HH (below FPL)	Access to improved water	Access to piped water	Access to improved sanitation
Lupane	Matabeleland North	Lupane	*86.4*	*37.1*	*63.7*	*0.0*	*17.0*
Gutu	Masvingo	Gutu	65.6	13.7	*47.6*	*2.2*	35.4
Nembudzia	Midlands	Gokwe North	73.3	18.3	65.6	*5.4*	59.9
Zimunya	Manicaland	Mutare Rural	*79.4*	*23.2*	70.5	*4.8*	*28.4*
Matanga	Manicaland	Makoni	66.1	12.1	70.0	*1.9*	46.1
Guruve	Mashonaland Central	Guruve	*81.9*	*27.2*	76.9	*1.2*	*31.8*
Madziwa	Mashonaland Central	Shamva	75.4	20.9	77.7	*9.2*	*25.0*
Communal Lands			*86.8*	*33.6*	65.2	*3.8*	*31.9*
Resettlement Areas			*83.6*	*25.9*	*57.3*	*5.7*	*28.4*
Small-scale Commercial Farms			72.6	17.4	63.5	19.6	53.3
Large-scale Commercial Farms			66.9	16.2	71.9	46.9	49.0
Zimbabwe Rural			**76.0**	**22.9**	**65.2**	**10.2**	**34.3**
Zimbabwe Urban			38.2	4.0	97.8	82.8	95.1

Source: PICES 2011/12
Note: Figures in *red italics* indicate poverty rates higher and access lower than the rural average for Zimbabwe
TCPL - US$63.3 per person per month for rural areas
FPL - US$33.2 per person per month for rural areas

Financial Analysis

33. The financial viability of this project relies on (a) the financial viability of ZINWA as the utility managing the water stations as well as (b) the scheme-level economic and financial viability. These two possible points of failure are discussed in turn.

34. Though ZINWA reported a loss of US$32 million in 2013, a critical analysis of ZINWA's financial statements reveals the following more nuanced picture of its performance:

(a) The 2013 loss was due to a Government directive to a one-time write-off for the arrears for domestic customers (US$32.8million).[36]

(b) Operating profit in 2013 before depreciation, amortization, and the debt write-off was positive (US$9.3 million).

(c) Much of the remaining debt is with Government institutions (US$16 million), irrigators (US$30 million), the LAs (US$20 million), parastatals and other corporate consumers (US$12.5 million), and at least partially recoverable through direct negotiation with customers and off-setting with tax and other liabilities due to the Government.

(d) There is a critical cash flow problem as cash receipts were US$33 million and cash payments US$47 million.

35. While a repeat of the debt write-off directive is a real risk to ZINWA's viability, there is potential to sustainably grow the core raw and clear water businesses which generated revenues of over US$57 million in 2013.

36. In the short term, ZINWA urgently needs to address its negative operating cash flows. To do this, ZINWA will need to improve the billings to collection ratio both for domestic and other categories of consumers. Action on this can partly be addressed by (a) replacing nonfunctional meters (estimated as 50 percent of existing meters), (b) streamlining the existing cumbersome meter reading and billing process with device-assisted meter reading, and (c) adopting the mobile payment module available for their billing system (BIQ) that is currently being tested by the Bulawayo Municipal Council. These are investments that should be included in the institutional development component of the project and that will play an important role in stabilizing ZINWA's cash flow and keeping it operating as a going concern.

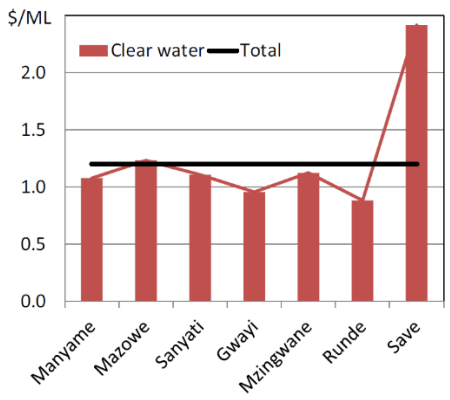
37. In addition, there are a number of ways that ZINWA can begin to tactically improve its cash flow.

(a) **Broaden customer base to reduce dependence on supplying clear water to Government institutions.** In 2013 the billing to collection ratio from Government institutions was 50 percent compared to 80 percent from residential, business, and other customers. In the past, ZINWA has traded receivables from Government institutions with payables to Government institutions (social security, value-added tax, and Zimbabwe Electricity Supply Authority). However, as receivables from Government exceed payables to Government—as in 2013—it would be prudent to invest in extending connections to residential, business, and other customers.

[36] While the arrears from customers' unpaid bills accumulated on ZINWA's balance sheet as a potentially recoverable asset, these were posted as a loss at the point at which the Government declared an amnesty on all unpaid bills. The rationale for this was that the originally potentially recoverable asset was deemed unrecoverable by ZINWA and its auditors.

(b) **Disaggregating costs between services (raw water supplies, clear water supplies) and regulatory and catchment management services—ZINWA requires more refined information on costs and revenues to set tariffs.** Estimating the revenue requirement by service (raw and clear waters) is essential for setting prices that recover costs, and the relevant transfer price between ZINWA's clear and raw water services. There are material cost differences between the estimated average cost of supply of both raw and clear waters in the seven catchments. Better data on costs disaggregated between services, at catchment and station levels will allow ZINWA to more accurately calculate the revenue requirement for each service as a whole and for each service by catchment.

Figure 6.2. Estimated Average Cost of Water by Catchment



(c) **Consolidate tariff blocks for clear water.** At its next reset for clear water tariffs, ZINWA should consolidate the tariff blocks for clear water from six to three for residential customers and from four to one for commercial customers as well as implement capacity-based fixed charges for commercial users. These changes will improve administrative efficiency and make it easier for customers to understand the tariff structure. The fixed charge will remain the same for residential customers, but will vary with capacity for commercial customers.

38. Financial models were built for the six subprojects to analyze two questions. First, whether or not the subprojects would be financially sustainable, meaning that revenue will exceed O&M costs. Second, the financial models analyzed whether or not the subprojects would be financially viable, meaning that the subprojects would generate a reasonable rate of return to investors estimated at the prevailing cost of capital (20 percent).

39. Demand forecasts were developed for each subproject. The water production required to meet this demand was estimated. The required water production informed investment plans. Expected revenue was derived from expected demand, expected O&M costs from required water production, and required capital expenditure from investment estimates generated by ZINWA. Net cash flows for each year were calculated over a planning horizon of 20 years. Finally, the IRR and the NPV of each of the subprojects was calculated.

40. Based on this method, the financial analysis of the six subprojects showed that they would be financially sustainable. This means that the expected revenue from the subprojects would exceed the expected variable costs, which are the O&M costs. The subprojects are thus expected to generate cash from operations. This should ensure that the service operator, whether ZINWA or a private company, will continue to service customers in the future.

Table 6.4. Financial Sustainability of Six Sub-Project

Town	Total revenue	Total collections	Total O&M	Operating Free Cash	Operating Free Cash Margin
	US$ million	*US$ million*	*US$ million*	*US$ million*	*%*
Guruve	13.1	7.7	(6.5)	1.3	10
Lupane	11.4	9.1	(7.8)	1.3	11
Madziwa TC	2.0	1.8	(1.7)	0.1	5
Mataga	7.9	6.4	(4.6)	1.8	23
Nembudziya	7.4	5.8	(3.6)	2.2	30
Zimunya	7.5	6.4	(2.4)	4.0	53

41. The financial returns on investment are positive for 4 out of the 6 projects analyzed, and for these projects, they vary from 2 percent to 18 percent. However, none of them exceed the figure of 20 percent which is estimated to be the commercial cost of capital. Therefore 'viability gap funding' in the form of grant financing or output-based aid would be needed to make the sub-projects financially viable for private companies.

Table 6 5. Summary of Financial Analysis

Town	Priority Sub-Projects		Full Coverage Variant	
	Fin. NPV	Fin. IRR	Fin. NPV	Fin. IRR
	US$'000	*%*	*US$'000*	*%*
Guruve	-208	9	-240	10
Lupane	-1,692	-7	-2,222	-7
Madziwa TC	-1,135	-17	-1,111	-3
Mataga	-676	2	-642	3
Nembudziya	-91	18	-453	12
Zimunya	-71	17	-398	10

42. Collection rates was one of the most sensitive variables in the financial model. A slight change in the collection rate can have a significant impact on the financial performance of the subproject. Therefore, the following aspects were considered when modelling expected collections:

- **In the last five years, collection rates differed widely between customer categories.** On average, collection rates from commercial customers were the highest, and above 90 percent. Collection rates from residential customers were between 60 and 70 percent. Collection rates from the Government vary strongly from year to year. In the past two years, they were as low as 30 percent in some of the priority towns. Collection rates were therefore differentiated for different categories of customers.

- **On average, billed revenue should not be higher than the WTP.** Otherwise, the collection rate from residential customers will be low because people are not willing to pay the billed amount. In the model, the collection rate for residential sales was in

line with households' WTP. This ensures that realistic collection rates were used from residential sales.

Annex 7: Maps

ZIMBABWE: National Water Project (P154861)

Map of Zimbabwe