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R2019-0226/2

October 9, 2019

Closing Date: Thursday, October 10, 2019 at 6:00 p.m.

FROM: Vice President and Corporate Secretary

Eswatini – Eswatini Water Supply and Sanitation Access Project

Project Appraisal Document

Corrigendum

1. Attached is the revised Project Appraisal Document regarding a proposed loan to Eswatini for an Eswatini Water Supply and Sanitation Access Project (R2019-0226/1), which is being processed on an absence-of-objection basis. Page 17, paragraph 41 of the document was revised to correct the reference to Taiwan, China.

2. A fully revised document has been published in BOS.

3. Questions on this document should be referred to Ms. Lizmara Kirchner (ext. 31325) or Ms. Ruth Jane Kennedy-Walker (ext. 38564).

Distribution:
Executive Directors and Alternates
President
Bank Group Senior Management
Vice Presidents, Bank, IFC and MIGA
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Report No: PAD3286

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF

US$45 MILLION

TO THE

KINGDOM OF ESWATINI

FOR THE

ESWATINI WATER SUPPLY AND SANITATION ACCESS PROJECT

September 19, 2019

Water Global Practice
Africa Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective August 31, 2019)

Currency Unit = Emalangeni (E)

E 15.23 = US$1

FISCAL YEAR
April 1 – March 31

ABBREVIATIONS AND ACRONYMS

CERC	Contingency Emergency Response Component
CPF	Country Partnership Framework
CPS	Country Partnership Strategy
DA	Designated Account
DSCR	Debt Service Coverage Ratio
DWA	Department for Water Affairs
EHD	Environmental Health Department
EIRR	Economic Internal Rate of Return
ESCP	Environmental and Social Commitment Plan
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
EWSC	Eswatini Water Services Corporation
FY	Fiscal Year
GBV	Gender-based violence
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GoKE	Government of the Kingdom of Eswatini
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
HCI	Human Capital Index
IBRD	International Bank for Reconstruction and Development
IFR	Interim Unaudited Financial Report
IPF	Investment Project Financing
KPI	Key Performance Indicator
LMP	Labor Management Procedures
M&E	Monitoring and Evaluation
MHM	Menstrual Hygiene Management
MICS	Multiple Indicator Cluster Survey
MoF	Ministry of Finance
MoH	Ministry of Health
MoU	Memorandum of Understanding
MNRE	Ministry of Natural Resources and Energy
NDMA	National Disaster Management Agency

NDS	National Development Strategy
NGO	Nongovernmental Organization
NPV	Net Present Value
PAP	Project Affected People
PDO	Project Development Objective
PIU	Project Implementation Unit
POM	Project Operations Manual
PPSD	Project Procurement Strategy for Development
PRAMS	Procurement Risk Assessment and Management System
RPF	Resettlement Policy Framework
RWS	Rural Water Supply
SACU	Southern African Customs Union
SEA	Sexual Exploitation and Abuse
SEP	Stakeholder Engagement Plan
STEP	Systematic Tracking of Exchanges in Procurement
UNICEF	United Nations Children's Fund
WASH	Water Supply, Sanitation, and Hygiene

Regional Vice President: Hafez M. H. Ghanem
Country Director: Paul Noumba Um
Regional Director: Ede Jorge Ijjasz-Vasquez
Global Practice Director: Jennifer J. Sara
Practice Manager: Catherine Signe Tovey
Task Team Leaders: Lizmara Kirchner, Ruth Jane Kennedy-Walker

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DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
Eswatini	Kingdom of Eswatini: Water Supply and Sanitation Access Project	
Project ID	**Financing Instrument**	**Environmental and Social Risk Classification**
P166697	Investment Project Financing	Moderate

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach (MPA)	[✓] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Disbursement-linked Indicators (DLIs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made Disaster
[ ] Alternate Procurement Arrangements (APA)	

Expected Approval Date	Expected Closing Date
10-Oct-2019	30-Sep-2025

Bank/IFC Collaboration

No

Proposed Development Objective(s)

To increase access to improved water supply and sanitation services in targeted areas of Eswatini.

Components

Component Name	Cost (US$, millions)

Component 1: Resilient Water Access and Management	28.00
Component 2: Improved Sanitation Access	15.00
Component 3: Project Management	1.89
Component 4: Contingency Emergency Response Component (CERC)	0.00

Organizations

Borrower:	Ministry of Finance
Implementing Agency:	Eswatini Water Services Corporation

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	45.00
Total Financing	45.00
of which IBRD/IDA	45.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	45.00

Expected Disbursements (in US$, Millions)

WB Fiscal Year	2020	2021	2022	2023	2024	2025	2026
Annual	0.11	2.70	10.00	10.00	10.00	7.00	5.19
Cumulative	0.11	2.81	12.81	22.81	32.81	39.81	45.00

INSTITUTIONAL DATA

Practice Area (Lead) **Contributing Practice Areas**

Water	Urban, Resilience and Land

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

Gender Tag

Does the project plan to undertake any of the following?	
a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF	Yes
b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment	Yes
c. Include Indicators in results framework to monitor outcomes from actions identified in (b)	Yes

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

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

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any waivers of Bank policies?

[ ] Yes [✓] No

Environmental and Social Standards Relevance Given its Context at the Time of Appraisal

E & S Standards	Relevance
Assessment and Management of Environmental and Social Risks and Impacts	Relevant
Stakeholder Engagement and Information Disclosure	Relevant
Labor and Working Conditions	Relevant
Resource Efficiency and Pollution Prevention and Management	Relevant
Community Health and Safety	Relevant
Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Currently Relevant
Cultural Heritage	Not Currently Relevant
Financial Intermediaries	Not Currently Relevant

NOTE: For further information regarding the World Bank's due diligence assessment of the Project's potential environmental and social risks and impacts, please refer to the Project's Appraisal Environmental and Social Review Summary (ESRS).

Legal Covenants

Sections and Description

Loan Agreement
Section I.A of Schedule 2 – By no later than one (1) month after the Effective Date, the Borrower shall establish and thereafter maintain, at all times during the implementation of the Project, a Project Steering Committee, with a mandate, terms of reference, composition, and resources satisfactory to the Bank.

Sections and Description
Loan Agreement
Section I.B of Schedule 2 – To facilitate the carrying out of the Project, the Borrower shall make the proceeds of the Loan available to the Project Implementing Entity under a subsidiary agreement between the Borrower and the Project Implementing Entity, under terms and conditions approved by the Bank.

Sections and Description
Loan Agreement
Section I.C.1 of Schedule 2 – The Borrower shall: (a) maintain throughout the implementation of the Project, a Project Operations Manual in a manner satisfactory to the Bank; (b) cause the Project Implementing Entity to maintain throughout the implementation of the Project, the Project Operations Manual in a manner satisfactory to the Bank.

Sections and Description
Loan Agreement
Section I.D.1 of Schedule 2 – The Borrower shall, and shall cause the Project Implementing Entity to, ensure that the Project is carried out in accordance with the Environmental and Social Standards, in a manner acceptable to the Bank.

Sections and Description
Project Agreement
Section I.A.1 of Schedule – The Project Implementing Entity shall maintain at all times during the implementation of the Project, a Project Implementation Unit, with a mandate, terms of reference, composition and resources satisfactory to the Bank, to be responsible for the overall implementation and coordination of activities.

Sections and Description
Project Agreement
Section I.C.1 of Schedule – The Project Implementing Entity shall ensure that the Project is carried out in accordance with the Environmental and Social Standards, in a manner acceptable to the Bank.

Sections and Description
Project Agreement
Section I.C.2 of Schedule – The Project Implementing Entity shall ensure that the Project is implemented in accordance with the Environmental and Social Commitment Plan (“ESCP”), in a manner acceptable to the Bank.

Conditions

Type	Description
Effectiveness	Section 5.02 of Article V of the Loan Agreement – The Additional Condition of Effectiveness consist of the following: the Subsidiary Agreement has been executed by the Borrower and the Project Implementing Entity, in accordance with Section I.B of Schedule 2 to this Agreement.
Type	Description
Disbursement	Section III.B.1(b) of Schedule 2 to the Loan Agreement – No withdrawal shall be made for Emergency Expenditures under Category 2, unless and until the Bank is satisfied, and notified the Borrower of its satisfaction, that all CERC conditions have been met.

I. STRATEGIC CONTEXT

A. Country Context

1. The Kingdom of Eswatini is a landlocked, small open economy in Southern Africa, with a land area of 17,364 km^2 and a population of 1.34 million.[1] The King, as the Head of State, holds supreme executive, legislative, and judicial powers. Eswatini has been independent since 1968. The country defines itself as a 'monarchial democracy', where both parliamentary and traditional systems of governance run concurrently. The Prime Minister, appointed by the King, is the Head of Government and chairs the Cabinet. The King also appoints 10 of the 76 members of the House of Assembly (the lower house of Parliament) and 20 of the 31 members of the Senate (the upper house of Parliament). The country has four administrative regions: Hhohho (25.3 percent of population), Manzini (39.4 percent of population), Shiselweni (15.1 percent of population), and Lubombo (20.3 percent of population).[2]

2. Eswatini is largely mountainous with 78 percent of the population living in rural areas,[3] and an overall population growth rate of 1.8 percent.[1] With a gross domestic product (GDP) per capita of US$2,776, the country is classified as a lower-middle-income country. Eswatini relies on South Africa for about 85 percent of imports and about 60 percent of exports. The economy is largely driven by agriculture-based exports and this sector employs over 70 percent of the population.[4] Sugar is the largest single earner of foreign exchange, contributing up to 20 percent of GDP in 2017. Despite the large agrarian population, much of the farming is subsistence based and results in low productivity. Agriculture (without the sugar industry) contributed 7.3 percent to GDP in 2016 and the Government of the Kingdom of Eswatini (GoKE) seeks to boost the sector through commercialization and intensification of agriculture.[5]

3. Eswatini is a member of the Southern African Customs Union (SACU) which includes Botswana, Lesotho, Namibia, and South Africa. The SACU members share a common external tariff policy, exchange freely their goods internally, and distribute among themselves the pool of customs and excise taxes collected by the union. For 2018/19, the SACU receipts accounted for 34 percent of the country's total revenue and grants compared to 43 percent in the previous period as growth in South Africa, the main contributor to the SACU revenue pool, remains moderate, while domestic spending pressures are rising.[6]

4. In 2018, the budget deficit was estimated at 5.7 percent of GDP, up from 4.8 in 2017, because of an 18 percent year-on-year decline in the SACU receipts. Suspension of most capital projects, a civil service wage freeze in 2018, and other fiscal consolidation measures introduced on November 22, 2018 did not lead to a fiscal deficit reduction and is estimated to have limited economic growth to an average of 0.5 percent in 2018 down from 1.9 percent in 2017. The Government continued to accumulate domestic arrears and partly financed the fiscal deficit through running down of international reserves. Consequently, the gross official reserves dropped to the lowest level in five years, reaching 2.9 months of import cover in December 2018 (below the three-month international benchmark). The current account surplus narrowed, driven by higher import growth that resulted in a trade deficit

[1] World Development Indicators Country Profile, 2016.
[2] Multiple Indicator Cluster Survey (MICS), Central Statistics Office, 2014.
[3] United Nations Population Division, 2014/15.
[4] United States Department of Agriculture (Swaziland agricultural economic fact sheet).
[5] Food and Agriculture Organization (of the United Nations) (Swaziland Agricultural Development Project, SADP).
[6] International Monetary Fund: Country Report No. 17/274.

in 2018. Public debt increased by over 3 percent (year-on-year) reaching 23.8 percent of GDP in December 2018. At this pace of increase, public debt may breach the Government's medium-term threshold of 35 percent of GDP by 2021. In the absence of stronger efforts at fiscal consolidation and structural reforms, economic growth will likely be constrained in the medium-term.

5. Poverty, inequality, and unemployment remain the most stubborn primary development challenges for Eswatini, and overcoming these is a government priority. Poverty levels have remained unchanged over the last five years, with approximately 40 percent of the population estimated to be living under the international US$1.90 poverty line. Furthermore, an estimated 60 percent of the population is poor. Income inequality is high, with an estimated Gini coefficient of 0.51 in 2009/10, which may have worsened due to the absence of pro-poor growth to date. Female unemployment is at 24 percent and male unemployment at 21 percent of the population.[7] Development outcomes are hindered by the high HIV prevalence rate estimated at 27.2 percent (female: 32.5 percent and male: 20.4 percent). Consequently, life expectancy fell to 46 years in 2004 but has since rebounded and in 2017 reached 60 years. Eswatini scored 0.41 on the Human Capital Index (HCI), ranking 124 out of 157 countries.[8] The HCI measures the amount of human capital that a child born today can expect to attain by age 18. It conveys the productivity of the next generation of workers compared to a benchmark of complete education and full health.

6. Eswatini's development challenges are exacerbated by its vulnerability to external and climate-related shocks, including floods, droughts, and wild fires which negatively affects health, food security, and productive economic activity while disproportionately affecting the rural poor. Mitigation and adaptation measures are important given the strong role of the agriculture sector and the large share of the population in rural areas relying on subsistence agriculture.

7. The current average rainfall in Eswatini is 780 mm per year, with 75 percent of rainfall currently falling from October to March. While future precipitation estimates are uncertain (some models show overall average increases and others show decreases), more erratic rainfall patterns are highly likely, resulting in more frequent urban and river flooding. There is a clear upward trend anticipated in temperature across all climate models. The increase is expected to be up to 1.5°C by 2040, and with this, the projected annual likelihood of severe drought (by 2050) compared to the reference period (1986–2005) is expected to increase by up to 20 percent.[9]

8. Analysis indicates that the increase in droughts could affect annual GDP by up to 5.8 percent, with over 6.5 percent of the population being affected each year (with agriculture losses increasing by a factor of four and with other negative impacts in the hydropower sector).[10] Heat stress and wildfire hazards are also expected to increase, with a greater than 50 percent chance of the country experiencing weather that could support a significant wildfire that would result in both life and property loss in any given year in Eswatini.[11]

[7] World Bank. 2019. *The Little Data Book on Gender.* https://openknowledge.worldbank.org/bitstream/handle/10986/31689/LDB-Gender-2019.pdf?sequence=2&isAllowed=y
[8] https://databank.worldbank.org/data/download/hci/HCI_2pager_SWZ.pdf
[9] World Bank's Climate Change Knowledge Portal. http://sdwebx.worldbank.org/climateportal/index.cfm?page=country_historical_climate&ThisRegion=Africa&ThisCCode=SWZ.
[10] CIMA (Centro Internazionale in Monitoraggio Ambientale) Research Foundation, United Nations Office for Disaster Risk Reduction. Eswatini Disaster Risk Profile, 2018.
[11] ThinkHazard! http://thinkhazard.org/en/report/235-swaziland.

B. Sectoral and Institutional Context

9. Responsibility for management of the water supply and sanitation sector lies with several entities within the GoKE. The Ministry of Natural Resources and Energy (MNRE) is responsible for sustainable water management and sustainable provision of water services in Eswatini. The Department for Water Affairs (DWA) within the MNRE is tasked with management and oversight of water resources and rural water services provision, including regulation.

10. The Eswatini Water Services Corporation (EWSC) is a public enterprise, wholly owned by the GoKE operating under the MNRE, with the mandate to provide water supply as well as wastewater and fecal sludge treatment and disposal services in the country's urban centers. The EWSC also controls the abstraction of raw water from boreholes in those areas for which it is responsible.

11. The rural water supply (RWS) unit in the DWA is mandated to expand access to RWS. It relies on a community-based management model and uses a typical project cycle with community mobilization and sensitization stages as well as construction and training. The RWS unit employs a five-stage approach to working with communities, which includes the formation of water supply committees responsible to administer, operate, and maintain the newly built water supply schemes. Although there is no budgetary allocation for the rehabilitation of water supply systems, the RWS unit of the DWA sometimes provides support to communities whose RWS schemes need rehabilitation by facilitating access to grants from nongovernmental organizations (NGOs) or international organizations.

12. At the operational level, the RWS unit closely coordinates with the Environmental Health Department (EHD) within the Ministry of Health (MoH), responsible for coordination of the overall sanitation and hygiene sector in rural and peri-urban areas, around the construction of latrines in the same communities where the RWS unit is implementing water systems and hygiene awareness programs.[12] The EHD also cooperates with the Ministry of Education and Training to provide improved sanitation and hygiene services in schools. EHD activities comprise support for construction of pit latrines in rural areas, where it provides materials and technical support for construction of facilities. Behavior change and education on the proper use of drinking water and sanitation facilities are also done through the EHD.

13. The water sector is one of Eswatini's most valuable assets, central to the country's long-term development goals and critical for mitigating against increasing climate risks. Eswatini's surface water resources are estimated at 4.5 km^3 per year with 42 percent originating from South Africa. The country relies on transboundary rivers and groundwater for its water supply, and the ratio of total annual water withdrawals to total available annual renewable supply averages is between 40 percent and 80 percent,[13] making it a country of high water stress.

14. Although universal access to safe water and sanitation is part of Eswatini's National Development Strategy (NDS, 2016), the country remains behind its established goal of achieving 100 percent water supply and sanitation coverage by 2022. While access to water supply and sanitation services is relatively high in urban areas, the rural areas are lagging behind as shown in Table 1.

[12] Aguaconsult: Swaziland Rural Water Sustainability Study, 2015.
[13] World Resources Institute. https://wriorg.s3.amazonaws.com/s3fs-public/aqueduct_coutnry_rankings_010914.pdf?_ga=2.79169556.1660194554.1553017757-1662036744.1552070501.

Table 1. Rates of Access to Improved Water Supply and Sanitation

	Urban	Rural
Access to improved sources of drinking water	96	63
Access to piped water on premises	95	28
Access to improved sanitation	94	78

Sources: Multiple Indicator Cluster Survey (MICS), Central Statistics Office, 2014; Aguaconsult: Swaziland Rural Water Sustainability Study, 2015.

15. Sanitation coverage nationally is relatively low in rural areas based on available data. Of the 78 percent of the rural population with access to improved sanitation, 2 percent is connected to sewerage systems, 4 percent use septic tanks, and 72 percent use latrines and other improved types of facilities, of which 29 percent are shared. The remaining 22 percent of the rural population either have access to unimproved facilities (8 percent) or practice open defecation (14 percent). In addition, only 25 percent of the population in rural areas have handwashing facilities. Poverty prevalence and access to water supply, sanitation, and hygiene are strongly correlated, with the lowest quintiles having the least access.[14] The data available do not provide clear diagnostics for the level of sanitation service across the service chain (containment, conveyance, transport, treatment, and reuse) and how poor sanitation and hygiene are affecting health.

16. An estimated 26 percent of children under five in Eswatini are stunted,[15] with stunting more prevalent in rural areas (27 percent) compared with urban (19 percent). The Shiselweni region has the highest percentage of stunting at 28 percent. In Eswatini, diarrhea is currently the most significant cause of death of children under five, accounting for nearly 20 percent of all deaths of children under five. Of these, an estimated 69 percent are attributable to unsafe sanitation and 81 percent are attributable to unsafe water source.[16]

17. In addition to challenges related to access, the overall sustainability of rural water supply and sanitation services is poor. A 2016 water point mapping exercise carried out by the DWA showed that one-third of the RWS schemes are no longer working and 11.5 percent functioning only partially. Of the larger reticulated schemes, the mapping exercise found that one-quarter of the systems are no longer functional.[17]

18. This lack of sustainability of the RWS schemes is rooted in a number of operational as well as institutional and policy shortcomings and can be linked to (a) the fact that existing management models do not provide for operational or financial support to communities in the operation and maintenance of the systems post construction; (b) the lack of policy instruments that provide specific guidance on key issues such as alternative/adequate management models, the constitution and nature of water service providers, sanitation and hygiene provision, and asset ownership; (c) the fact technical guidance and standards are not formalized, which means they cannot be enforced on NGOs or other entities working in the sector and are not known or recognized by other sector stakeholders; (d) poor facility design and lack of construction oversight; (e) low levels of tariff payment; and (f) the lack of an information system that can provide accurate representation of assets, coverage, and meaningful information on service levels for strategic planning and investments.

[14] MICS, Central Statistics Office, 2014.
[15] Swaziland MICS, 2014.
[16] Institute for Health Metrics and Evaluation (IHME). 2016. *GBD Compare Data Visualization*. Seattle, WA: IHME, University of Washington (accessed October 25, 2018), http://vizhub.healthdata.org/gbd-compare.
[17] Water point mapping exercise, DWA, 2016.

19. Recently, to overcome some of these challenges, the MNRE, through the DWA, signed an agreement with the EWSC, in which the rural water investment budget is transferred to the EWSC, and the EWSC provides technical, procurement, and project management expertise for the timely completion of quality RWS schemes, following the community-based management model explained earlier. Although this addresses some of the challenges, the issues of alternative management models and adequate post-construction support have not been addressed.

20. The challenges for long-term sustainability of rural sanitation are similar and include (a) poor operation and maintenance of the existing sanitation and hygiene infrastructure; (b) inappropriate sanitation infrastructure for rural households and informal settlements; (c) limited available finance and budget for sanitation and hygiene, with no specific budget available for operation and maintenance of institutional facilities (schools and health centers) or support to domestic services; (d) the need for better coordination and cooperation between the multiple sector actors (for example, central government, public institutions, decentralized institutions, municipalities, private sector, international organizations, NGOs, and community-based organizations) to optimize resource allocation; and (e) the need to develop local supplies and markets for sanitation so that local entrepreneurs can deliver on-site sanitation solutions. The Government has recently adopted a National Sanitation and Hygiene Policy and developed a sanitation strategy that highlights clear activities and priorities to address some of the identified shortcomings. Nevertheless, there is still a need to complement this effort with regulation to address sanitation and hygiene that takes a holistic approach and includes aspects such as gender (for example, menstrual hygiene) and support for its implementation.

C. Relevance to Higher Level Objectives

21. The Kingdom's 2016 NDS articulates the country's development vision: "By the Year 2022, the Kingdom of Eswatini will be in the top 10 percent of the medium human development group of countries founded on sustainable economic development, social justice, and political stability." The strategy is currently under review, and the Government has identified three ongoing priorities: (a) maintaining macroeconomic stability and accelerating economic diversification; (b) boosting strategic infrastructure; and (c) unlocking human capacity. The proposed project is in line with the GoKE's priority of alleviating acute water shortages and overcoming energy supply gaps to improve living conditions and enhance employment and income generation activities.

22. The Country Partnership Strategy (CPS) FY2015–2018 (Report No. 89210-SZ)[18] is aligned to Eswatini's NDS and its Vision 2022. Universal access to safe water and sanitation is part of Eswatini's NDS, but the country remains behind its established goal of achieving 100 percent coverage by 2022. This project would support the Government in achieving this ambitious goal. The project aligns with the two pillars of the CPS: (a) promoting growth and job creation and (b) strengthening state capabilities, through the delivery of improved water supply and sanitation services and increased skills development in the targeted area and the DWA/EWSC at large.

23. The proposed project is acknowledged in the CPS Performance and Learning Review falling under Pillar 2 of the CPS as it supports 'efforts to improve resilience of water resources and systems' by financing implementation of appropriate interventions to increase water and sanitation access and security, with a focus on underserved rural areas. The project supports improvements in the availability, quality, and reliability of water supply and sanitation services, as a means of raising living standards for people living in rural areas and small

[18] The Performance and Learning Review (PLR - Report No: 126205-SZ) extended the CPS by two years to FY2020.

towns and supporting the Government to achieve 100 percent access by 2022. The CPS Performance and Learning Review confirmed the GoKE's political commitment and support for this operation.

24. The proposed operation will support the World Bank Group's twin goals through investments in water infrastructure and improved water supply, sanitation, and hygiene (WASH) in rural, low-income areas and will be a catalyst for local development and economic activity, helping reduce extreme poverty and promoting shared prosperity. The project will also contribute to the World Bank's corporate mandates by creating an opportunity to further empower women by reducing the time spent collecting drinking water, a task predominantly undertaken by women. The project will deliver significant climate change adaptation co-benefits, particularly through Component 1, by building resilience of the targeted areas' residents to droughts and improving the planning and management of increasingly scarce water in response to climate-related events. The project is also expected to deliver significant mitigation co-benefits, mainly from the use of gravity-based water piping solar powered distribution infrastructure and avoided pumping.

25. The proposed project will also enhance the country's human capital by improving the quality and availability of water and sanitation infrastructure and associated behavioral factors to improve the environmental and hygiene conditions in the Shiselweni region. It will also aim to reduce the damage and associated impacts on human capital caused by natural disasters.

II. PROJECT DESCRIPTION

A. Project Development Objective

PDO Statement

26. The Project Development Objective (PDO) is to increase access to improved water supply and sanitation services in targeted areas of Eswatini.

PDO-level Indicators

27. The PDO-level results indicators are as follows:

(a) People provided with access to improved water sources (number/female)
(b) People provided with access to improved sanitation services (number/female)
(c) People reached through hygiene behavior awareness campaigns (number)

B. Project Components

28. The proposed project is a US$45 million Investment Project Financing (IPF) that will target improved access to water supply and sanitation and increase the resilience of water supply in the Shiselweni region. It will also strengthen sector institutions and policies for drought and disaster risk management, water resources management, as well as water supply and sanitation. The project will include four components: (1) Resilient Water Access and Management; (2) Improved Sanitation Access; (3) Project Management; and (4) Contingency Emergency Response Component (CERC).

Component 1: Resilient Water Access and Management (US$28 million)

29. This component will provide financing to increase potable water supply coverage in the Shiselweni region; improve long-term management of water resources, investment planning, and sustainability of water supply service provision; and build resilience to climate and disaster risks, with a focus on droughts.

Subcomponent 1.1: Improved Water Access

30. This subcomponent will provide financing to the ESWC for the expansion of the water supply transmission and distribution systems that will increase potable water access to an additional 18,478 people in rural areas and small towns from Nhlangano to Siphambanweni and interconnect the Nhlangano and Lavumisa water supply systems, including a transmission pipeline, reservoirs, pumping station, and distribution network, as well as the detailed engineering designs and construction supervision activities. This subcomponent will also support the EWSC on efficiency improvements, including areas such as energy efficiency, strategic asset management, and nonrevenue water reduction.

Subcomponent 1.2: Resilient Water Management

31. This subcomponent will focus on improved long-term management of water resources, investment planning, and sustainability of water supply service provision, particularly in rural areas, which will contribute toward increasing these areas' resilience to droughts. The DWA will lead the implementation of this component.

Subcomponent 1.3: Improving Eswatini's Drought Preparedness and Resilience

32. This subcomponent will concentrate on building resilience to climate and disaster risks, with a focus on the frequency and intensity of droughts. Activities financed under this subcomponent include the development and implementation of a drought monitoring and early warning system, as well as the development of a framework that will allow for a comprehensive countrywide assessment of potential climate and disaster risks. The National Disaster Management Agency (NDMA) will lead the implementation of this subcomponent.

Component 2: Improve Sanitation Access (US$15 million)

33. This component will build on the ongoing work that has been done by the EHD on appropriate technology/sanitation service delivery for rural domestic sanitation to arrive at an open defecation-free corridor in the three tinkhundla[19] (Zombodze, Hosea, and Shiselweni I) that will benefit from improved access to water services.

34. This component will finance a range of sanitation interventions aimed at reducing the incidence of water-related diseases and improving the quality of life of the beneficiaries in the project area, including (a) expanding access to domestic sanitation services in the project area; (b) assessing and piloting the use of appropriate technologies for on-site sanitation in informal settlements, health centers, and schools; (c) piloting child-centric WASH interventions (baby WASH) in households with children under three years old;[20] (d) undertaking

[19] Tinkhundla (Inkhundla - singular) are the third level of governance in Eswatini and act as local government institutions. There are 59 tinkhundla in the country.

[20] This will include interventions to address food hygiene, clean play environment, management of child and animal feces, and infant and child handwashing.

complementary sanitation communication and behavior campaigns (including menstrual hygiene management [MHM]), supply chain enhancement, and consistent behavior change programs to create sustained behavior change and buy-in to the project outputs; and (e) supporting the establishment of a rural water supply and sanitation system that will assess the functionality of water supply and sanitation services over time to better inform policy formulation, planning, and resource allocation for the provision of better quality and more sustainable water supply and sanitation services. This component will also provide support to strengthen institutions, policies, data collection and planning, and long-term sustainability of sanitation services.

35. The implementation of this component will contribute to a reduction in the volume of untreated fecal sludge ending up in water bodies, helping reduce water stress by avoiding the pollution of water resources, thereby augmenting the availability of water supply that can be used in situations of water stress. This component will also directly enhance human capital through improved sanitation and hygiene infrastructure and related behaviors, targeting women and children, the most vulnerable people in society.

Component 3: Project Management (US$1.89 million)

36. This component will provide project management support including operating costs, the preparation of progress reports, and independent audits, as well as support on project financial, procurement, environmental, and social management, as needed.

Component 4: Contingency Emergency Response Component (CERC) (US$0)

37. This component will support potential disaster recovery needs by providing immediate response to an eligible crisis or emergency, as needed. This may consist of immediate support in assessing the emergency's impact and developing a recovery strategy or the restructuring of existing or provision of new IPF and may also include operating costs, supply of critical parts and equipment, minor civil works rehabilitation, supply of fuel, rent of generators, as well as rapid transportation of chemicals and critical parts by express mechanisms.

C. Project Cost and Financing

38. The project will be financed through IPF over a period of five years. As shown in Table 2, the total project cost is expected to be US$45 million comprising an International Bank for Reconstruction and Development (IBRD) loan of US$45million. To aid implementation readiness, the project will allow retroactive financing for engineering studies and environmental and social standards activities. The retroactive financing shall be up to an amount not exceeding US$2 million, and eligible payments may be made before the Loan Agreement signing and on or after March 1, 2019.

Table 2. Cost Estimates per Component (in US$ millions)

	IBRD Loan
Component 1: Resilient Water Access and Management	28.0000
Component 2: Improved Sanitation Access	15.0000
Component 3: Project Management	1.8875
Component 4: Contingent Emergency Response Component (CERC)	0.0000
Front-end Fee	0.1125
Total	**45.0000**

D. Project Beneficiaries

39. The project will directly benefit approximately 38,233 people located in the three target tinkhundla (Zombodze, Hosea, and Shiselweni I) in Eswatini. An estimated 18,478 people will benefit through new potable water supply and 8,000 people[21] through new sanitation services.[22] Additionally, improved potable water supply and sanitation services will be provided to four health clinics and 32 schools in the targeted areas reaching an estimated 2,000 people and 5,600 people, respectively. The project will have multiple benefits in the target areas and nationally as follows:

- EWSC customers along the Nhlangano Matsanjeni corridor will experience an improvement in quality of water supply service (for example, distance to water, pressure, and daily hours of service).
- Improved reliability and quality of water supply will stimulate business and entrepreneurial activities, leading to increased commercial and residential water demand in the Shiselweni region.
- The total population of the three target tinkhundla (Zombodze [14,231], Hosea [14,733], and Shiselweni I [9,269] - total 38,233) will benefit from improved sanitation services (through new infrastructure, supply chain enhancement, behavior change campaign, sanitation marketing campaign, hygiene campaign, or private sector enhancement). Baby WASH interventions will target all households with children under three years old living in the household (assuming approximately 8 percent of households).[23]
- Improving the operational and financial efficiency of the EWSC, such as support to reduce its energy use (energy audit and exploring the use of solar energy), will benefit the EWSC and its customers.
- The interconnection of the Nhlangano and Lavumisa water supply systems will provide increased water security to the Shiselweni region.
- The institutional strengthening will contribute to increased overall water security and resilience, as it will provide a framework for early measures that can be taken on the onset of drought to mitigate its impact. This will directly benefit the agriculture and water sectors and indirectly benefit the entire country.

40. The project will facilitate the creation of both short- and long-term job opportunities through economic opportunities related to the management and operation of water, sanitation and hygiene service delivery. This includes the management of water kiosks, the delivery of onsite sanitation construction and fecal sludge management services, the downstream sanitation service chain (treatment and reuse) as well as the management of institutional WASH services and hygiene product delivery.

[21] Based on an average household size of four people.
[22] Beneficiaries who will receive access to new water supply and sanitation infrastructure.
[23] Based on Swaziland MICS results, 2014.

E. Results Chain

Increase access to improved water supply and sanitation services in targeted areas of Eswatini

1. Construction of a transmission pipeline and associated infrastructure
2. Expansion and rehabilitation of water distribution network
3. Construction of sanitation and handwashing facilities in households, schools, and health centers in targeted areas
4. Implementation of behavior change, menstrual hygiene, and hygiene practices awareness campaigns in targeted areas
5. Development of a national integrated management strategy and investment plan for potable water supply
6. Development and implementation of a drought monitoring and early warning system

1. Water transmission line from Nhlangano to Siphambanweni constructed
2. Successful connection of the Nhlangano and Lavumisa water systems
3. Water distribution network installed
4. Hand taps and kiosks installed
5. Sanitation and handwashing facilities constructed
6. Behavior change, hygiene, and MHM awareness campaigns conducted
7. Reduced time burden to fetch water
8. National integrated management strategy and investment plan for potable water supply developed
9. Drought preparedness plans developed
10. Institutional framework and capacities for national rural water supply and sanitation service strengthened
11. Drought monitoring and early warning system operational

1. People provided with improved water supply services
2. People provided with improved sanitation services
3. People reached through hygiene behavior awareness campaigns

1. Investments in infrastructure provide improved water access and sanitation for the target areas
2. Increased access to water supply and sanitation services contributes to decrease of water-related diseases and improved quality of life among vulnerable populations
3. Sustainable use of improved water supply and sanitation facilities
4. Increased population resilience to extreme water-related events, including those caused by climate change
5. Improved ability to plan for future water supply and sanitation investments
6. Increased GoKE ability to prepare for, manage, and respond to climate change-related risks, particularly droughts
7. Women and youth spend less time fetching water and as a result can participate in other activities (economic or educational)

F. Rationale for World Bank Involvement and Role of Partners

41. Several bilateral and multilateral donor institutions currently support the water supply and sanitation sector. These include the African Development Bank; Canadian International Development Agency; United Kingdom Department for International Development; United States Agency for International Development; Taiwan, China; World Health Organization; United Nations Development Program; United Nations Children's Fund (UNICEF) and the European Union. NGOs[24] work at the community level in different chiefdoms of the country.

42. In the water supply sector, technical expertise is limited to small, independent investments, rather than working with the national-level utility and investments tied to existing systems. For sanitation and hygiene, they promote stakeholder participation through motivation and education programs and provides pilot-scale sanitation facilities to rural communities. UNICEF and WaterAid have supported the Government, through the MoH, in developing the National Sanitation and Hygiene Strategy and Policy.

43. The World Bank brings international experience and lessons that can build on the existing support and provide extensive knowledge of large-scale rural and urban water supply and sanitation projects, as well as corporate and commercial analysis and advice with respect to water utilities, ensuring the long-term operational and financial sustainability of the investments. The World Bank has expertise in innovative approaches that can be adapted to the project, including nonrevenue water, energy efficiency, solar pumping for water supply, mobile money water kiosks, school and health center WASH, sanitation service delivery (full service chain), water supply and sanitation monitoring and evaluation (M&E) systems, development of integrated management strategies and investment plans for water supply and sanitation, drought monitoring, and early warning systems.

G. Lessons Learned and Reflected in the Project Design

44. The project will incorporate important lessons captured from the implementation of World Bank-financed projects in Eswatini and beyond. Specific lessons incorporated into the project include the following:

45. **Water and sanitation service delivery models in rural areas, including community-based models, require support at many levels.** This includes careful consideration of technical matters that influence system design and operations, financial and commercial/professional management requirements, social and political influences, and broader sector governance and regulation mechanisms. Support activities are incorporated into the project at various levels to enable sustainable service delivery.

46. **Combining water supply interventions with sanitation development activities (including hygiene and health promotion) supports the achievement of full health benefits** associated with water service delivery. Public health impacts are increased when WASH interventions are implemented together. This project includes an expanded sanitation program that introduces broader approaches to improve sanitation and hygiene within the household, schools, and clinics including special consideration of issues related to gender.

[24] Wateraid, Nazarene Compassionate Ministries, World Vision, Micro projects, Baphalali Red Cross Society, and so on.

47. **Effective communication, consultations, and participatory approaches are integral to the success of rural water supply and sanitation projects.** Such an approach allows for early identification of needs/priorities and potential implementation issues. It helps manage expectations, facilitates ownership and trust, and supports accountability mechanisms. These principles have been incorporated into the project design and will be applied systematically.

48. **Allocation of tasks and responsibilities between implementing agencies.** Inadequate implementing agency capacity has been cited for poor performance in many water sector operations in Sub-Saharan Africa. Agencies that have good procurement and contracting capacity, along with a thorough technical/engineering understanding of the project, tend to be better placed in achieving successful project implementation including schedule adherence. Furthermore, coordination deficiencies across agencies and/or the overloading of tasks on a single agency can lead to pronounced delays in delivering projects. To avoid these challenges, the project establishes a Project Implementation Unit (PIU) at the EWSC with subproject coordinators from the MoH, DWA, and NDMA to ensure smooth implementation of joint or interrelated activities. The EWSC has signed three Memoranda of Understanding (MoUs) with the DWA, MoH, and NDMA clarifying and detailing the roles and responsibilities of each entity and their respective project sub-coordinators that will form part of the PIU. In addition, the PIU will be overseen by a Project Steering Committee, providing overall strategic guidance to project implementation. The PIU of the EWSC may hire support in areas including procurement, financial management, contract management and compliance, monitoring, and implementation of environmental and social instruments. Extensive training will also be provided in these areas.

49. **Additional infrastructure investment without complementary operation and maintenance is not sustainable.** The project investment amounts are significant for the water supply and sanitation in Eswatini. It will be important that the project partners (EWSC, DWA, MoH, and NDMA) are reoriented to have a greater understanding of the operation and maintenance needs to establish more sustainable assets. The project will create an asset baseline through the establishment of a rural water supply and sanitation M&E system which will help highlight not only priority investments but also operation and maintenance needs of the existing systems. Support provided under the project will evaluate the sector needs to establish a more sustainable approach to asset management (technical, legal, institutional, financial, and so on) and, if required, follow up through higher-level country engagement (Systematic Country Diagnostic/Country Partnership Framework (CPF)/Development Policy Operation), which will be supported by the project.

50. **Working closely with other development partners and complementary World Bank projects to cooperate in moving forward on critical analytical and advisory activities**. There are other long-standing development partners present in the country/sector and ongoing/new World Bank projects in the health sector. Strategic cooperation will be encouraged throughout implementation to ensure successful implementation, maximization of project benefits, and most appropriate use of funds from this project.

51. **Experience from previous projects shows that stakeholder engagement, consultation, and buy-in of selected sanitation and hygiene technologies will be key to ensure their acceptance and use.** Activities financed by the project will have an added focus of ensuring that robust technical considerations and design, local ownership/buy-in, and viable operation and maintenance procedures are established for the sanitation component of the project to be a success.

52. The inclusion of disaster risk management aspects in this project has taken into account lessons learned from previous global disasters and from 25 years and the World Bank operations and programs in the area of disaster risk management. The 2005 World Bank Independent Evaluation Group report 'Hazards of Nature, Risks of Development: An Evaluation of World Bank assistance for Natural Disasters' recommends that the World Bank assists its clients most vulnerable to natural disasters in shifting from focusing entirely on disaster response to implementing programs and policies for comprehensively managing disaster risk. The technical assistance provided under the project will lay the foundation for a proactive approach to disaster risk management.

III. IMPLEMENTATION ARRANGEMENTS

A. Institutional and Implementation Arrangements

53. A Project Steering Committee will be formed comprising high-level representatives from the Ministry of Finance (MoF), Ministry of Economic Planning and Development, MNRE, MoH, Ministry of Education and Training, and Ministry of Tinkhundla Administration and Development, EWSC, and NDMA, with a mandate to be responsible for providing strategic guidance during the implementation of the project.

54. The EWSC will have responsibility for day-to-day project implementation and coordination of activities. The EWSC has established a PIU, which includes a manager/coordinator and key specialists in the areas of engineering, environmental, social, procurement and financial management. In addition to these specialists, the PIU will also include sub-coordinators from the DWA, EHD-MoH, and NDMA.

55. These sub-coordinators are responsible for the implementation of their respective institutions' components/subcomponents ensuring that their benefits are maximized, drawing the required technical resources and expertise needed from the institution for the successful implementation of specific activities, and ensuring that the activities implemented are in line and coordinated with key priorities from their respective institutions. The sub-coordinators will be supported in their efforts by the PIU team on procurement, contract, and financial management. The sub-coordinator from the EHD (at the MoH) will be responsible for implementation of Component 2, while the sub-coordinators from the DWA and NDMA will be responsible for the implementation of Subcomponents 1.2 and 1.3, respectively. The EWSC has signed three MoUs with the DWA, MoH, and NDMA clarifying and detailing the roles and responsibilities of each entity and their respective project sub-coordinators that will form part of the PIU.

56. The PIU will be responsible for preparation of a consolidated work plan, procurement-, financial-, technical-, environmental-, and social-related documentation required for the project, as well as for the overall project M&E and preparation of progress and financial reports for the project. A satisfactory Project Operations Manual (POM) describing all processes, procedures, roles, and responsibilities related to project management and implementation was prepared by the PIU and submitted to the World Bank.

B. Results Monitoring and Evaluation Arrangements

57. The PIU will have overall responsibility for the project's M&E. It will prepare quarterly progress reports during project implementation describing the status of all components and activities, progress toward achievement of the PDO, and key performance data from specific project activities that contribute

to the project's results as set out in the Results Framework. The outline of the M&E arrangements and responsibilities are detailed in the POM.

C. Sustainability

58. **Sustainability of water supply and sanitation investments.** Sustainability of water supply infrastructure and sanitation investments will be improved through targeted institutional strengthening subcomponents. These will address factors affecting overall capacity and financial sustainability of the service providers responsible for operating and maintaining the various facilities, particularly the MNRE, MoH, and EWSC. In addition, the project will also provide support to review existing management models for RWS and propose models that will enhance overall sustainability of the systems based on the experience for long-term support to the communities in the management of their systems.

59. **Community monitoring mechanisms will be developed through the MoH to enhance sanitation service delivery in rural and informal areas**. These community monitoring mechanisms will function in a participatory manner and involve existing community groups, especially women's groups, to help effectively manage system components such as latrines and handwashing stations.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic, and Financial Analysis (if applicable)

Technical Analysis

60. The World Bank has reviewed and confirmed that the proposed activities and investments financed under the project reflect government priorities and are aligned with strategic sector principles addressing key technical issues. The proposed infrastructure solutions are considered technically sound concepts, supported by engineering investigations and designs, and designed to consider operational capacity constraints and life-cycle costs to promote project sustainability. A comprehensive approach, including consideration of alternative water sources and climatic factors, has been applied to optimize designs and reduce costs.

61. For the water supply investments, a concept-level design for the water supply investments has been developed and reviewed by the World Bank. Cost estimates have been prepared and reviewed by the World Bank. The estimates are based on recent investment experience by the ESWC and include provisions for contingencies. The ESWC will launch a bidding process to contract the detailed engineering designs and construction supervision by November 2019.

62. The project will draw on sector experience and achievements to date and further develop and enhance this toward its NDS and Sustainable Development Goal targets. The investments will build upon the updated sanitation and hygiene policy by financing strategic sanitation planning and action plans, to bring the policy into action. The strengthening of the rural water supply and sanitation information system will be based on adapting successful experiences, such as the Rural Water and Sanitation Information

System initiative (SIASAR).[25] The project will also finance detailed action plans for implementation of rural sanitation and hygiene promotion and behavior change with a more targeted nutrition-sensitive WASH approach aimed at reducing child stunting; pilot interventions in targeted informal settlements, health centers, and schools; and exploring the possibility of supporting the development of small-scale private sanitation enterprises to enhance sanitation service delivery.

63. Sanitation solutions will draw on international and national best practices (and lessons learned from previous pilots/implementations strategies) and will be in line with the Citywide Inclusive Sanitation[26] approach. Listed below are the principles of the Citywide Inclusive Sanitation approach that were adapted to and will be adopted within the project.

(a) Everybody benefits from adequate sanitation service delivery outcomes.

(b) Human waste is safely managed along the whole sanitation service chain.

(c) Allow for integrated planning, design, and service provision.

(d) Responsibilities and service provision mandates are clearly defined across the rural-to-urban spectrum and beneficiary bases (domestic-to-institutional) to address fragmentation and maximize economies of scale while providing customer-oriented services.

(e) Comprehensive approaches to sanitation improvements are needed, with long-term planning, technical innovation, institutional reforms, and financial mobilization:

- A diversity of technical solutions is embraced, being adaptive, mixed, and incremental.
- Effective resource recovery and reuse are considered.
- Both onsite sanitation and sewerage solutions are combined, in either centralized or decentralized systems, to better respond to realities faced in cities
- Complementary services need to be considered: water supply, drainage, greywater, solid waste, and integrate sanitation in other national programs.

(f) Regions will need to demonstrate political will and technical and managerial leadership and to manage new and creative ways of funding sanitation.

(g) Emphasize changing and sustaining behaviours by empowering communities and engaging multiple stakeholders across different sectors affected by sanitation outcomes.

(h) Develop targeted measures to support the poor and vulnerable (financial and nonfinancial).

(i) Ensure that all gaps of the different market segments are filled (for example, rural sanitation for agglomerated rural communities and dispersed rural communities).

(j) Bolster the robustness of institutions through capacity building of staff.

64. The proposed contract packaging considers potential technical and procurement risks and geographical constraints and seeks to increase efficiency through economies of scale (by grouping similar activities into larger packages). Moreover, the procurement packaging and implementation time frames

[25] Rural Water Supply and Sanitation Information System implemented in 11 countries in Latin America and the Caribbean (www.siasar.org/en).
[26] https://www.worldbank.org/en/news/video/2017/08/21/citywide-inclusive-sanitation.

were reviewed from a technical perspective, and the approach is considered achievable within the project duration.

Economic Analysis

65. The project economic analysis includes estimates of (a) time savings to beneficiaries, resulting from some beneficiaries no longer having to access water from relatively distant sources; (b) cost savings for some beneficiaries, resulting from access to more affordable piped water, relative to the cost of water delivered by tanker trucks; (c) reduced reliance on bottled water for drinking; (d) productivity and cost benefits from reduced incidence of diarrhea; (e) improved school attendance for girls due to improved sanitation facilities; and (f) consumer surplus, generated from the additional water consumption relative to current consumption.

66. The detailed assumptions used for the economic analysis are provided in Annex 3. The net present value (NPV) of the stream of costs and benefits over a period of 30 years (four-year implementation period plus 26-year operational period) was calculated based on a discount rate of 4 percent,[27] as well as the economic internal rate of return (EIRR) generated by the investments. The EIRR is estimated to be 5.8 percent, and the NPV is estimated to be US$5.2 million.

67. There are likely to be other, nonquantifiable benefits to the project, in particular benefits related to reductions in waterborne diseases, especially during times of reduced water resources; reduced levels of stunting; reduced neonatal, infant, and child mortality; and reduced maternal mortality. The proposed investments provide insurance against: (a) inadequate water sources for both the already served areas (which are connected to piped water systems but that experience intermittent supply, particularly during the dry season and during droughts) and for unserved areas; (b) serious water shortages; and (c) deterioration of water quality during the dry season and droughts. The costs related to drought are particularly unpredictable and have not been included in the economic analysis. In addition, the amount of time spent transporting water from neighbors' facilities has not been estimated, but the reduction in such labor costs, and the benefits to women, who are most likely to carry out such labor, contributes to the overall economic benefits of the project.

Financial Analysis

68. A financial analysis of the utility as a whole and the water-related investments has been carried out. The utility's financial analysis reviewed the EWSC's recent and current operational and financial performance, while the project's financial analysis analyzed the expected project results over a 25-year period and their implied impact on the EWSC's financial results over the same period.

69. The EWSC has a history of borrowing for capital investments in expansion and service improvements, which includes a mix of commercial borrowing from local banks for smaller projects and capital grants from the Government for both larger investments and smaller, socially oriented investments. Its tariffs for water and (limited) sewerage services are agreed with the Government and are set at levels that enable the EWSC to fully cover its operational and financial costs. Its recent operational

[27] Based on two times the projected per capita growth rate of 2 percent for Eswatini, consistent with the *Guidance Note on Discounting Costs and Benefits in Economic Analysis of World Bank Projects, 2016*.

and financial performance has somewhat declined because of drought-related water shortages that resulted in lower water sales, in particular from some high-consuming industries, which turned to private boreholes to meet their water needs. Residential service is heavily subsidized by commercial consumption, which may have longer-term impacts that may need to be addressed in future adjustments to tariff structures. At this point in time, however, the EWSC continues to generate a net profit and to be able to service its debt. Additional information on the EWSC's recent operational and financial performance is provided in Annex 3.

70. **Project financial analysis.** A financial analysis of the project has been undertaken based on the existing consumption and operational information for the Shiselweni region, where the proposed investments will be made. Given the existing consumption and operational cost patterns in the region and current tariffs, initial analysis indicates that the project investments are projected to result in losses to the utility. These results are not unexpected, given the social nature of the proposed investments, and are consistent with other service-expansion investments undertaken by the EWSC. The projected operational losses are estimated to reduce the Shiselweni region's net cash results by about 10 percent. However, the impact will ultimately depend on (a) the number of new customers with household connections (as opposed to accessing water through kiosks) and (b) the cost of maintaining the new networks and customer relationships, including the number of new staff necessary in the new service areas. Regardless of measures that the EWSC may take to minimize operating costs in the project area, revenues are unlikely to cover the full costs of service due to anticipated low consumption levels and a lack of commercial customers, whose billings elsewhere subsidize residential customers. Support provided on the determination of adequate management models will take into consideration these issues and impacts going forward to further improve the financial sustainability of rural water supply and sanitation systems.

B. Fiduciary

Financial Management

71. The financial management systems and arrangements at the EWSC are capable of producing periodic reports for monitoring the financial aspects of the project. The EWSC's financial management system will be used to implement the project, within the already established oversight arrangements by the MNRE and the EWSC's Board. The EWSC has an acceptable financial management system capable of producing reliable and regular interim unaudited financial reports (IFRs) and other financial reports.

72. Project funds will be disbursed from the World Bank into a US Dollar-denominated and segregated Designated Account (DA) opened by the MoF in the Central Bank of Eswatini. Disbursements will be made based on a biannual expenditure forecast. The EWSC will also maintain a denominated dedicated Project Account in a commercial bank for the implementation of World Bank-financed components of the project. Disbursements by the MoF into this account will be on a biannual basis based on approved work plans.

73. The existing auditing arrangements are considered acceptable. The EWSC has received an unqualified audit opinion for the past three years (FY2018, FY2017, and FY2016). The EWSC's annual audit report and the auditors' management letter and management's response are to be submitted to the World Bank within six months of the end of each reporting period, that is, by September 30, each year. The financial management arrangements meet the World Bank's minimum requirements under World Bank IPF Policy and the IPF Directive (see Annex 1 for more details.)

Procurement

74. All procurement to be financed under the project will be carried out in accordance with the World Bank Procurement Regulations for IPF Borrowers (dated July 2016, revised November 2017, and August 2018) and the provisions stipulated in the Legal Agreement. Project procurement will be carried out by the procurement unit of the EWSC. Project implementation will be carried out in accordance with the 'Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD and IDA and Grants', dated July 1, 2016 (the Anticorruption Guidelines).

75. A procurement capacity and risk assessment was carried out to review the EWSC's organizational structure for implementing the project and the interaction between the project's staff responsible for procurement duties and management. The Procurement Risk Assessment and Management System (PRAMS) was finalized and an assessment of the current procurement unit under the ESWC identified the following key issues:

(a) The ESWC prepares annual budgets but does not prepare an annual procurement plan, and the lack of proper procurement planning may lead to implementation delays.

(b) During the assessment, the ESWC indicated that it does not provide feedback to unsuccessful bidders on how they fare against the evaluation criteria upon request. Not providing a debriefing to bidders may lead to an increase in complaints and may impede speedy complaint resolution.

(c) The current procurement unit staff do not have experience with World Bank procurement procedures; however, they are familiar and have experience procuring similar infrastructure under the EWSC's own funding.

(d) Poor coordination with the other implementation departments (DWA, MoH, and NDMA) may slow down the execution of procurement.

76. Based on the assessment and taking note of the roles and responsibilities of the ESWC for procurement, the procurement risk rating is assessed as 'Moderate'. The EWSC requires strengthening of its procurement and contract management capacities, and the World Bank team will provide the needed support and training.

77. Risk mitigation measures based on the discussion and assessment include (a) monitoring the execution of the procurement plan through Systematic Tracking of Exchanges in Procurement (STEP); (b) debriefing of unsuccessful bidders upon request, consistent with the Procurement Regulations for IPF Borrowers; (c) putting in place a contract management plan for major contracts; and (d) training new and current staff on the World Bank Procurement Regulations.

78. A Project Procurement Strategy for Development (PPSD) has been developed to determine the approach to market, selection methods, evaluation options, and sustainability considerations that may need to be included in the project's procurement processes. Most of the goods required for the project will likely be imported from South Africa, which is the region's manufacturing and trading hub. The contracting and consulting industries are limited with most of the large infrastructure contracts executed by regional and international firms. The PPSD considered these and other factors in determining the Procurement Plan, especially the packaging.

79. The PIU has prepared an acceptable Procurement Plan. The plan will be uploaded into the STEP system, a planning and tracking system that will provide data on procurement activities, establish benchmarks, monitor delays, and measure procurement performance. The Procurement Plan includes (a) a brief description of the activities/contracts to be procured during the first 18 months of project implementation; (b) the approach to market and selection methods to be applied; (c) cost estimates; (d) time schedules; and (e) the World Bank's review requirements. Procurement arrangements for the CERC are described in the CER Manual which is part of the POM.

80. **Contract management.** The EWSC has identified the procurement of framework contracts and consultancy for the National Water Supply and Sanitation Master Plan for increased contract management support. The EWSC will develop key performance indicators (KPIs) for such identified contracts and the KPIs will be monitored during the actual execution of contracts. The World Bank team will provide additional due diligence and independent review of the contract performance of such identified procurements. A fully staffed project team of the EWSC will be responsible for overall project/contract management.

C. Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	Yes
Projects in Disputed Areas OP 7.60	No

81. The proposed project interventions involve construction of a transmission pipeline supplied from the existing Nhlangano Water Treatment Plant, which sources water from the Mkhondvo River. The Mkhondvo River, a tributary of the Great Usuthu River (also referred to as the Maputo Basin), is an international waterway shared between South Africa, Eswatini, and Mozambique. The quantity of water to be abstracted from the Mkhondvo River as a result of the Project is 81.02 liters/second, below the threshold (110 liters/second) referred to in Annex III of the Tripartite Interim Agreement Between the Republic of Mozambique, the Republic of South Africa and the Kingdom of Swaziland for Cooperation and Sustainable Utilization of the Water Resources of the Incomati and Maputo Water Courses (the Interim Agreement) and will not adversely impact riparian countries based on the abstraction levels established in the Interim Agreement required to trigger the Southern African Development Community (SADC) Revised protocol.

82. On May 8, 2019, the GoKE sent notification letters to the Governments of the Republic of South Africa and the Republic of Mozambique regarding the project. The notification requested that comments be conveyed by June 21, 2019. No response to the notification has been received from the Republic of South Africa and the Republic of Mozambique. Approval to proceed with processing of the project was received from the World Bank Vice President for the Africa Region on July 19, 2019.

D. Environmental and Social

83. **The project's Environmental and Social Risk Classification is Moderate.** A draft Environmental and Social Impact Assessment (ESIA) along with the associated Environmental and Social Management

Plan (ESMP), a Stakeholder Engagement Plan (SEP), a Resettlement Policy Framework (RPF) and Labor Management Procedures (LMP) have been prepared for the project. The ESIA and ESMP will be finalized before the detailed design phase of the project, as part of the specific Environmental and Social Commitment Plan (ESCP) prepared for the project. All documents, including the ESCP, have been disclosed on July 26, 2019. The ESCP may be revised with prior agreement with the World Bank.

84. **Key environmental risks and impacts** will largely occur during the construction phase of the project and will be related to (a) pollution of water quality from excavation of trenches, accidental hydrocarbon spills from machinery and equipment, and chlorine from cleaning of the new pipes; (b) erosion and sedimentation from earthworks and run-off; (c) traffic during the construction phase; (d) disposal and management of waste/spoil from earth works and construction equipment and machinery; (e) occupational health and safety of workers; (f) nuisances related to air and noise emissions during construction; and (g) community health and safety. The draft ESIA includes flow rates over the last five years of the Mkhondvo River, which is the source of water for the project. According to the data, the lowest minimum flow rate (which is the worst-case scenario in five years) can accommodate the allocated quota of water per year, while leaving sufficient water for downstream use and aquatic life. The water balance, including allocation for users beyond the abstraction point, will be conducted during the detailed design phase of the project and incorporated into the final ESIA.

85. **Social risks and impacts** are related to land acquisition, restrictions on land use and involuntary resettlement, labor and working conditions, prevalence of gender-based violence (GBV) and HIV/AIDS in the country, potential impacts to community health and safety, and the Client's limited experience in implementing World Bank-funded projects. These anticipated impacts and risks are expected to be managed/mitigated through the ESIA and the associated ESMP, as well as through the Resettlement Policy Framework and any subsequent Resettlement Action Plans. Physical displacement shall be avoided to the extent possible.

86. Prevalence of sexual and GBV is high in Eswatini. According to UNICEF, among 13-24 year-olds girls and young women, 48.2 percent have experienced some form of sexual violence (UNICEF, 2007).[28] Based on the results of the World Bank GBV risk assessment tool, the project is classified as 'low risk'. Moderate labor influx is expected, with majority of workers to be recruited from within the Shiselweni region. Labor camps are not anticipated. The project will hire local unskilled labor when possible for pipeline construction, to minimize the influx of labor and reduce the potential for harm. Other skilled workers from outside the project area will lodge in establishments in neighboring Nhlangano town. The project grievance redress mechanism (GRM) will outline a process for the management of reported GBV-related cases, including details of service providers and referral systems available in the country. Contracts related to construction activities will include a code of conduct with GBV-sensitive behavior standards.

Gender and Inclusion Aspects

87. Countrywide, for 62 percent of households, an adult female usually collects drinking water when the source is not on premises, normally the case in about 50 percent of the rural households in Eswatini. An adult male is tasked with collecting water in 21 percent of households.

[28] Source: A National Study on Violence against Children and Young Women in Swaziland. UNICEF. 2007.

88. In Shiselweni, the burden of water collection falls predominantly on women, who are three times more likely than men to be responsible for fetching water. It is a woman's responsibility to source water in 66 percent of households without water on-site, whereas men are responsible for the task in 21 percent of households.[29] In the remaining households, a child under age 15 fetches water—young girls are slightly more likely to do so (4.9 percent versus 4.4 percent for young boys).

89. Therefore, when the water source is not on household premises, as is in 67.6 percent of households in Shiselweni, predominantly women have to spend additional time each day collecting water. In addition, in the drought- and flood-prone region of Shiselweni, fetching water takes longer than in other regions—30.8 percent of all households spend 30 minutes or more each day on water collection, while the national average is 20 percent.[30] The responsibility for fetching water, combined with recurring droughts and floods, results in women facing an increased risk of GBV, as they have to walk further distances to water sources. Through improved access to water (that is, located closer to home, adequate volume of supply, better quality of water, and regularity of supply), the project will directly improve the situation of women, the elderly, and the youth in the targeted areas of Eswatini. In particular, women and youths will be able to focus on other activities (for example, schooling and livelihoods) than collecting water. The project will monitor the percentage of women who spend 30 minutes or more to go to source of drinking water, get water, and return.

90. The second issue identified by the project relates to a lack of adequate sanitation facilities in schools equipped for menstruation management. The onset of menstruation coincides with higher dropout rates among female students. The lack of information about menstruation and absence of adequate sanitation facilities exacerbate the challenges faced by girls and young women and have negative environmental effects.[31] Poor menstrual hygiene, caused by inadequate sanitary conditions, places adolescent girls at risk of urinary tract infections.[32] The project will promote design standards that take into account MHM needs and good practices (separate cabins for boys and girls, safe locks, lighting, presence of disposal bins, and handwashing stations). These activities will be supplemented with a hygiene promotion campaign in schools, with information on menstruation (designed for students and teachers).

91. The project will also explore opportunities to narrow gender gaps in employment in the water sector. Female labor force participation in Eswatini is lower than that of men (41 percent for women versus 66 percent for men), and as previously mentioned, female unemployment is higher than male. As global evidence shows, women tend to be underrepresented in water and sanitation utilities and leave water companies at a higher rate than men. On average, less than one fifth of employees are female. The project will explore opportunities to remove barriers to female employment and advancement in the water sector, especially in technical and managerial positions.

[29] MICS, Central Statistics Office, 2014.
[30] This disparity is correlated with the education level of the household head. In households where the head has tertiary education, the responsibility for collecting water is shared almost equally, with responsibility being held by women in 35.4 percent of households and men in 31.6 percent.
[31] World Bank. 2019. *Providing Sustainable Sanitation Services for All in WASH Interventions through a MHM Approach*. Washington, DC: World Bank.
[32] Humanitarian Needs Overview. 2016. The Kingdom of Swaziland.

92. The NDS of the Kingdom of Eswatini[33] lists disadvantaged groups that include persons with disabilities, the youth, the elderly, and women. The strategy aims to ensure the provision of adequate sanitation, including the provision of facilities for persons with disabilities (NDS, paragraph 4.3.10 c). In line with the strategy, the project will follow universal design principles to make infrastructure accessible for persons with disabilities, taking steps to include persons with disabilities and other disadvantaged groups in project planning and implementation.

Citizen Engagement

93. The project will build on an existing GRM to receive complaints related to water and sanitation services and project works (with separate phone numbers for water and sanitation issues). Complaints will be channeled through project liaisons, via the EWSC's social media platforms (Facebook, Twitter, etc.), in person, or any other official communication system that is available (the EWSC's website, hotline, etc.). The project will track the percentage of grievances responded to and resolved in relation to the delivery of project benefits. The project GRM will outline a process for the management of reported GBV-related cases, including details of service providers and referral systems available in the country.

V. GRIEVANCE REDRESS SERVICES

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

[33] The NDS, the Kingdom of Swaziland, 2016. http://www.snat.org.sz/New%20Page/The-National-Development-Strategy.pdf.

VI. KEY RISKS

95. The overall risk rating as presented in the Systematic Operations Risk-Rating Tool table in the data sheet is Substantial. This is primarily because the project is the first investment operation in the water sector in Eswatini with World Bank financing in over 40 years.

96. The political and governance risk is rated Substantial, given the complex decision-making process affecting Eswatini borrowing from international entities such as the World Bank Group. Though Eswatini has enjoyed a stable political environment and continuity in government, the implementation of government initiatives depends on high-level political commitment, which has been secured for this project. However, weak governance structures can undermine accountability, transparency, and mechanisms for setting national priorities. The equal importance of both the traditional and modern system of government complicates clear decision making and might lead to policy reversal or even project reversal as previously experienced. A deepened sector dialogue will enable more frequent engagement with the GoKE and other stakeholders to keep them updated on project progress and the expected benefits.

97. The macroeconomic rating is Substantial given that the current and outlook conditions are fragile, as the Government faces the challenge of implementing clear policies that can reverse the ongoing fiscal challenges. While the Government has repeatedly emphasized its commitment to fiscal consolidation, the needed reforms have not been fully implemented and the continued failure to do so may lead to increased domestic arrears and debt levels, threatening macroeconomic stability, potentially leading to higher investment costs and difficulties in ensuring sustainability of financing for operation and maintenance of project investments. The World Bank continues to maintain a dialogue on the macroeconomic situation that includes policy discussions and advice aimed at improving the overall economic outlook.

98. Key risks because of climate change impacts are inundation and droughts and these are considered Substantial. The climate change risks in Eswatini were assessed through the World Bank's Climate and Disaster Risk Screening Tool, and the three main risks identified were inundation due to extreme precipitation and flooding, extreme temperature, and droughts. Between 2020 and 2039, monthly mean temperatures will increase by up to 1.23°C in the hottest months, that is, January to March, and between 2040 and 2059. It is expected that temperatures shall rise by up to 2.2°C during the same months. The number of extremely hot days (> 40°C) in a year is projected to increase by 2.4 days over the 2020–2039 horizon and rising to four days over 2040–2059. Precipitation could increase or decrease by 32.8 mm and 34.5 mm over 2020–2039. Change in annual rainfall for very wet days is also projected to increase by 159 percent or fall by 117 percent, while the projected change in annual severe drought likelihood for 2020–2039 could increase by as much as 29 percent. The project has been designed in large part to specifically help address these risks, particularly through the adaptation-focused activities in Components 1. In addition, a CERC is included under the project, which could be triggered to minimize the impacts of such extreme events.

VII. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Eswatini

Kingdom of Eswatini: Water Supply and Sanitation Access Project

Project Development Objectives(s)

To increase access to improved water supply and sanitation services in targeted areas of Eswatini.

Project Development Objective Indicators

Indicator Name	DLI	Baseline	End Target
Increase access to improved water supply and sanitation services in targeted areas of Eswatini			
People provided with access to improved water sources (CRI, Number)		0.00	18,478.00
People provided with access to improved water sources - Female (RMS requirement) (CRI, Number)		0.00	9,239.00
People provided with access to improved sanitation services (CRI, Number)		0.00	8,000.00
People provided with access to improved sanitation services - Female (RMS requirement) (CRI, Number)		0.00	4,000.00
People reached through hygiene behavior awareness campaigns (Number)		0.00	38,233.00

Intermediate Results Indicators by Components

Indicator Name	DLI	Baseline	End Target
Resillient Water Access and Management			
Schools provided with improved water access (Number)		0.00	32.00
Health centers provided with improved water access (Number)		0.00	4.00
Length of water pipeline constructed (Kilometers)		0.00	305.00
Develop and implement a drought monitoring and early warning system (Yes/No)		No	Yes
Women in the target area that spend 30 minutes or more to go to source of drinking water, get water and return (Percentage)		20.30	10.00
Improved Sanitation Access			
Household containment facilities constructed (Number)		0.00	2,000.00
Sanitation facilities constructed in schools (Number)		0.00	32.00
Sanitation facilities constructed in health centers (Number)		0.00	4.00
Reduction in open defecation (Percentage)		0.00	12.00
Girls who benefited from having school sanitation with adequate WASH, MHM facilities and MHM education. (Number)		0.00	2,800.00
Project Management			
Grievances satisfactorily addressed with new grievance redress mechanism (Percentage)		0.00	100.00

Monitoring & Evaluation Plan: PDO Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
People provided with access to improved water sources	This indicator measures the cumulative number of people who benefited from improved water supply services that have been constructed through operations supported by the World Bank.	Quarterly	Contractor records, EWSC records and project developed M&E information system	Contractor and EWSC local area unit will: (i) record the number of connections and kiosks implemented with Project financing (ii) inform PIU of number of active connection available. The PIU will consolidate the data.	EWSC and the PIU M&E team will be responsible for consolidating and reporting the data in progress reports.
People provided with access to improved water sources - Female (RMS requirement)	This indicator measures the cumulative number of people who benefited from improved water supply services that have been constructed through operations supported by the World Bank.	Quarterly	Contractor and EWSC data source.	Contractor and Local EWSC area unit will: (i) record number of connections achieved and kiosks constructed through the project financing that benefit women and ii) inform EWSC/PIU of number of active connections achieved that benefit women.	PIU M&E personnel will be responsible for consolidating and reporting the data in progress reports.
People provided with access to improved sanitation services	The indicator measures the cumulative number of people who benefited from	Quarterly	Local EHD records and project M&E	Respective local EHD, MoH unit will (i) record number of facilities	EHD sub-coordinator at PIU and local level EHD staff. THE PIU M&E

	improved sanitation facilities that have been constructed through operations supported by the World Bank.		system.	constructed through project financing; ii) number of facilities used. The PIU will consolidate the data.	staff will be responsible for consolidating and reporting the data in progress reports.
People provided with access to improved sanitation services - Female (RMS requirement)	The indicator measures the cumulative number of people who benefited from improved sanitation facilities that have been constructed through operations supported by the World Bank.	Quarterly	Local EHD records and Project M & E system.	Local EHD MoH staff will : (i) record the number of facilities constructed with project financing that directly benefit women and (ii) inform PIU of number of facilities being used by women. The PIU will consolidate the data for reporting.	EHD sub-project coordinator at PIU and local EHD staff. The PIU M&E team will be responsible for consolidating and reporting in progress reports.
People reached through hygiene behavior awareness campaigns	The number of people in the project area that are reach through project financed hygiene behavior awareness campaigns	Quarterly	Local EHD MoH staff.	Local EHD MoH staff will record the number of people reached through hygiene behavior awareness campaign with project financing. The PIU will consolidate the data.	EHD MoH sub-project coordinator and local EHD MoH staff. The PIU M&E team is responsible for consolidating and reporting the data.

Monitoring & Evaluation Plan: Intermediate Results Indicators					
Indicator Name	**Definition/Description**	**Frequency**	**Datasource**	**Methodology for Data Collection**	**Responsibility for Data Collection**
Schools provided with improved water access	Number of schools provided with improved water access through project financing	Quarterly	EWSC local area unit, Ministry of Education Records and PIU records	EWSC local area unit will: (i) record the number of connections and kiosks implemented with Project financing (ii) inform PIU of number of active connections available. The PIU will verify and consolidate the data.	EWSC, Ministry of Education, PIU M&E team will be responsible for consolidating and reporting the data in progress reports.
Health centers provided with improved water access	Number of health centers provided with improved water access using project financing	Quarterly	EWSC local area unit, MOH records and PIU records	EWSC local area unit will: (i) record the number of connections and kiosks implemented with Project financing (ii) inform PIU of number of active connection available. The PIU and MoH will verify and PIU will consolidate the data.	EWSC, MoH and the PIU M&E team will be responsible for consolidating and reporting the data in progress reports.
Length of water pipeline constructed	Number of km of water pipeline constructed using project financing.	Quarterly	Contractor construction records and	Contractor will: (i) record the km of water pipeline	Contractor and EWSC local area unit. PIU M&E team will be responsible

			EWSC local area unit supervision. PIU will verify data.	constructed with Project financing. EWSC local unit and PIU will verify.	for consolidating and reporting the data in progress reports.
Develop and implement a drought monitoring and early warning system	A drought monitoring and early warning system is developed and implemented under the project.	Bi-annually	Consultant supporting system development . NDMA and PIU verification and reporting.	NDMA unit responsible for development. The PIU will confirm the system has been developed and is operational.	The NDMA sub-project coordinator will verify the status of the system. M&E team of the PIU will be responsible for consolidating and reporting on the system development and its use in progress reports
Women in the target area that spend 30 minutes or more to go to source of drinking water, get water and return	Reduction in the percentage of women that spend 30 minutes or more to go to source of drinking water, get water and return. Baseline data from Multiple Indicator Cluster Survey, Central Statistics Office, 2014.	Annually	Contractor information on location of water connections and kiosks and EWSC local area unit data.	EWSC local area unit will: (i) record the number of connections and kiosks implemented with Project financing (ii) complete represent ative survey to record the time spent by project targeted women to collect water after component 1 implementation. The PIU will consolidate the data.	EWSC through the PIU will be responsible for collecting the data and the PIU M&E team will be responsible for consolidating and reporting in progress reports.

Household containment facilities constructed	Number of household containment facilities constructed using project financing or through household financing as a result of project activities.	Quarterly	Respective Local level Environmental Health Department, Ministry of Health unit records	Respective Local EHD, MoH unit will (i) record number of facilities constructed through project financing; (ii) number of facilities used. The PIU will consolidate the data.	EHD sub-coordinator at PIU and local level EHD MoH staff. THE PIU M&E staff will be responsible for consolidating and reporting the data in progress reports.
Sanitation facilities constructed in schools	Number of sanitation facilities constructed in schools under project financing	Quarterly	Contractor, local EHD, MoH unit and Ministry of Education records.	Respective local EHD, MoH unit will (i) record number of facilities constructed through project financing; (ii) number of facilities used. The PIU will consolidate the data.	EHD sub-coordinator and local level EHD staff. The Ministry of Education will verify the data. THE PIU M&E staff will be responsible for consolidating and reporting in progress reports.
Sanitation facilities constructed in health centers	Number of sanitation facilities constructed in health centers financed under the project.	Quarterly	Contractor and local EHD, MoH unit records.	Respective Local level EHD, MoH unit will (i) record number of facilities constructed through project financing; (ii) number of facilities used. The PIU will consolidate the data.	EHD sub-coordinator at PIU and local level EHD staff. The MoH will verify the data. THE PIU M&E staff will be responsible for consolidating and reporting the data in progress reports.

Reduction in open defecation	Reduction in the percentage of people openly defecating in the project target areas. Baseline data from Multiple Indicator Cluster Survey, Central Statistics Office, 2014.	Quarterly	Local EHD, MoH unit records.	Respective local EHD, MoH unit will (i) regularly record outcomes of behavior change campaign including Open Defecation (OD) reduction; (ii) undertake a representative survey after component 2 has been completed to establish reduction in OD. The PIU will consolidate the data.	EHD sub-coordinator at PIU and local level EHD staff. THE PIU M&E staff will be responsible for consolidating and reporting the data in progress reports.
Girls who benefited from having school sanitation with adequate WASH, MHM facilities and MHM education.	Number of girls who benefited from having school sanitation with adequate WASH and MHM facilities constructed under the project. This specifically means: separate entrance for females, hooks, availability of MHM product disposal, availability of water and soap nearby, lockable doors and lighting. This will be complemented by MHM education campaigns.	Quarterly	Contractor records and PIU verification	Contractor and respective local EHD, MoH unit will (i) record number of facilities constructed with female-friendly aspects. The PIU will verify and consolidate the data.	EHD sub-coordinator at PIU and local level EHD staff. THE PIU M&E staff will be responsible for consolidating and reporting in progress reports.

Grievances satisfactorily addressed with new grievance redress mechanism	Percentage of grievances satisfactorily addressed with new grievance redress mechanism as proportion of total grievances received.	Quarterly	Grievance redress mechanism databases, including the EWSC customer satisfaction database.	The grievance redress mechanism/responses with be recorded in line with the GRM arrangements agreed under the project and with the EWSC customer response data collected from appropriate department. The PIU M&E team will monitor and record this data.	The PIU M&E staff will be responsible for consolidating and reporting in progress reports.

ANNEX 1: IMPLEMENTATION ARRANGEMENTS AND SUPPORT PLAN

COUNTRY: Eswatini
Eswatini Water Supply and Sanitation Access Project

Project Implementation Arrangements

1. A Project Steering Committee will be formed comprising high-level representatives from the MoF, Ministry of Economic Planning and Development, MNRE, MoH, Ministry of Education and Training, and Ministry of Tinkhundla Administration and Development, EWSC, and NDMA. The Project Steering Committee will have consultative and decision-making powers and will be responsible for providing strategic guidance to project implementation. The MNRE will be the Executive Secretariat for the Project Steering Committee assisting it and the PIU in carrying out its respective functions under the project and accompanying project implementation.

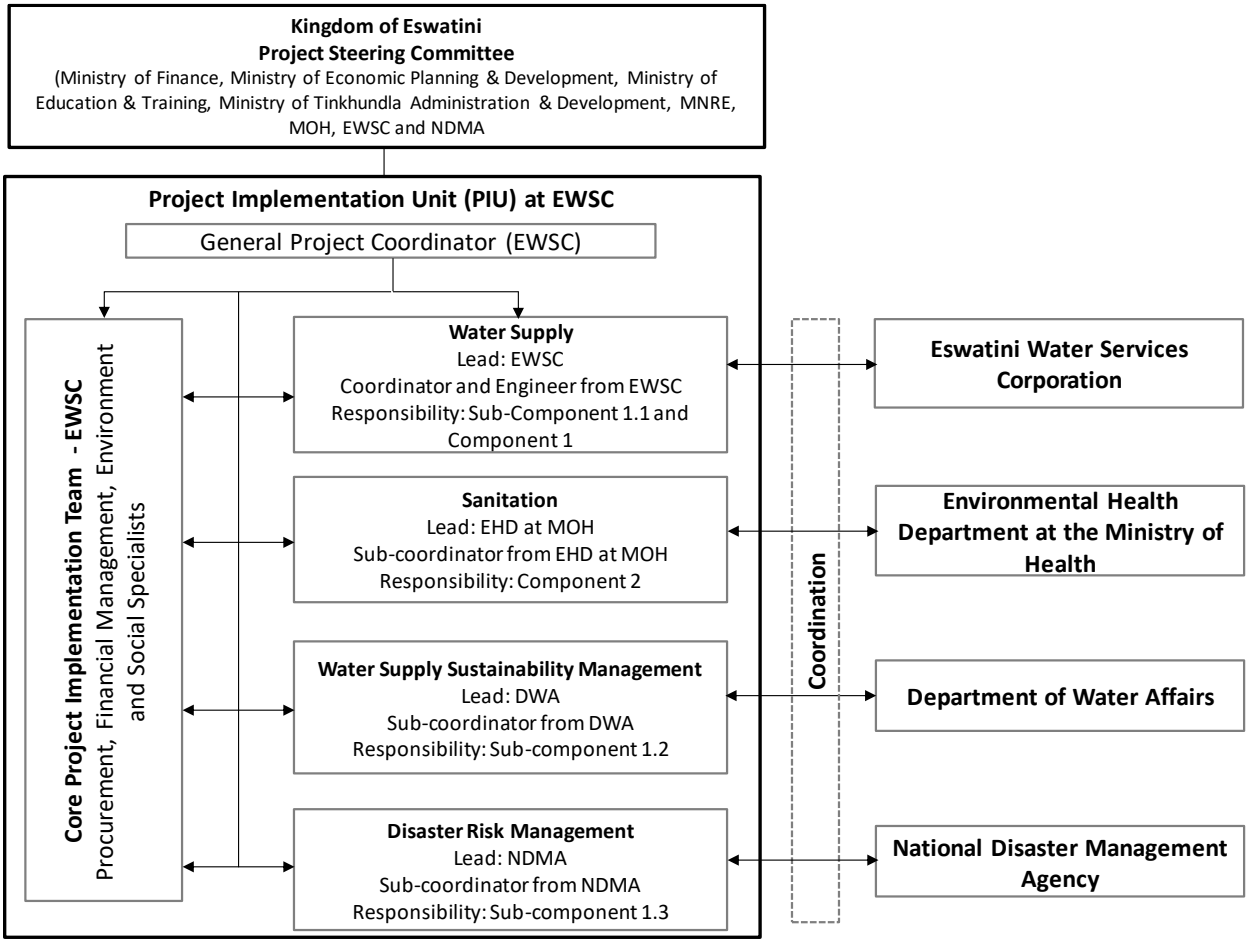
2. The EWSC will have main responsibility for overall project implementation. On behalf of the Borrower, the EWSC will be responsible for day-to-day project implementation and coordination of activities. It will do so through the established PIU, which will include subproject coordinators from the DWA, EHD (at the MoH), and NDMA. The EWSC may also strengthen the capacity of the PIU, as needed, to support project implementation using resources under the project management component.

3. The EWSC will be responsible for overall project coordination, procurement, financial management, project implementation, and M&E through the PIU. It will report on project progress and coordinate with other ministries and agencies as needed. The EWSC has signed three MoUs with the DWA, MoH, and NDMA clarifying the roles and responsibilities of each entity during project implementation to foster better collaboration and ensure a smooth implementation process.

4. The sub-coordinators are representatives from their respective agencies and will be responsible for the implementation of their respective institutions' components/subcomponents ensuring that their benefits are maximized, drawing the required technical resources and expertise needed from the institution for the successful implementation of specific activities, and ensuring that the activities implemented are in line and coordinated with key priorities from their respective institutions. The sub-coordinators will be supported in their efforts by the PIU team on procurement, contract, and financial management, as well as environmental and social aspects when necessary. The sub-coordinator from the EHD (at the MoH) will be responsible for implementation of Component 2, while the sub-coordinators from the DWA and NDMA will be responsible for the implementation of Subcomponents 1.2 and 1.3, respectively.

5. The PIU will be responsible for preparation of a consolidated work plan, procurement-, financial-, technical-, environmental-, and social-related documentation required for the project, as well as for the overall project M&E and preparation of progress and financial reports for the project. A satisfactory POM describing all processes, procedures, roles, and responsibilities related to project management and implementation was submitted to the World Bank.

Figure 1.1. Project Implementation Arrangements



Financial Management

6. A Financial Management assessment of the EWSC was carried out as required by the World Bank's IPF Policy on Financial Management. The main objective of the assessment was to ensure that acceptable financial management arrangements are in place for the implementation of the project, that can ensure: (a) funds are used for the intended purposes in an efficient and economical way; (b) all transactions and balances are correctly recorded to support preparation of regular and reliable financial statements that are subject to auditing arrangements acceptable to the World Bank; and (c) internal controls are considered capable of safeguarding the EWSC's assets.

7. The EWSC finance unit is headed by the Finance Director, a professional chartered accountant. The EWSC uses the Accpac accounting software and the financial statements are prepared in accordance with International Financial Reporting Standards (IFRS). The systems are adequate to record and report on uses of the project funds.

8. The EWSC's Finance unit will be responsible for the financial management aspects of project implementation. The financial management arrangements and systems at the EWSC meet the World Bank's minimum requirements for financial management under IPF Policy, as they have the capability of producing periodic reports for monitoring the financial aspects of the project. The EWSC's financial management system will

be used to implement the project, within the already established oversight arrangements by the MNRE, EWSC's Board and MoF. The following table presents the identified Financial Management risks and the proposed mitigating measures.

Table 1.1. Financial Management Risk Mitigation Assessment

Risk	Rating	Risk mitigation measures	Residual risk
Entity Level The entity responsible for the Financial management of the project is not familiar with the World Bank and therefore has limited knowledge of the World Bank's financial management and disbursement policies and procedures.	M	The World Bank will conduct a comprehensive training on the World Bank's financial management and disbursement policies and procedures by effectiveness of the loan agreement. Staff in the finance and the internal audit units will be encouraged to participate in the World Bank's periodic training program on financial management and disbursement, and in courses organized by World Bank recognized training institutions.	M
Project Level Variations to project scope and supplier price variations might affect budget estimates	M	Through review of the project scope against the desired objective and sign off by both parties. Contingent budget provision for unavoidable variations will be set and closely monitored.	M
Control Risk Budgeting: due to the nature of the project, the budget process may not be based on realistic cost estimates and procedures for approvals and variations may not be clearly laid out.	M	The EWSC procurement procedures provides guidelines on scope variations of the projects. Variations are approved by the management tender committee and the board tender committees.	M
Accounting No identified risk at this stage. The EWSC prepares monthly financial statements reviewed by the audit committee of the board. The EWSC uses the Accpac accounting software, which can produce the required financial reports. The finance unit is headed by a professionally qualified accountant with sound track record in finance.			
Internal Controls and staffing Accounting policies and procedures may not be followed consistently and might weaken the control environment. The initial financial management assessment has indicated that the staffing arrangements are still adequate to manage the project, although the arrangements will be monitored and adjusted throughout the project implementation.	M	The EWSC has an effective internal audit unit. This unit has unrestricted access to the chairman of the company's audit committee. The review of the internal audit reports has indicated a healthy internal control environment.	M
Funds Flow No identified risk, funds will flow into the segregated DAs for payments of project activities.			
Financial Reporting No identified risk. The entity is preparing quality management reports for internal monitoring.			

Risk	Rating	Risk mitigation measures	Residual risk
Auditing No specific audit risk, EWSC is mandated by its establishing Acts to produce annual audited financial statements			
Overall Financial Management Risk Rating	M	The overall financial management residual risk is "Moderate". The country, entity and project levels inherent risks are mitigated using the EWSC's financial management system (assessed as satisfactory for the implementation of the project) and the functioning oversight arrangements provided by the MNRE and the MoF.	M

Internal Controls and Auditing Arrangements

9. Approval and authorization controls are documented in the policies and procedures manual and compliance therewith is monitored by well experienced accounting staff. The financial and accounting policies and manuals, including the payment, purchasing manual and procedures stock purchasing, payments processing will be adopted for the project.

10. The internal audit department is headed by the Head of Internal Audit and supported by three internal auditors. The Head of Internal Audit reports to the Board functionally, through the Internal Audit Committee, and to the Managing Director administratively. The department has six established positions. The review of audit committee charter, internal audit charter and internal audit manual gives assurance this oversight function can relied upon. The review of two randomly selected reports in the financial year 2017/2018 indicated a need for improvement in the credit control processes of EWSC. This risk will need to be managed during project implementation.

Financial Reporting

11. The project will produce and submit IFRs to the World Bank on a quarterly basis. These reports are designed to provide detailed and timely information to the project management, the steering committee, the MoF, and the MNRE, and will include:

(i) A narrative summary of the project implementation highlights;
(ii) Sources and uses of funds by disbursement categories;
(iii) Uses of funds by project component/activity- both actual and cumulative;
(iv) The DA activity statement;
(v) Summary of payments made for contracts subject to the World Bank's prior review; and
(vi) Summary of payments made for contracts not subject to the World Bank's prior review.

Flow of Funds and Disbursement Arrangements

12. Upon the signing of the Loan Agreement, the World Bank will open an internal loan account, in the name of the Government. Funds will flow from the World Bank (loan account) into a US Dollar-segregated DA maintained by the MoF at the Central Bank of Eswatini. Further disbursements into a Project Account managed by the EWSC will be based on approved workplans.

13. The project will use the advance disbursement method whereby withdrawals from the loan account will be deposited in the DA for payment of the World Bank-financed eligible expenditures. Disbursements from the loan account will be based on quarterly IFR documentation to be prepared by the EWSC. For withdrawal from the loan account, the EWSC will be responsible for submitting withdrawal applications through the MoF, supported by IFRs, within 45 days of the end of each reporting period.

14. The project will also have the option of using: (i) the Direct Payment disbursement method involving direct payment from the loan account on behalf of the EWSC to suppliers of goods and services that have a value above a set threshold; (ii) the Reimbursement disbursement method, whereby the EWSC makes payments for World Bank-eligible expenditures and submits withdrawal applications for reimbursement; and (iii) the Special Commitment method whereby the World Bank at the request of the EWSC, will issue special commitments to suppliers of goods under the World Bank-financed components. Upon the effectiveness of the loan agreement and submission of a withdrawal application, the World Bank will disburse an amount equivalent to six months of expenditure into the DA. Subsequent disbursements will be based on biannual estimates of project expenditures, considering the balance in the DA at the end of the reporting period. To aid implementation readiness, the project will allow retroactive financing for engineering studies and environmental and social standards activities. The retroactive financing shall be up to an amount not exceeding US$2 million, and eligible payments may be made before the Loan Agreement signing and on or after March 1, 2019.

Table 1.2. Eligible Expenditure per Category

Category	Amount of the Loan Allocated (expressed in USD)	Percentage of Expenditures to be financed (inclusive Taxes)
(1) Goods, works, non-consulting services, consulting services and operating costs under Parts 1, 2 and 3 of the project	44,887,500	100%
(2) Emergency expenditures under Part 4 of the project	0	100%
(3) Front-end Fee	112,500	Amount payable pursuant to Section 2.03 of this Agreement in accordance with Section 2.07 (b) of the General Conditions
(4) Interest Rate Cap or Interest Rate Collar premium	0	Amount due pursuant to Section 4.05 (c) of the General Conditions
TOTAL AMOUNT	45,000,000	

Auditing Arrangements

15. **Audited financial statements**. The EWSC's financial statements will be acceptable to the World Bank without a requirement for a separate audit report for the project. The auditors will, however, be required to express an opinion on the quality of IFRs produced and submitted to the World Bank during the period covered by the audit. The financial statements will also include a summary of all the withdrawals from the loan account during the period with assertion that the loan proceeds have been used for the intended purposes and in accordance with the World Bank legal agreements. The Government will prepare the audit terms of reference in consultation with the World Bank to ensure adequate coverage of the scope of the audit. The following table identifies the audit reports that are required to be submitted to the World Bank and their respective due dates for submission.

Table 1.3. Reporting Requirements

Audit Report	Due Date
Continuing Entity Financial Statements- April-March (EWSC)	September 30 each year
Special opinion on the: (i) Quality of the IFRs used for withdrawal from the loan account (ii) Operation and usage of the DA (iii) Delivery of specified/agreed output/services of the project	As part of the annual audit report

Procurement

16. All procurement to be financed under the project will be carried out in accordance with the World Bank Procurement Regulations for IPF Borrowers (dated July 2016, revised November 2017 and August 2018), and the provisions stipulated in the Legal and Project Agreements. Project procurement will be carried out by the EWSC's PIU. Project implementation will be carried out in accordance with the 'Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD and IDA and Grants', dated July 1, 2016 (Anticorruption Guidelines).

17. A procurement capacity and risk assessment was carried out to review the ESWC's organizational structure for implementing the project and the interaction between the project's staff responsible for procurement duties and management of the commission. The PRAMS has been finalized and an assessment of the current procurement unit under the ESWC identified the following key issues:

(a) The ESWC prepares annual budgets but does not prepare an annual procurement plan, and the lack of proper procurement planning may lead to implementation delays.

(b) During the assessment, the ESWC indicated that it does not provide feedback to unsuccessful bidders on how they fared against the evaluation criteria upon request. Not providing a debriefing to bidders may lead to increase in complaints and may impede speedy complaint resolution.

(c) The current procurement unit staff do not have experience with World Bank procurement procedures; however, they are familiar and have experience procuring similar infrastructure under the EWSC's own funding.

(d) Poor coordination with the other implementation departments (DWA, MoH, and NDMA) may slow down the execution of the procurement.

18. Based on the assessment and taking note of the role and responsibility of the ESWC for procurement, the procurement risk rating is assessed as 'Moderate'. The EWSC requires strengthening of its procurement and contract management capacities and the World Bank team will provide the needed support and training.

19. Risk mitigation measures based on the discussion and assessment include (a) monitoring the execution of the procurement plan through STEP; (b) debriefing of unsuccessful bidders upon request, consistent with the Procurement Regulations for IPF Borrowers; (c) putting in place a contract management plan for major contracts; and (d) training new and current staff on the World Bank Procurement Regulations.

20. A PPSD has been developed to determine the approach to market, the selection methods, evaluation options, and sustainability considerations that may need to be included in the project's procurement processes. Eswatini's economy is largely driven by agro-based exports and agriculture employs over 70 percent of the

population. Most of the goods required for the project will likely be imported from South Africa, which is the region's manufacturing and trading hub. The contracting and consulting industries are limited with most of the large infrastructure contracts executed by regional and international firms. Local firms wishing to participate in public sector procurement are required to register with the Construction Industry Council (CIC). The registration process is not unduly cumbersome and is not seen as a deterrent to participation. The Kingdom of Eswatini has some schemes in place to support its domestic private sector. Under the National Procurement Framework sustainable procurement requirements, such as environmental, social and economic considerations are allowable. These schemes will be applicable to procurement processes subject to National Procurement Procedures The PPSD considered these and other factors in determining the Procurement Plan, especially the packaging.

21. The PIU has prepared an acceptable Procurement Plan. The plan will be uploaded into the STEP system, a planning and tracking system that will provide data on procurement activities, establish benchmarks, monitor delays, and measure procurement performance. The Procurement Plan includes (a) a brief description of the activities/contracts to be procured during the first 18 months of project implementation, (b) the approach to market and selection methods to be applied; (c) cost estimates; (d) time schedules; and (e) the World Bank's review requirements. Procurement arrangements for the CERC are described in the CERC Manual, which forms part of the POM.

22. The Eswatini Public Procurement Act 2011 has been assessed and indicates that the country's regulations are generally consistent with international best practices, although some weaknesses were identified, which should be mitigated through adequate measures to ensure that (a) contract documents have an appropriate allocation of responsibilities, risks, and liabilities; (b) contract award is published; and (c) the national regulations do not preclude the World Bank from its rights to review procurement documentation and activities under the financing.

23. The request for bids/request for proposals document shall require that bidders/proposers submitting bids/proposals present a signed acceptance at the time of bidding, to be incorporated in any resulting contracts, confirming application of, and compliance with, the World Bank's Anticorruption Guidelines, including without limitation, the World Bank's right to sanction and the World Bank's inspection and audit rights.

24. With the incorporation of the abovementioned provisions, the Eswatini Public Procurement Act will be acceptable to be used under those procurements using the open national approach not subject to the World Bank's prior review as agreed with the World Bank in the approved Procurement Plan.

25. **Procurement of works.** This includes procurement of transmission mains, network reinforcements, and construction of on-site sanitation management solutions. The main works package will be procured through an open international approach to the market.

26. **Procurement of goods.** Goods to be procured under this project will include household connection materials and vehicles.

27. Procurement, while approaching the international market, will be done using the World Bank's standard procurement documents. Procurement while approaching the national market will be done using the national standard bidding documents, subject to incorporation of the abovementioned provisions, with an additional annex to address the World Bank's Anticorruption Guidelines and ensure universal eligibility.

28. **Procurement of consultancy services.** Consulting services to be procured under the project include hiring of firms to carry out studies, assessments, designs, and supervision of works and related activities. Hiring of individual consultants will be limited to any international consultant(s) required for project implementation.

29. **Operating costs.** These items will be procured using the Borrower's national procurement and administrative procedures acceptable to the World Bank, including selection of project implementation support personnel.

30. **Record keeping.** All records pertaining to award of bids, including bid notification; register pertaining to sale and receipt of bids; bid opening minutes; bid evaluation reports; and all correspondence pertaining to bid evaluation, communication sent to/with the World Bank in the process, bid securities, and approval of invitation/evaluation of bids would be retained by the EWSC and uploaded in STEP.

31. The following details shall also be published on the United Nations Development Business online and the World Bank's external website: (a) an invitation for bids for procurement of goods and works following open international market approaches; (b) request for expression of interest for selection of consulting services following open international market approaches; and (c) contract award details of all procurement of goods and works and selection of consultants using open international market approaches.

32. **Fiduciary oversight by the World Bank.** The World Bank shall prior review contracts according to the prior review thresholds set in the PPSD/Procurement Plan. All contracts not covered under prior review by the World Bank will be subject to post review during implementation support missions, including missions by consultants hired by the World Bank or through supreme audit institutions as part of the financial audit. The World Bank may, at any time, conduct independent procurement reviews of all the contracts financed under the credit.

33. **Contract management.** The EWSC has identified the procurement of framework contracts and consultancy for the National Water Supply and Sanitation Master Plan for increased contract management support and indicated in the Procurement Plan. The EWSC will develop KPIs for such identified contracts and the KPIs will be monitored during the actual execution of contracts. The World Bank team will provide additional due diligence and independent review of the contract performance of such identified procurements. A fully staffed project team of the EWSC will be responsible for overall project/contract management.

Environmental and Social

34. **ESS2 Labor and Working Conditions.** The project footprint is relatively discrete and does not entail a significant amount of labor. Labor camps are not anticipated. The main labor risks associated with the project are assessed to be related to the potentially hazardous work environment and associated risk of accidents. The draft ESIA identifies increased dust which may lead to respiratory illnesses, increased noise levels, increased HIV/AIDS prevalence, road accidents, injuries, as key environmental and social risks and impact associated with construction phase, workers as well as community health and safety. These risks are well understood and expected to have limited impact as they can largely be avoided, minimized or managed through procedures as set out in the Labor Management Procedure (LMP). The project will hire local unskilled labor when possible for pipeline construction, to minimize the influx of labor and reduce the potential for harm. Other skilled workers from outside the project area will lodge in establishments in neighboring Nhlangano town. To ensure that local communities are hired, contractors will be recommended to formulate a local labor hiring plan and prioritize local employment. A LMP has been developed, which considers the national requirements and the objectives of World Bank's ESS2 and ESS4. A standalone worker-specific GRM (for direct and contracted workers) will be established.

35. **ESS3 Resource Efficiency and Pollution Prevention and Management.** The required building materials will potentially include stones, sand, concrete blocks and timber from licensed suppliers in Eswatini. During the construction phase, air emissions will include exhaust from heavy vehicles and machinery, and dust generated by construction activities. Those most likely to be affected are people living within the proximity of the construction sites. The implementation of mitigation measures such as dust suppression and vehicle maintenance will be applied to minimize the impact of air emissions during construction, and residual impacts are expected to be limited in scope and duration. During the construction phase, noise might likely be generated from the use of construction machinery and vehicle movements. The relatively short-term and small-scale nature of the works suggest that noise levels will not be excessive or cause long-term nuisances. The draft ESIA and related ESMP for Component 1, as well as the generic ESMP for Component 2, include mitigation measures to minimize, prevent and manage pollution associated with proposed civil works and direct impacts of construction, including water, air and noise pollution, as well as minimizing and managing solid waste. In addition, construction activities will generate solid and liquid waste and hazardous waste, such as hydrocarbon oils from construction machinery and vehicles. The waste generated by the construction works will be disposed of at approved sites in compliance with the national laws and regulations.

36. The draft ESIA has provided statistics relating to the flow rates over the last 5 years of the Mkhondvo River, which is the source of water for the project. According to the data, the lowest flow rate for the river in the past 5 years was experienced in October 2018, which was 0.1554m^3/s translating to 4,900,694.4m^3 per year. This lowest minimum flow rate (which is the worst-case scenario in 5 years) can accommodate the allocated quota of 1,866,240m^3 per year. It therefore leaves enough water for downstream use and aquatic life. There is need for calculation of the water balance and allocation for users beyond the abstraction point to be conducted by the detailed design phase of the project and incorporated into the comprehensive ESIA. This should be undertaken by determining the water demand (calculation of users of water) beyond abstraction point and comparing it with proposed allocated quota of 1,866,240m^3 per year to ascertain the downstream impacts associated with abstractions.

37. **ESS4 Community Health and Safety Construction** activities may pose health and safety risks in neighboring communities (especially vulnerable groups). Construction of pipelines and distribution of pipes may cross existing roads and cause temporary closure of roads which could hinder movement of traffic. This disruption in movement may increase road accidents and cause some inconvenience to the local communities as access would be interrupted temporarily. Traffic management plans will be prepared as part of the construction ESMPs to address traffic safety. Community health and safety risks associated with the project will be managed and monitored through the Health and Safety Management Plan, Emergency Preparedness Plans to be included in the Contractor's Environmental and Social Management Plans which will be reviewed and approved prior to commencement of any construction works. Most labor will be recruited locally to minimize potential for harm associated with labor influx. A draft LMP including code of conduct (embedding GBV requirements) has been prepared and forms part of ESMPs and will be embedded in procurement documentation for construction contractors. Given prevalence of GBV/SEA and HIV/AIDS, a GBV Action Plan will be prepared to manage related risks, and a specialized NGO will be engaged for awareness raising of the contractor, workers, and surrounding community. Developing a system at the project level to capture GBV/SEA and workplace sexual harassment related complaints/issues will be under the supervision of the Social Officer who shall identify and engage the relevant stakeholders on GBV/SEA and HIV/AIDS related issues.

38. **ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement.** Draft ESIA findings indicate there will be impacts relating to "Land acquisition, restrictions on land use and involuntary resettlement," and potential project impacts on privately owned land and communal land under traditional governance, but the

numbers can only be identified upon completion of final detailed engineering designs for both Components 1 and 2. These impacts will be caused by the proposed construction of the pipeline, pump house, reservoirs and sanitation facilities. A draft RPF, which complies with the objectives of ESS5 and national regulations, has been prepared by EWSC to guide the preparation of RAP reflecting specific impacts in consultation with project affected people (PAP). No physical and/or economic displacement will occur until required RAPs have been finalized, compensation and resettlement assistance are fully paid to PAP. EWSC will monitor and report on the RAP implementation and ensure that the findings are reflected in the project's quarterly reports to the World Bank.

39. **ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources.** The ESIA will provide guidance on screening and mitigation measures to ensure project activities do not alter or cause destruction of any critical or sensitive natural habitats especially wetlands. The preliminary baseline assessment carried out during identification, confirmed the existing wetlands in Eswatini occupy a relatively small footprint and are not classified as critical or sensitive ecosystems. The environmental risk for ESS6 is therefore minimal and should there be a chance of encountering a wetland during the excavation works, the risk will be managed by applying known mitigation measures to be included in the ESMP.

40. **ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities.** There are no identified vulnerable or marginalized groups with identities and aspirations that are distinct from mainstream groups as defined under the ESF's Indigenous Peoples/Sub-Saharan Historically Under-served Traditional Local Communities standard in the project area of influence. Therefore, this Standard is not currently relevant to the project.

41. **ESS8 Cultural Heritage.** Given the project's context, this Standard is not relevant as the proposed project activities will not affect or involve risks to tangible and intangible cultural heritage. During construction, 'Chance Find' procedures as included in the ESMPs for all activities will be followed to preclude and manage any risk of damaging significant cultural heritage.

42. **ESS9 Financial Intermediaries.** The standard is not relevant to the project as the project will not use financial intermediaries as an instrument for channeling funds to the beneficiaries.

43. **ESS10 Stakeholder Engagement and Information Disclosure.** The Client has prepared and will implement an inclusive SEP proportional to the nature and scale of the project and associated risks and impacts. The SEP and ESIA processes have identified main stakeholders (project affected communities/households, committees from rural water supply schemes, development committees, community-based organizations, local authorities, water vendors, Disabled People Organizations, water and sanitation community management committees, women groups, farmers, local authorities, regional administrators and line departments etc.). The draft ESIA and RPF include enhanced requirements for stakeholder engagement with project affected communities as part of preparation of the ESMP(s) and RAP(s) which will take place in conjunction with detailed designs. The Client has engaged in meaningful consultations with stakeholders and this will continue throughout the project life cycle paying much attention to the inclusion of vulnerable and disadvantaged groups. Engagement of local community liaison officers will be critical for effective stakeholder engagement throughout the project life cycle to ensure that all consultations are inclusive and accessible (both in format and location) and through channels that are suitable in the local context. The SEP and the RPF provide details on the project-specific GRM and considers the existing EWSC procedures (which includes a toll-free customer care line). The GRM is designed to address concerns and complaints promptly and transparently with no implications (cost, discrimination) for any concerns raised by PAP.

Monitoring and Evaluation

44. The PIU will have overall responsibility for the project's M&E. The PIU will prepare quarterly progress reports during project implementation describing the status of all components and activities, progress toward achievement of the PDO, and key performance data from specific project activities that contribute to the project's results as set out in the Results Framework. The outline of the M&E arrangements and responsibilities will be detailed in the POM.

Strategy and Approach for Implementation Support

45. A strategy for implementation support has been developed based on World Bank experience in the Southern Africa subregion and other projects in Eswatini. It aims at providing adequate support to the PIU and EWSC on project implementation and ensuring fiduciary compliance and adherence to World Bank guidelines and policies on fiduciary aspects as well as environmental and social aspects.

46. The project will require substantial support from the World Bank's task team in the early years of implementation. Implementation support will be provided by the World Bank team, consisting of staff with relevant competencies in water supply and sanitation, drought, and disaster risk management. The World Bank team will undertake periodic field missions throughout the project's implementation as required and will provide intensive supervision during the first 18 months of project implementation to ensure adequate support and smooth start of implementation. The Implementation Support Plan will focus on the following:

47. **Support to timely implementation.** The World Bank team will provide support and conduct the required training on the preparation of bidding documents to be launched in the first 18 months of implementation. The immediate priority is to support the PIU to ensure high technical quality of the designs, terms of reference, as well as preparation and launching of bidding processes for a minimum of 30 percent of the loan value.

48. **Coordination.** The World Bank will work with the EWSC and PIU to ensure that effective coordination is established between the agencies that are participating and sharing responsibility on project implementation, the EHD at the MoH, the DWA in the MNRE, and the NDMA.

49. **M&E.** The World Bank team will work with the PIU and agree on the format of the 'Quarterly Progress Report' and M&E systems. Quarterly reports will include information updates on technical and financial progress as well as an update of the monitoring indicators. In addition, the World Bank team will advise the PIU on environmental due diligence to ensure that the Environmental and Social Framework tools, prepared for the project, are adhered to during construction phases.

50. In addition, the World Bank task team will work closely with the respective PIU and involve a group of professional experts who have various required skills and profiles to support the PIU and partner agencies in the implementation of various project activities. Support has been and is currently being provided to the PIU on World Bank's Guidelines in Procurement, Financial Management, as well as Environmental and Social aspects as needed.

Table 1.4. Implementation Support Plan and Resource Requirements

Time	Focus	Skills Needed
First 18 months	• Contract detailed engineering designs and works supervision • Procurement of works and contracts award • Draft terms of reference and contract behavior change and sanitation marketing campaigns (including MHM) • Contract assessment of appropriate sanitation options for different typologies of service provision • Contract technical assistance support • Establishing M&E and reporting systems • Financial management, procurement, and safeguards	A variety of technical skills, such as engineering, utility management, on-site sanitation, behavior change, supply chain management, information systems, project management, fiduciary, and M&E
18–60 months	• Construction works and supervision • Design and implementation of information management systems • Implementation and monitoring of remaining technical assistance support • Financial management, procurement, and safeguards • M&E • Project and contracts closing	A variety of technical skills, such as engineering, utility management, on-site sanitation, behavior change, information systems, project management, fiduciary, and M&E

Table 1.5. Skills Mix Required for the Duration of Project Implementation

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
Task team leader	40	12	Based in DC
Engineer	80	12	International consultant
Institutional and utility expert	10	5	Based in Pretoria
Environmental specialist	10	10	Based in Pretoria
Social specialist	10	10	Based in Pretoria
Climate change specialist	6	6	Based in DC
Financial management specialist	10	10	Based in Pretoria
Financial analyst	6	6	International consultant
Procurement specialist	10	10	Based in Pretoria
Communication specialist	10	5	Based in Southern Africa
Information system specialist	12	6	International consultant

ANNEX 2: DETAILED PROJECT DESCRIPTION

Eswatini Water Supply and Sanitation Access Project

Introduction

1. The Eswatini Water Supply and Sanitation Access Project is designed to improve the potable water supply resilience to the Shiselweni region of the country; improve access to sanitation and hygiene in selected rural and informal settlements of the country; and strengthen the management of disaster risk, RWS, and sanitation.

2. The water sector in Eswatini is one of its most valuable assets, central to the country's long-term development goals, and critical for mitigating against climate risks. The surface water resources of Eswatini are estimated at 4.5 km^3 per year with 42 percent originating from South Africa. The five main river systems in the country are the Komati, Lomati, Mbuluzi, Usutu, and Ngwavuma. The Komati and Lomati river systems are found in the north of the country and both originate in South Africa and flow out of Eswatini back into South Africa before entering Mozambique. The Mbuluzi River rises in Eswatini and flows into Mozambique. The Usutu River together with a number of major tributaries originates in South Africa and flows out into Mozambique, forming the border between Mozambique and South Africa. The Ngwavuma River lies in the south of the country. It rises in Eswatini and flows into South Africa before entering Mozambique. The sixth river system contributing to surface water in Eswatini is the Pongola River, which is found on the South African side south of Eswatini. The Jozini dam, built on the South African side, floods some land on the Eswatini side and its water is available for use in Eswatini.[34] In addition to relying on transboundary rivers and groundwater for its water supply, high water demand makes Eswatini a 'high water stress' country, meaning that the ratio of total annual water withdrawals to total available annual renewable supply averages between 40 percent and 80 percent.[35]

3. Eswatini is an early adopter of the World Bank's Human Capital Project. The HCI combines five measures of human capital into a single index to convey the productivity of the next generation of workers compared to a benchmark of complete education and full health. It is an indicator of the current development success and a metric of a country's foregone development potential. It is made up of five indicators: the probability of survival to age (five), a child's expected years of schooling, harmonized test scores (as a measure of quality of learning), adult survival rate (fraction of 15-year-olds who will survive to age 60), and the proportion of children who are not stunted.

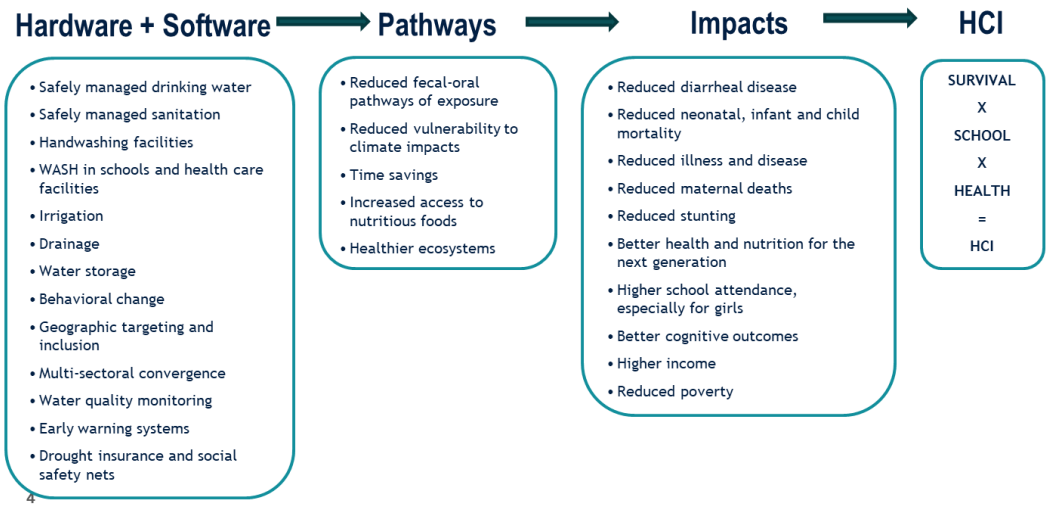
4. Eswatini ranked 124 out of 157 countries for the HCI (score 0.41), slightly above the Sub-Saharan African average (0.4). A child born in Eswatini today will be 41 percent as productive when s/he grows up as s/he could be if s/he enjoyed complete education and full health. In 2017, Eswatini's HCI was lower than the average for its income group.[36]

5. The links between human capital and WASH are numerous, and there is a large body of quantitative and qualitative evidence supporting the crucial role of WASH in human development. Lack of

[34] Manyatsi, Absalom M., and Rex Brown. 2009. *IWRM Survey and Status Report: Swaziland*. Global Water Partnership,
[35] World Resources Institute. https://wriorg.s3.amazonaws.com/s3fs-public/aqueduct_coutnry_rankings_010914.pdf?_ga=2.79169556.1660194554.1553017757-1662036744.1552070501.
[36] https://databank.worldbank.org/data/download/hci/HCI_2pager_SWZ.pdf

water and sanitation infrastructure availability and accessibility, poor water quality, and environmental and hygiene conditions affect people's daily life and productivity. Deprivations in the earliest years of life cause the most harmful health impacts that perpetuate through crucial developmental stages of life, resulting in the greatest effects on human capital. Figure 2.1 outlines the key links between WASH and human capital which are further described in the Eswatini context.

Figure 2.1. Links between WASH and Human Capital



Note: World Bank, Water and Human Capital in Africa Briefing Note - 2018 (unpublished).

6. An estimated 26 percent of children under five in Eswatini are stunted,[37] with stunting more prevalent in rural areas (27 percent) compared with urban (19 percent). The Shiselweni region has the lowest percentage access to improved sources of drinking water and sanitation[38] as well as the highest percentage of stunting at 28 percent. Currently, diarrhea is the most significant cause of death of children under five in Eswatini, accounting for nearly 20 percent of all deaths in this group. Of these, an estimated 69 percent are attributable to unsafe sanitation and 81 percent are attributable to unsafe water source.[39]

Detailed Project Description

7. The proposed project will target improved access to water supply and sanitation and increase the resilience of water supply in the Shiselweni region. It will also strengthen sector institutions and policies for drought and disaster risk management, water resources management, as well as water supply and sanitation. The project will include four components: (1) Resilient Water Access and Management; (2) Improved Sanitation Access; (3) Institutional Strengthening and Project Management; and (4) Contingency Emergency Response Component (CERC).

[37] Swaziland MICS, 2014.
[38] Multiple Indicator Cluster Survey, Central Statistics Office, 2014
[39] Only 56 percent of the population in this region have access to an improved source of drinking water and 19.7 percent have access to improved sanitation. Source: Institute for Health Metrics and Evaluation (IHME). 2016. *GBD Compare Data Visualization*. Seattle, WA: IHME, University of Washington (accessed October 25, 2018), http://vizhub.healthdata.org/gbd-compare.

Component 1: Resilient Water Access and Management (US$28 million)

8. This component will provide financing to increase potable water supply coverage in the Shiselweni region; improve long-term management of water resources, investment planning, and sustainability of water supply service provision; and build resilience to climate and disaster risks, with a focus on droughts.

Subcomponent 1.1: Improved Water Access

9. This subcomponent will provide financing to the ESWC for the expansion of the water supply transmission and distribution systems that will increase potable water access to an additional 18,478 people in rural areas and small towns from Nhlangano to Siphambanweni and interconnect the Nhlangano and Lavumisa water supply systems, including a transmission pipeline, reservoirs, pumping station, and distribution network, as well as the detailed engineering designs and construction supervision activities. This subcomponent will also support the EWSC on efficiency improvements, including areas such as energy efficiency, strategic asset management, and nonrevenue water reduction. Improved access and reliability of water supply also directly affects the population's human capital, through reduced fecal-oral pathways to exposure and time savings affects higher school attendance, in particular for girls who commonly have the highest burden of water collection responsibility.

10. The distribution system will be predominately a zero-emission gravity-fed system, once installed. Because this is a 'greenfield' investment and the baseline scenario is effectively zero emissions (that is, most water is currently abstracted by individuals directly from streams or through hand pumps). This subcomponent has overall positive net greenhouse gas (GHG) emissions (described in more detail in the economic analysis of Annex 3), mainly because of source water abstraction, treatment, and reservoir construction. However, the distribution system will rely on the use of newly installed solar power through a hybrid solar/electricity main photovoltaic pump station. This solar portion of the distribution system will represent approximately 20 percent of the energy needed for distribution (again, the remainder coming from gravity), which will provide a reliable/cost-optimized pumping solution for the sole pumping station in the scheme. The investment in the transmission pipeline will allow for water to be transferred between subregions in Shiselweni, allowing for increased flexibility in water supplies (thus increased resilience to increasingly erratic rainfall) and water security, as in the future water can be transferred between two subregions that tend to suffer from water stress.

11. This subcomponent will result in increased utilization of the existing water treatment plant, to about two-thirds of its design capacity (10,000 m^3 per day). It will finance

- 64 km of mains (61 km – gravity);
- 3 ground reservoirs (3,200 m^3 each);
- 1 ground reservoir (1,000 m^3);
- 1 pumping station (use of solar/photovoltaic hybrid system to be further explored); and
- Pipe network extension of 154 km to cover 26 locations including Makhonza (4,300 people), Mashekesheni and Ngwabe (2,910 people), Mbangweni (3,300 people), Ngelane (2,300 people), Nsongweni (800 people), and Qinisweni (6,500 people), among other locations.

Subcomponent 1.2: Resilient Water Management

12. This subcomponent will focus on improved long-term management of water resources, investment planning, and sustainability of water supply service provision, particularly in rural areas, which will contribute toward increasing these areas' resilience to droughts. The DWA will lead the implementation of this subcomponent.

Subcomponent 1.3: Improving Eswatini's Drought Preparedness and Resilience

13. This subcomponent will concentrate on building resilience to climate and disaster risks, with a focus on the frequency and intensity of droughts. Activities financed under this subcomponent include the development and implementation of a drought monitoring and early warning system, as well as the development of a framework that will allow for a comprehensive countrywide assessment of potential climate and disaster risks. The NDMA will lead the implementation of this subcomponent.

Component 2: Improve Sanitation Access (US$15 million)

14. Given the magnitude of needs related to sanitation in Eswatini and the need for significant resources to address them, the project, in view of resource and capacity[40] limitations as well as the priority accorded to the CPF/Government, has made a strategic choice to focus on a select number of interventions in the Shiselweni region. Interventions that were both replicable and scalable are prioritized so that the project could provide proof of concept of successful WASH service delivery that could be scaled up countrywide. The project support and subsequent investments will be in line with the Citywide Inclusive Sanitation[41] approach, while considering the diversity of settings (urban-to-rural spectrum and domestic-to-institutional service delivery) found in the target region (and other three regions of the country).

15. To enhance the Human Capital Agenda, nutrition-sensitive WASH components have been proposed for this component. Beyond improved access to water supply, these included pursing open defecation free status, improved hygiene practices, behavior change campaigns, and child-centric WASH interventions (baby WASH) in targeted tinkhundla, to pilot such initiatives that, if effective, can be scaled up countrywide. This will include interventions to address food hygiene, clean play environment, management of child and animal feces, and infant and child handwashing. The project will also work closely with other sector programs (for example, in the health and education sectors including specific nutrition-sensitive WASH messages) to mainstream successful WASH interventions and approaches.

16. This component will build on the ongoing work that has been done by the EHD on appropriate technology/sanitation service delivery for rural domestic sanitation to arrive at an open defecation-free corridor in the three tinkhundla[42] (Zombodze, Hosea, and Shiselweni I) that will benefit from improved access to water services. It will not only reduce the incidence of water-related diseases and improve the

[40] Implementation of a comprehensive sanitation program would require substantial resources to address. It also involves a number of stakeholders, which would require a holistic engagement of all, increasing the complexity of implementation arrangements.
[41] https://www.worldbank.org/en/news/video/2017/08/21/citywide-inclusive-sanitation.
[42] Tinkhundla (Inkhundla - singular) are the third level of governance in Eswatini and act as local government institutions. There are 59 tinkhundla in the country.

quality of life of the beneficiaries, but also reduce the volume of untreated fecal sludge ending up in water bodies. The latter in turn helps reduce water stress by avoiding the pollution of water resources, therefore making available resources that otherwise would not have been available.

17. This component will pilot contextually appropriate sanitation solutions in health centers and schools in the Shiselweni region aiming to improve access to infrastructure and improve WASH-related behaviors, to reduce incidences of diarrheal diseases and mortality. Improved sanitation in schools, especially those that meet the needs of women and girls, will lead to increased school attendance.

18. This component will finance a range of sanitation interventions that will enable the achievement of an open defecation-free corridor in the project area, including the following:

(a) Expanding access to domestic sanitation services in the project area.

(b) Assessing and piloting the use of appropriate technologies for on-site sanitation in informal settlements, health centers, and schools.

(c) Piloting child-centric WASH interventions (baby WASH) in households with children under three years old. Interventions will include sweeping and washing of the child's play environment, including play objects, to ensure it is free of child and animal feces; fencing off or caging poultry and livestock so they cannot contaminate the household environment; washing the infant's and child's hands with soap before eating or breastfeeding; using clean and tested or boiled drinking water for preparation of weaning foods; and using cups, not bottles. Many of the proposed interventions will be targeted through the project wide behavior change campaign.

(d) Undertaking complementary sanitation communication campaigns (including MHM), supply chain enhancement, and consistent behavior change programs to create sustained behavior change and buy-in to the project outputs.

(e) Supporting the establishment of a rural water supply and sanitation information system that will assess the functionality of water supply and sanitation services over time to better inform policy formulation, planning, and resource allocation for the provision of better quality and more sustainable water supply and sanitation services.

(f) Providing support to strengthen institutions, policies data collection and planning, and long-term sustainability of sanitation services.

19. The implementation of this component will also contribute to the reduction in the volume of untreated fecal sludge ending up in water bodies, helping reduce water stress by avoiding the pollution of water resources, therefore augmenting the availability of water supply that can be used in situations of water stress. This component will also directly enhance human capital through improved sanitation and hygiene infrastructure and related behaviors, targeting women and children, the most vulnerable people in society.

Component 3: Project Management (US$1.89 million)

20. This component will provide project management support including operating costs, the preparation of progress reports, and independent audits, as well as support on project financial, procurement, environmental, and social management, as needed.

Component 4: Contingency Emergency Response Component (CERC) (US$0)

21. This component will support potential disaster recovery needs by providing immediate response to an eligible crisis or emergency, as needed. This may consist of immediate support in assessing the emergency's impact and developing a recovery strategy or the restructuring of existing or provision of new, IPF and may also include operating costs, supply of critical parts and equipment, minor civil works rehabilitation, supply of fuel, rent of generators, as well as rapid transportation of chemicals and critical parts by express mechanisms.

ANNEX 3: ECONOMIC AND FINANCIAL ANALYSIS

COUNTRY: Eswatini

Eswatini Water Supply and Sanitation Access Project

1. An economic analysis has been carried out for the project, incorporating (a) capital investment and estimated operating costs; (b) time savings to beneficiaries, resulting from some beneficiaries no longer having to access water from relatively distant sources; (c) cost savings for some beneficiaries, resulting from access to more affordable piped water, relative to the cost of water delivered by tanker trucks; (d) productivity and cost benefits from reduced incidence of diarrhea, including reductions in mortality; (e) improved school attendance for girls because of improved sanitation facilities; and (f) consumer surplus, generated from the additional water consumption relative to current consumption. An EIRR was calculated based on the stream of costs and benefits over a period of 30 years (four-year implementation period plus 26-year operational period), as well as the investment's NPV, based on a discount rate of 4 percent. [43]

2. The economic analysis is based on estimated capital costs expensed over a four-year implementation period, annual operating costs associated with the treatment and delivery of water to the beneficiaries, and the assumptions as shown in Table 3.1.

Table 3.1. Economic Analysis – Assumptions

	Assumption	Comments
Beneficiaries		
Beneficiary population - water investments in unserved areas and sanitation investments and program	18,478	2017 population, annual increase of 0.7 percent
Beneficiary population - increased supply in already served areas	2,500	Approximately 500 households, average household size of 5
Beneficiary population - sanitation investments and program	19,495	—
Adolescent and teenage schoolgirl population in target areas	2,500	—
Pre-project Water Access and Consumption		
Unserved areas (90 percent of unserved households)	25 L/person/day Average cost of E 6/m^3 for access and treatment	90 percent rural water service, boreholes, hand pumps, and surface water sources
Time spent accessing water	100 min/household/day	—
Served areas and 10 percent of unserved households	65 L/person/day	Tanker truck provision during dry season (3 months/year) at E 128/m^3; storage at household
Diarrheal Illness		
Children under 5 years of age	12.7 percent of	—

[43] Based on two times the projected per capita growth rate of 2 percent for Eswatini, and consistent with the *Guidance Note on Discounting Costs and Benefits in Economic Analysis of World Bank Projects, 2016*.

	Assumption	Comments
	population	
Incidences of illness for children under 5	3 times/year	—
Direct monetary costs of treatment	E 140	—
Additional economic costs of treatment	E 70	—
Productivity losses related to the child's illness	1.5 days/incidence	—
Incidence of illness for children over 5 and adults	1/year	—
Direct monetary costs of treatment	E 42	—
Productivity losses related to illness	1 day/incidence	—
		—
Inadequate Sanitation in Schools		
Adolescent and teen female students in target areas	2,500	—
Days lost because of inadequate sanitation	3/month	—
Value of productivity losses	E 57/day	Based on E 1,200/month (US$85.7/month, or US$4/day)
Post-Project Results		
Households with individual connections in previously unserved areas	50 percent at end of project	2 percent increase/ year post-project Remaining households access water through kiosks
Consumption for households with individual connections	40 L/person/day	6 m^3/household/month
Consumption for households using public kiosks	33 L/person/day	5 m^3/household/month
Time spent accessing water for households using public kiosks	20 minutes/household/day	—
Cost of water through individual connections	E 21/m^3	Based on current tariffs and 6 m^3/month consumption
Cost of water through public kiosks	E 0.25 / 20 L	Equivalent to E 12.5 m^3
Reduction in diarrheal illnesses	One-third reduction	—
Average years of life lost per person because of diarrhea	7.6	—

3. Applying the abovementioned assumptions, the analysis indicates an EIRR of 5.8 percent. The NPV, calculated using a discount rate of 4 percent, is calculated to be US$5.2 million.

4. The majority of the benefits—an estimated 52 percent—derive from expected reductions in the amount of time expended by the currently unserved populations. The next largest benefit components derive from improved female school attendance (19 percent) and lower costs to purchase water (18 percent). Cost savings particularly benefit those households who currently have limited or no service during the dry season and who need to augment supply through purchases from tanker trucks, and for the estimated 10 percent of households in rural areas who currently purchase water from tanker trucks. In contrast, households who currently use rural boreholes, hand pumps, or untreated surface water are expected to pay somewhat more for water—although with better quality and at higher consumption

levels. The remainder of project benefits derive primarily from reductions in productivity, direct expenses, and mortality related to diarrheal diseases.

5. There are likely to be other, non-quantifiable benefits to the project, in particular benefits related to reductions in waterborne diseases during times of reduced water resources; reduced levels of stunting; reduced neonatal, infant, and child mortality; and reduced maternal mortality. The proposed investments provide insurance against: (a) inadequate water sources for both the already served areas (which are connected to piped water systems but that experience intermittent supply, particularly during the dry season and during droughts) and for unserved areas; (b) serious water shortages; and (c) deterioration of water quality during the dry season and during droughts. The costs related to drought (and the benefits from proactively mitigating against the impacts of droughts) are particularly unpredictable and have not been included in the economic analysis. In fact, the project will aim to gain a better understanding of these specific drought-related costs/benefits through analytical work supported in Component 1.

6. The project's economic analysis incorporates the GHG emissions estimates generated over a 26-year period. The GHG emissions accounted for those associated with the infrastructure activities provided under the project. For Component 1, the net GHG emissions are attributed to the abstraction and treatment of water to be conveyed through the pipeline, as well as the reservoir construction for water storage, totaling 7,511 tCO_2eq over the economic lifetime of the project For Component 2, the net GHG emissions are primarily attributed to the fugitive emissions from the septic systems and open pit latrines, totaling 1,837 tCO_2eq over the economic lifetime of the project. The project's estimated generated gross emissions are 12,720 of tCO_2eq over 26 years, with net emissions reaching 9,471 tCO_2eq. This translates into approximately 231 tCO_2eq 'Scope 1' gross emission generated by the project on average per year. These estimates were monetized using the shadow price of carbon according to the World Bank's guidelines with a baseline minimum value of US$40 and a maximum of US$80 per tCO_2eq in baseline year 2020, with an average rate of increase of 2.26 percent per year. The values estimated from these net emissions resulted in an average decline in the NPV of the project of US$285,000, discounted at 4 percent. Considering the estimates of positive, but low, additional GHG emissions resulting from the project, the EIRR was reduced to 5.74 percent (using the low value for the shadow price of carbon) and 5.68 percent (using the high value).

7. **Sensitivity analysis.** A sensitivity analysis was undertaken using the key variables of (a) number of beneficiaries, including rate of population growth; (b) post-project water consumption; (c) post-project reduction in diarrheal diseases; (d) increases in investment costs; and (e) increases in operating costs. The results are as presented in Table 3.2.

Table 3.2. Sensitivity Analysis

	EIRR (%)	NPV (at a discount rate of 4%) (US$, millions)
Base case	5.8	5.2
10 percent reduction in beneficiaries	–13.5	–16.8
20 percent reduction in post-project water consumption	5.3	3.7
Reduction in households with individual connections (from 50 percent to 30 percent)	6.3	6.9
Increase in households with individual connections (from 50 percent to 70 percent)	5.3	3.6

	EIRR (%)	NPV (at a discount rate of 4%) (US$, millions)
20 percent reduction in diarrheal diseases (versus 33 percent in base case)	5.4	3.9
20 percent increase in investment costs	4.2	0.7
20 percent increase in operating costs	5.4	4.1
20 percent increase in both investment and operating costs	3.9	- 0.4

8. From the above, the returns to the project are relatively robust to most variables, with the notable exception of the number of beneficiaries—where even a 10 percent drop in the project beneficiaries results in a negative EIRR and NPV.

9. The other noteworthy result of the sensitivity analysis is the improvement in the rate of return if a lower percentage of project beneficiaries access water through kiosks. While there are some losses in the value of beneficiary time spent accessing water through kiosks, this is heavily outweighed by (a) lower beneficiary costs in accessing water through kiosks than through individual connections and (b) lower operating costs to the EWSC, which requires fewer staff and maintenance expense for kiosk sales than for individual connections.

Financial Analysis

10. The financial analysis consists of two parts: (a) an overview of the EWSC's current financial status and (b) an estimate of the financial impact of the project on the EWSC assuming that the assets remain under the ownership and management of the EWSC.

Financial Overview of EWSC

11. The EWSC is the state-owned national water company of Eswatini, with a mandate to provide water and sewerage services in urban areas of the country. It is a well-run utility with a focus on providing sustainable services in its target areas; in addition, in support of the Government's strategy to provide improved water services to 100 percent of the population, it has begun to extend services to areas outside the urban boundaries, to areas technically defined as rural. Its management has a strong understanding of the importance of the financial sustainability of the company and the impact of large capital projects on the company's bottom line. This is reflected in the sources of financing for the previous capital projects, which include a mix of commercial borrowing for smaller projects and capital grants from the Eswatini Government for larger investments. That said, the EWSC has taken on long-term debt obligations for ongoing capital projects—EUR 19 million from the European Union for the ongoing Siphofaneni water supply scheme and US$27 million from the African Development Bank for the Ezulwini Water and Sanitation Project. In addition, it is considering an approximately E 200 million (US$14.3 million) loan from the Development Bank of Southern Africa. These commitments do not yet appear on the EWSC's balance sheet; however, the EWSC does not have projections for its debt liabilities beyond the short term.

12. As detailed in the Financial Analysis section, the EWSC is financially stable, in part due to charging tariffs that enable it to cover its full operating costs, depreciation on assets it has financed, and interest costs. While residential tariffs are subsidized to some degree by commercial tariffs, residential tariffs are still generally higher than tariffs observed in many other countries in Sub-Saharan Africa. Households with

individual connections (in-house connections or yard-taps) are currently charged a flat 'basic' charge of E 68.2 per month, plus a charge of E 58.3 per month for any consumption up to 10 m^3 per month. Amounts consumed above 10 m^3 per month are charged on a per cubic meter basis. New residential customers with individual connections in the project areas would therefore be responsible for monthly charges of E 126.5, or approximately US$9 at the current exchange rates. Tariffs charged for kiosk usage are noticeably less than for residential connections – E 7.5 per m^3 (US$0.54 per m^3). However, it is important to note that this is the tariff charged to kiosk operators, who in turn charge higher rates to end customers. The standard charge to end customers is E 0.25 per 20 liters, or approximately E 12.5 per m^3.

13. In terms of affordability, based on monthly household income of E 1,200 (US$85.7), the monthly charge for an individual connection would be approximately 10 percent of income—seemingly well above the accepted affordability threshold of 5 percent of income. That said, in a 2015 survey on water access, affordability, and tariffs, 88 percent of rural and peri-urban respondents without a water connection said that if they were given the option to connect to a private connection, they would do so, indicating a high willingness to pay for individual piped water service.[44] In contrast, for households accessing water through kiosks, 5 m^3 (the assumed monthly consumption) would cost approximately E 62.5 per month, or US$4.50 equivalent. This comes to approximately 5 percent of a monthly household income of E 1,200 and can be generally considered affordable

14. Similar to other countries in southern Africa, Eswatini has suffered in recent years from a serious and prolonged drought, during which water resources in some areas were nearly entirely depleted, and the EWSC had to ration water usage, including in the capital Mbabane. Annual financial reports for the fiscal years ending March 31, 2016, 2017, and 2018, have been reviewed, as well as operating and financial information for the first nine months of FY2019, and it appears that the effects of the drought continue to be felt. It may be that reduced consumption has become the norm—particularly among commercial and light industrial enterprises, which provide the large majority of the ESWC's revenues—despite the end of the drought.

15. In spite of the drought, which resulted in lower overall water treatment and sales in FY2017 compared to FY2016 (which in turn was lower than in FY2015), the EWSC was able to maintain both a positive operating ratio and net profit for all the years under review. The EWSC reported approximately 46,700 active water connections as at the end of 2018, of which 92 percent were residential, and approximately 11,750 were sewerage connections. The average domestic monthly consumption was calculated to be 13.7 m^3 per connection, while average nonresidential consumption is estimated to be 154 m^3 per connection. Annual water sales in FY2018 were reported to be 12.4 million m^3, which are still below FY2016's 13.7 million m^3. The EWSC reports nonrevenue water of 28 percent, which works out to an annual production in FY2017 of 17.2 million m^3.

16. The EWSC's 2018 billed water revenues were E 218.8 million (approximately US$15.63 million equivalent), with additional water service revenues (fixed charges, service charges, and penalties) providing an additional E 52.4 million, and sewerage-related revenues providing an additional E 59.9 million, resulting in total operating revenues of E 335.1 million (US$23.9 million). Direct operating expenses (not including depreciation, interest, or provisions for bad debt) totaled E 294.4 million (US$21

[44] The survey reported that 73 percent of respondents live below the poverty line of US$1.25 per person per day, and 42 percent reported household expenditures below E 2,000 per month.

million), resulting in a net operating profit of E 40.7 million (US$2.9 million) and an operating ratio (operating revenues/direct operating expenses) of 1.14.

17. Incorporating miscellaneous income (including noncash income that reflects the amortization of past capital grants from the Government), depreciation, interest revenues and expenses, and provisions for bad debt resulted in net earnings of E 18.5 million (US$1.32 million). After-tax profit (incorporating a credit for a deferred tax adjustment) was a reported E 25.8 million (US$1.84 million).

18. It is important to note that the EWSC—unlike many utilities in the region—appears to have a positive culture of revenue collection. While the EWSC did not report a collection ratio, it set aside E 14.2 million as provisions for the impairment of receivables in FY2018, or about 4 percent of billed revenues. However, its gross receivables appear to have increased significantly more, by E 41.1 million, or 12 percent of billed revenues. This would indicate a collection ratio of 88 percent, which is a deterioration from previous years. The EWSC reports that collections declined during the drought due to deteriorating levels of service and that new service areas—which are outside urbanized areas—tend to have lower collections and greater customer disconnections because of nonpayment.

Table 3.3. EWSC's Key Operating and Financial Figures for FY2016 through FY2019

	FY 2016	**FY 2017**	**FY 2018**	**FY 2019** (projected)
Operational Information				
Active water service connections	Not available	40,400	43,000	46,800
Active sewerage connections	Not available	10,900	11,750	Not available
Total water production (m^3/day)	Tbd	45,090	47,130	51,450
Total water sales (m^3/day)	37,670	32,470	33,930	34,250
Nonrevenue water (%)	Tbd	28	28	28
Total staff	532	530	543	543
Staff per 1,000 connections	n.a.	13.1	12.6	11.6
Financial Information (E, millions)				
Water sales revenues	195.5	196.6	218.9	247.0
Wastewater revenues	51.6	53.9	59.9	65.5
Other service-related revenues	40.4	46.6	52.4	59.2
Total Operating Revenues*	**295.2**	**298.7**	**335.1**	**377.7**
Water treatment expenses (non-staff)	78.8	85.0	100.2	101.2
Other direct operating expenses	167.8	158.9	194.2	193.0
Total Direct Operating Expenses	**246.6**	**244.0**	**294.4**	**294.2**
Direct Operating Ratio (Operating Revenues/Direct Operating Expenses)	**1.20**	**1.22**	**1.14**	**1.28**
Provisions against bad debt	14.5	10.9	14.3	30.6**
Depreciation	31.8	41.5	45.3	56.0
Net interest revenue	12.7	10.0	7.0	2.9
(of which interest expense)	5.6	8.4	7.2	7.6
Net Earnings***	**33.9**	**41.6**	**18.5**	**33.0**
Tax expense	5.7	5.6	(7.3)	2.5
Net Profit	**28.2**	**36.1**	**25.8**	**29.7**
Debt Service Coverage Ratio (DSCR)				
Net revenues available for debt service	24.7	32.4	26.4	43.8

	FY 2016	FY 2017	FY 2018	FY 2019 (projected)
coverage+				
Interest expense	5.6	8.4	7.2	7.6
Debt principal repayment	12.0	12.3	16.1	16.1
DSCR	**1.40**	**1.56**	**1.13**	**2.88**

Note: * Includes revenues from industrial effluent charges. / ** Estimate for FY2019 if all uncollected revenues were provided for. / *** Includes noncash revenues representing the Government's contribution to capital investments. / + Estimated by using operational revenues less direct operating expenses and taxes less provisions for uncollected revenues or less estimated cash collections.

19. The abovementioned information is all largely positive—a growing customer base, stable revenues despite constraints on water resources, acceptable water loss rates, good controls on operating expenses, and manageable debt obligations. However, the ESWC faces the following challenges:

(a) Risk of lower commercial and industrial water consumption and sewerage usage. This is in part because of client reactions to water shortages during the drought (for example, usage of private boreholes) and highly differentiated fees and tariffs for nonresidential customers. There is a high cross-subsidy between nonresidential and residential customers that may not be sustainable in the long term.

(b) Pressure to extend services to lower density peri-urban and quasi-rural areas where (i) residents are likely to consume lower levels of water (and may not be able to afford service) and (ii) operating expenses, because of low density and varied terrain, are likely to be noticeably higher than current, companywide expenses. As tariffs are set for the country as a whole (instead of by region), customers in lower-cost regions will effectively subsidize customers in higher-cost regions, and customers in denser service areas will effectively subsidize customers in peri-urban and rural areas.

(c) Increasing rates of nonpayment.

(d) The abovementioned three trends are likely to lead to a need for higher tariffs, which may, in turn, introduce a vicious circle of lower consumption, commercial customer retrenchment, and higher tariffs.

(e) High operating overhead expenses and relatively high staffing levels.

(f) Ongoing risk of drought- and climate-related water shortages.

Project Financial Analysis and Expected Impact on the EWSC

20. The proposed investments will take place in the Shiselweni region of Eswatini, which correspond to the EWSC's Southwest operational region. The project team reviewed the EWSC's regional operational and financial information to better estimate likely consumption patterns and operational expenses. While some region-specific information was unavailable at the time (for example, water loss rates and collection ratios), it was clear that the Southwest region is the smallest of the EWSC's operational regions, with less than one-tenth of EWSC's total connections. While it has a relatively healthy cost-recovery ratio, this is largely due to the lack of sewerage infrastructure and operations in the region, which lowers its overall cost structure relative to other regions. A financial analysis of the project has been undertaken based on project expectations and observed operational costs.

Table 3.4. Financial Analysis – Assumptions for Expected Impact on the EWSC

	Project Assumptions	Comments
Project implementation period	three years	
New households served related to project investments	3,824	0.7 percent annual growth in population
Metering ratio for new connections	100%	
Share with individual connections	50%	Most residential connections are expected to be yard taps; 50 percent of households in new service areas expected to use public kiosks; very few commercial connections are expected.
Existing connections expected to benefit from project investments	500	0.7 percent annual increase
Nonrevenue water in service area	15%	Lower than existing due to new infrastructure; increasing 1 percentage point annually.
Average monthly household consumption for new connections	6 m^3/month	Assumption for consumption using yard taps. 5 m^3/month for consumption using kiosks.
Marginal cost of water treatment	E 3.7/m^3 produced	2019 cost; 2 percent annual inflation
Water distribution and commercial costs	E 11.3/m^3 produced	2019 average cost; 2 percent annual inflation
Water billings	E 15.2/m^3/produced	2 percent annual inflation
Collection ratio	90%	—

21. Given the existing production, distribution, and commercial expenses in the EWSC's Southwest operational region, and revenues constrained by the lack of expected industrial and commercial customers, there is expected to be ongoing operational losses related to the project investments throughout the project period. These are presented in Table 3.5.

Table 3.5. EWSC's Operational Results with the Project

	2023	2028	2033	2038	2043
Project-related household water connections	1,930	2,130	2,350	2,590	2,860
Project-related households using kiosks	1,930	1,860	1,780	1,680	1,570
Additional water production (m^3/day)	870	960	1,070	1,110	1,160
Water sales (m^3/day)	740	770	800	835	870
Annual water billings (E, millions)	4.6	5.7	6.7	8.0	9.5
Annual collections (E, millions)	4.0	4.9	5.8	6.9	8.3
Annual operating expenses (E, millions)	4.7	5.7	7.0	8.4	10.1
Net operating revenues (losses) (E, thousand, cash basis)	(684)	(806)	(1,146)	(1,453)	(1,835)
US$ equivalent (US$ = 14 E)	(48,850)	(57,500)	(81,900)	(103,800)	(131,100)
Losses as a percent of regional (Southwest) net revenues	8	9	13	15	18

22. These results indicate that the EWSC's performance would decline as a result of the project—it is not a commercial project per se but is the one undertaken to expand and improve service to underserved

areas. In addition, as the percentage of households that are served by individual connections grows, the larger those losses are. This is because of the higher operating costs related to operating and maintaining the network and managing the commercial relationship with individual customers.

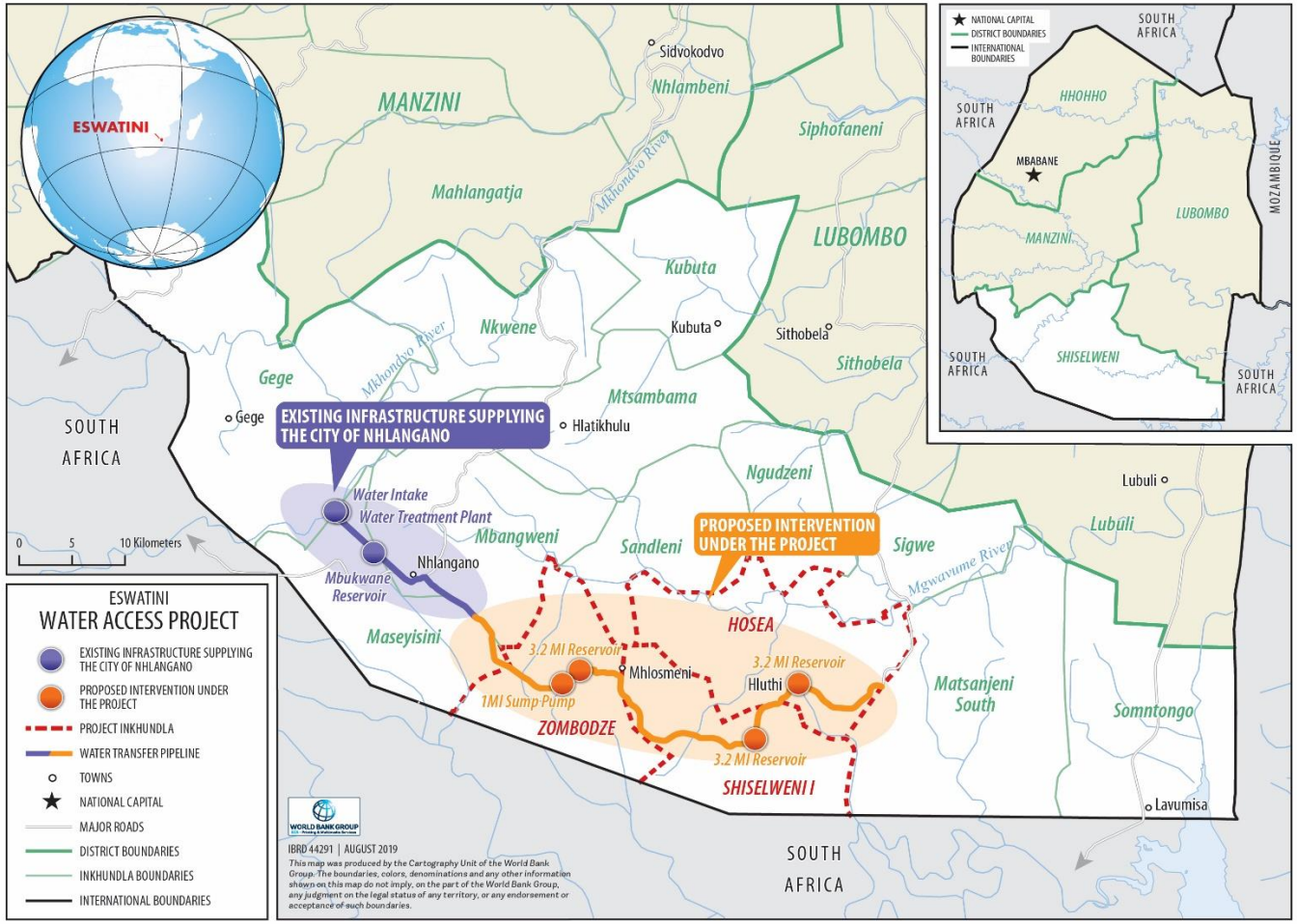
23. Projections of the EWSC's overall operations and financial results are presented in Table 3.6. Note that no non-project-related changes in operations are incorporated into the projections. Revenues and costs are assumed to increase at an annual rate of 2 percent.

Table 3.6. EWSC 'With Project' Financial Results

	2023	2028	2033	2038	2043
Operational Information					
Active water service connections	54,260	57,130	60,160	63,350	66,720
of which, project related	1,930	2,130	2,350	2,590	2,860
Active sewerage connections	12,230	12,850	13,510	14,200	14,920
Total water production (m^3/day)	55,660	58,550	61,590	64,720	68,020
Total water sales (m^3/day)	39,090	41,080	43,170	45,360	47,670
Total staff (based on existing staffing ratio)	610	640	675	710	750
Financial Information (E, millions)					
Water sales revenues	329.8	382.7	444.1	515.4	598.1
Wastewater revenues	80.6	93.5	108.5	125.9	146.0
Other service-related revenues	73.8	85.6	99.2	118.5	137.4
Total operating revenues*	**484.1**	**561.8**	**651.8**	**756.3**	**877.5**
Total direct operating expenses	**343.0**	**391.1**	**446.3**	**509.4**	**581.7**
Direct operating ratio (operating revenues/direct operating expenses)	**1.41**	**1.44**	**1.46**	**1.48**	**1.51**
Uncollected revenues	51.7	60.0	69.6	80.8	93.8
Depreciation	62.4	67.7	65.2	63.8	63.8
Interest expense	10.4	9.8	8.9	7.9	7.6
Net earnings (pre-tax)*	**128.9**	**145.0**	**165.9**	**192.4**	**225.0**
Net revenues (pre-tax) – cash basis **	**89.5**	**89.5**	**110.7**	**135.9**	**166.1**

Note: * Net revenues do not include an expense related to uncollected revenues.
** Operational revenues less direct operating expenses less uncollected revenues.

ANNEX 4: MAP


ESWATINI
MANZINI
Sidvokodvo
Nhlambeni
Siphofaneni
Mahlangatja
Mkhondvo River
LUBOMBO
Kubuta
Nkwene
Kubuta
Sithobela
Sithobela
Gege
Mtsambama
Gege
EXISTING INFRASTRUCTURE SUPPLYING THE CITY OF NHLANGANO
Hlatikhulu
SOUTH AFRICA
Water Intake
Water Treatment Plant
Ngudzeni
Lubuli
Mbangweni
Sandleni
PROPOSED INTERVENTION UNDER THE PROJECT
Sigwe
Mbukwane Reservoir
Nhlangano
Mgwavume River
Maseyisini
HOSEA
3.2 Ml Reservoir
Mhlosmeni
3.2 Ml Reservoir
Hluthi
Matsanjeni South
1Ml Sump Pump
ZOMBODZE
Somntongo
3.2 Ml Reservoir
SHISELWENI I
Lavumisa
SOUTH AFRICA
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ESWATINI
WATER ACCESS PROJECT
EXISTING INFRASTRUCTURE SUPPLYING THE CITY OF NHLANGANO
PROPOSED INTERVENTION UNDER THE PROJECT
PROJECT INKHUNDLA
WATER TRANSFER PIPELINE
TOWNS
NATIONAL CAPITAL
MAJOR ROADS
DISTRICT BOUNDARIES
INKHUNDLA BOUNDARIES
INTERNATIONAL BOUNDARIES
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NATIONAL CAPITAL
DISTRICT BOUNDARIES
INTERNATIONAL BOUNDARIES
SOUTH AFRICA
HHOHHO
MBABANE
MOZAMBIQUE
LUBOMBO
MANZINI
SHISELWENI
SOUTH AFRICA