Combined Project Information Documents / Integrated Safeguards Datasheet (PID/ISDS)

Appraisal Stage | Date Prepared/Updated: 21-Jul-2016 | Report No: PIDISDSA19547

BASIC INFORMATION

A. Basic Project Data

Country	Project ID	Project Name	Parent Project ID (if any)
Botswana	P160911	Botswana Emergency Water Security and Efficiency Project	
Region	**Estimated Appraisal Date**	**Estimated Board Date**	**Practice Area (Lead)**
AFRICA	19-Sep-2016	08-Dec-2016	Water
Lending Instrument	**Borrower(s)**	**Implementing Agency**	
Investment Project Financing	Ministry of Finance and Development Planning	Ministry of Minerals, Energy and Water Resources, Water Utilities Corporation	

The processing of this project is applying the policy requirements exceptions for situations of urgent need of assistance or capacity constraints that are outlined in OP 10.00, paragraph 12.

Yes

Financing (in USD Million)

Financing Source	Amount
International Bank for Reconstruction and Development	160.00
Total Project Cost	**160.00**

Environmental Assessment Category

A - Full Assessment

Decision

Track II-The review did authorize the preparation to continue

Other Decision (as needed)

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B. Introduction and Context

Country Context

1. Botswana, an upper middle-income country, has been one of the world's fastest growing economies. Since independence, economic growth has been sustained, averaging 8.7 percent between 1966 and 2008 –among the highest of any country over this period. GNI per capita has steadily increased

from power purchasing parity US$ 4,935 in 1980 to US$14,792 in 2013, driven largely by diamond exports. This heavy reliance on commodities nonetheless renders the country vulnerable to international market fluctuations, as experienced during the global financial crisis in 2009 and, more recently, following the collapse of commodity prices in 2015. Combined with severe El-Nino related droughts affecting Botswana and its regional trade partners, lower exports receipts and higher food import costs caused GDP growth to turn negative in 2015 (-0.3%), and entailed large budgetary shortfalls (a fiscal deficit of 6.3% of GDP in 2015). Thus, Botswana has become increasingly resource constrained and in a weaker position to finance the required infrastructure investments to address water shortages arising from the drought.

2. Over the past few decades, good governance and prudent macroeconomic and natural resource management have led to impressive economic and social gains. Botswana's efforts to redistribute wealth through education, health programs and infrastructure development, have contributed to a substantial decline in poverty levels. Between 2003 and 2010 the share of the population below the national poverty line fell from 30.6 to 19.4 percent. Rural poverty fell furthest— by around 21 percentage points, during a period which also experienced significant rural-urban convergence. However, vulnerability remains particularly acute in rural households that depend on subsistence agriculture – food inadequacy affected an estimated 38.8 percent of the population in 2014. According to staff estimates, the drought in 2015 reduced by 2.5% the purchasing power of the bottom 40% of the population through its impact on beef production and imported maize prices. These recent economic shocks and chronic drought, may have put another third of the population (classified as vulnerable but non-poor in the 2015 Poverty Assessment) at greater risk of falling into poverty.

3. The Government intends to sustain its positive poverty reduction trajectory by diversifying sources of growth. Through the realization of sustainable employment creation, it also aims to achieve more inclusive socio-economic outcomes. It will place emphasis on infrastructure development, including water and sanitation which are vital to private sector led commercial and industrial development; as well as livelihoods and human development. Given high and rising levels of water stress, chronic drought, and climate variability, achieving these objectives will require attention to long term water security. The latter is also essential for Botswana to maintain its positive trend towards meeting SDG targets in many areas.

4. Over the past few decades, Botswana has made significant investments in achieving universal water supply. Botswana achieved three of four MDG targets for both water and sanitation: around 95 percent of the population now have access to an improved drinking water supply, and 79 percent of the urban population have access to improved sanitation. However, rural sanitation still lags behind—42 percent of rural households have access to adequate sanitation[1]. Despite this steady progress, access to an improved service is not assured as many communities are served by systems that are affected by chronic drought. In addition to the identification and development of new water sources, the sector is therefore scaling up measures to improve water resource management and mitigate droughts, including: water conservation, demand management, water loss reduction, and increased wastewater re-use.

5. Situations of Urgent Need of Assistance. In July 2015 Botswana declared a drought emergency following poor or failed rains across most of the country. The meteorological department rated the

[1] Joint Monitoring Program, 2015

drought extremely severe– "the worst in the last 34 years". A follow up assessment conducted in early 2016, extended the drought emergency for a second year, at a lower level of severity (Press Release of July 14, 2016).

6. Since the onset of the 2015 drought, "hotspots" in the central, southern and western parts of the country have been significantly impacted. In addition to dams, rivers and well fields running dry, extremely low levels of rainfall (and or late rains) have led to significant loss of crops – a 70 percent decline in cereal crop; and declining grasslands – which have affected both livestock (20% mortality rate) and wildlife[2]. Nationwide, dam levels also fell below 20 percent of design capacity – the Gaborone dam level fell as low as 1.6 percent, the lowest since 2000. Ground water recharge rates (less than 5mm year) have also been affected, and boreholes in several wellfields have run dry or become saline. As a result, water rationing arrangements (3 times a week for 8 hours during the peak period) are in place for most large settlements in the country. More than 20 settlements are now being served by water bowsers at high cost to WUC, and in addition many households have installed storage tanks, pumps and are purchasing water from private water vendors.

7. Droughts in Botswana are chronic— six of the last ten years have been moderately to severely dry. Acute events, such as the current drought, therefore aggravate the water balance. In order to mitigate drought impacts and adapt to climate change, urgent measures are required to strengthen resilience and achieve water security. The upcoming National Development Plan (NDP) 11, prioritizes measures to improve long term water security. The Government intends to invest USD 12 billion over the 2017-23 period in a combination of the measures identified above. This includes an emergency water supply program to which this Project will contribute USD 160 million.

8. NDP priorities to be supported by the Project include investments in water supply availability to alleviate immediate drought impacts and improve resilience; water source protection and wastewater reuse; and strengthening of water resources management, groundwater monitoring, conservation, demand management and loss reduction measures. To improve long term water security, NDP 11 will advance the study and design of potential inter-basin transfers from sources such as the Lesotho highlands and Chobe-Zambezi schemes.

Sectoral and Institutional Context

9. Botswana has a semi-arid climate. Rainfall levels are low (at 250 - 450mm), unevenly distributed (with 5 year deficits recorded in some areas), and highly variable from year to year (30% below normal in 2015). Most rivers are seasonal, and despite limited availability, groundwater abstraction has increased from less than 150 Mm3 in 1990 to 195Mm3 in 2013/14. Groundwater now accounts for three quarters of the country's water requirements, particularly in Western Botswana, where groundwater is the sole source of water. In general, water resources are constrained, fragile, and subject to many competing demands: in 2013 agriculture and mining were the main users, accounting for 42% and 23% respectively, while domestic consumption accounted for 25%. As water is central to Botswana's continued economic success and sustained development gains, demand is projected to rise

[2] Food and Agriculture Organization, 2016

further[3]. However, in the context of chronic drought and climate change, managing rising demand— to reduce pressure on already constrained resources, is a priority.

10. In order to offset growing reliance on groundwater, the government has constructed a number of dams (e.g. Dikgatlhong, Thune and Lotsane) and has developed several water transfer schemes including the 400km-long North-South Carrier (NSC-1), which transfers water from the Motloutse River in the North-East to major villages and towns along the eastern corridor of Botswana. This is being expanded from its existing 25Mm3/year capacity, and it is proposed that a second phase (NSC 2) will deliver an additional 45Mm3 per year. There are also plans for a NSC-3 to abstract water from the Chobe-Zambezi, and the Government is studying other long term options, such as for importing water from the Lesotho highlands and desalinating sea water in Windhoek, Namibia. These surface water systems are gradually being inter-linked with groundwater systems to allow aquifers to recover, and provide for alternate use or back up supply.

11. This emphasis on improving water security is critical, as Botswana is one of four Southern Africa nations that could become "highly water stressed by 2040" under a business as usual scenario[4]. Climate change projections indicate a rise in temperature of up to two degrees Celsius (January 2016 was the hottest month on record); a decline in river flows of up to 13 percent by 2015[5]; and a reduction in rainfall of about 3 to 9 percent. A climate risk assessment carried out by the Bank in 2010 (using multiple measures, over multiple temporal scales) concludes that there is a definite bias towards increased droughts, and groundwater recharge (less than 5mm per annum) is likely to decline. High open-water evaporation rates, ranging from 1,900 mm to 2,200 mm per annum (FAO 2009) also contribute to relatively low annual rates of groundwater recharge and surface runoff, thus diminishing opportunities for storage[6]. Measures to protect, conserve and manage groundwater sustainably are therefore critical.

12. Climate variability is already a major constraint to the agricultural and mining sectors as crop production is rainfall dependent and only a small portion of land is under irrigation (around 1 800 ha; BNWMP2). As a result agricultural productivity varies from year to year. In 2015 and 2016, the drought caused a 44% drop in cereal production (including a loss of 70% for maize)[7]. In addition, livestock losses due to the drought are estimated at 20%. Climate variability is also a threat to Botswana's current high level of household access—the drought water has led to extensive rationing (in some settlements water rationing has been in place for more than 3 years). As the Government moves to diversify its economy, closer attention to water resource management will be essential, particularly for water intensive sectors. Climate change adaptation can help avoid a range of adverse (direct and indirect) economic impacts.

13. Substantial investments are required to align water security requirements with the growing demands of Botswana's increasingly prosperous population. Greater rainfall variability and declining

[3] Water demand is forecast to reach 285.8 cubic mega meters (Mm3) a year by 2030 (compared to only 193.4 Mm3 in 2000

[4] Baseline water stress measures competition for surface water calculated as withdrawals over renewable supply. The Water Resources Institute ranking of 147 water stressed countries globally Indicates that water stress levels for Botswana, Namibia, and South Africa are expected to reach between 40-80 percent by 2040. Namibia and Botswana are the two countries in the ranking expected to face the greatest increase in water stress.

[5] Botswana's Second National Communication to the United Nations Framework Convention on Climate Change (UNFCCC), December 2011.

[6] Botswana Climate Variability and Change: Understanding the Risks. World Bank, November 2010.

[7] Food and Agriculture Organization, 2016

groundwater sustainability suggest that additional investment in surface water infrastructure will be a priority, including: additional storage and transmission, interlinking surface and groundwater supplies; and developing water transfer schemes. As many settlements are small and scattered, water must be transported over long distances and at high cost. This compounds the task of delivering services and responding to recurrent droughts. The National Development Plan (2016-2023) therefore aims to invest considerable resources in addressing the ongoing drought emergency, ensuring that water resources are well managed, and improving water security through large water transfer schemes.

14. Recognizing the importance of water for Botswana's development, in 2009 the GoB initiated a Water Sector Reform Program (WSRP) with the intention of leveling services for all water users in the country through a uniform standard of water and wastewater service. With the support of a technical assistance program funded by the World Bank[8], WSRP aimed to provide: (i) clear separation of responsibilities between the delivery of water and sanitation services, and the management of water resources; and, (ii) piped water supply to all of its citizens by the year 2016. Prior to these reforms the responsibility for service delivery, including sanitation, sewerage, and wastewater, was divided between the Water Utilities Corporation (WUC), District Councils, and the Department of Water Affairs (DWA) in the Ministry of Minerals, Energy and Water Resources (MMEWR)[9].

15. As a result of this fragmentation, the operational and financial performance of water schemes across the country, was uneven. For DWA and District Council schemes, costs often exceeded (1.5 times) the revenue from customers, tariffs were low, and collection rates well below billing; and despite receiving Government subsidies equivalent to about 70 percent of customer revenue, over time due to inadequate maintenance and inefficient management these systems deteriorated. In contrast, WUCs performance was solid and its financial position, strong. In 2008 WUC's non-revenue-water was about 11 percent of production, 95 percent of the bills were collected, and customers received a high-quality service (24/7).

16. The WSRP re-aligned these roles and responsibilities through a phased approach implemented between 2009 and 2013. WUC assumed responsibility for water supply, reticulation, and wastewater treatment for all 540 DWA and District systems, which are clustered under 16 Management Centers (MCs). DWA's mandate changed to water resource planning, development and management, including planning and development of large water infrastructures such as dams and transfer schemes. Steps to improve operational and financial efficiency through modern management methods, the introduction of innovative and appropriate technology options, and tariff setting and pricing methods (that adequately reflects scarcity and opportunity costs) were also initiated, however these have yet to be completed.

17. The consolidation of water supply and wastewater treatment schemes under WUC has contributed to the deterioration of WUC's operational and financial performance. From 2009 to 2015 WUC's customer base grew significantly from 83,000 to 415,000, and production increased to over 102 million cubic meters water (from 70,000 in 2009). Billing also increased to about BWP 1,000 million in 2015 compared to BWP 300 million in 2009, but overall collection rates declined as more rural

[8] World Bank, 'Technical advice for Reform of the Water and Sanitation Sector', vol. 1 & 2, Government of Botswana, 2009

[9] Prior to 2009, WUC was responsible for urban water services in Gaborone, Jwaneng and Lobatse in the South and Francistown, Selebi Phikwe and Sowa in the North. District Councils and the DWA were responsible for 540 water supply systems serving all other urban and rural areas.

customers were added. Years of underinvestment and poor maintenance have resulted in an asset base in dire need of replacing and upgrading. NRW has increased from about 19 percent of production to about 40 percent; labor productivity has moderately improved, but there are still 7 staff per thousand connections. Prolonged periods of water rationing arising from chronic drought have also added to the financial stress of the utility.

18. With respect to wastewater, the majority of systems inherited by WUC in 2013 suffer from operational issues related to under-dimensioning and lack of critical maintenance, particularly those formerly operated by municipal authorities. Treated wastewater amounts to an estimated 20 to 30 Mm3 per annum and only 10 per cent is currently reused. WUC intends to develop capacity for greater reuse and recycling[10]. This will reduce environmental degradation as increased reuse will require more stringent compliance with Botswana standards— untreated effluent discharged to the environment is a threat to already constrained ground and surface water sources. Greater water reuse will also contribute to demand management by reducing the need for development of new sources. Overall, since the start of the WSRP, WUC has reported increasing operating losses of more than BWP 350 million per year. Currently it is only able to recover about 75 percent of its operating cost, in particular due to increasing energy and chemical costs[11].

19. In order to improve the performance and capacity of sector institutions, the GoB will advance a number of urgent policy and regulatory reforms initiated under the WSRP. These include implementation of the Integrated Water Resource Management (IWRM) Water Efficiency Strategy (2013–2030) and the Water Policy (approved by Parliament in August 2016), which provides a framework for enhancing access to good quality water, promoting sustainable development of water resources, and ensuring that water is allocated more efficiently across different user sectors. The policy calls for establishment of a Water Resources Council and Water Regulator. The Water Resources Council will be responsible for overseeing and allocating water resources and developing water related policies, while the Regulator will be in charge of ensuring financial sustainability by guiding and monitoring water tariff structures[12].

C. Proposed Development Objective(s)

[10] Government has set an ambitious target of 96 per cent reuse of wastewater outflows by 2030 but existing inflow and outflow data is scarce.

[11] The BWP155.5 million increase was mainly attributable to the fact that unlike in the 2012/13 financial year where the Government provided a revenue grant of BWP200 million, during 2013/14 financial no revenue grant was received as it was intended that this funding would be sourced through a bond. As this did not happen much of WUC's planned investment under NDP 10 was deferred.

[12] At present, WUC has proposed a pricing structure, which has to be approved by the MMEWR— a block tariff system with rising water tariffs for higher user bands. Self-providers pay for water rights attained from the Water Apportionment Board, but not for raw water abstraction. The 2012 Draft Water Policy calls for a raw water extraction fee for all water withdrawals to help fund water management activities and encourage conservation.

Development Objective(s) (From PAD)

To improve availability of water supply in drought vulnerable areas, increase the efficiency of WUC, and strengthen wastewater management in selected systems.

Key Results

a. Direct project beneficiaries (number), of which female (percentage)

b. Additional water made available by the investments under the project (cubic meters)

a. Average annual COD removal efficiency from raw water at WWTP (percentage)

c. People benefiting from improved water supply through measures aimed at alleviating drought impact (number)

d. Revenue to operating cost ratio (ratio)

D. Project Description

20. The Project is designed to respond to Botswana's ongoing drought and reduce vulnerability to drought in the medium to long term. The drought declared in July 2015 was the worst in the past 34 years and it has been extended for a second year with a slightly lower level of severity[13]. As droughts in Botswana are chronic, the current acute dry spell has further aggravated the water balance. For groundwater in particular, impacts will not be alleviated in the short term as recharge rates are already low, and are projected to decline further with climate change[14]. Most of the proposed sub-projects are located in the eastern and southern part of Botswana, which is the driest and most populated part of the country. The Project includes critical water supply investments in water supply to urban and rural areas, that are needed to mitigate drought impacts, and wastewater treatment investments needed to comply with effluent standards and prevent pollution of vital downstream water sources.

21. The proposed investments were selected from a list of "hot spots" identified by GoB as part of its NDP 11 planning process. Several of these priority sub-projects were first proposed to the Bank for financing in 2014, however, the proposed Project did not move forward due to financing and capacity limitations and was eventually dropped. They have now been incorporated in the NDP 11 emergency water supply program which this Project will support. In addition to the "hot spots" list, the Project also draws on financial and operational performance data for each of WUC's 16 MCs[15]. This data will be used to support operational efficiency improvements in underperforming MCs as a means of improving demand management, reducing losses, increasing access to services (particularly for vulnerable

[13] The entire Southern Africa region is experiencing a drought and the Bank is actively engaged in helping SADC with the response. Several IDA countries in SADC will receive supplemental finding from the Crisis Response window,

[14] Botswana Climate Variability and Change: Understanding the Risks. World Bank, November 2010.

[15] The operational snapshots rank MCs based on five key indicators: (1) non-revenue water, (2) water quality compliance, (3) number of reported bursts; (4) staff per 1000 connections and (5) operating cost coverage ratio (revenues / costs). It was noted that for all regions water supply coverage is high (generally >90%) and water services are close to 24 hours per day.

populations). These actions are vital for the sustainability of services, and conservation of already scarce water resources.

22. Proposed water supply and wastewater infrastructure investments amount to US $136 million. They include measures to rehabilitate, augment, and upgrade water supply and wastewater/sludge treatment schemes; and, improve the operational efficiency of WUC, particularly in underperforming MCs. In addition, support for US$ 20.7 million is included to strengthen the institutional capacity to plan and deliver services, and enable the reform of key policies and legislation. A contingency of US$ 3.55 million has been provided for any eventualities. The Project is organized under three components, as follows: Component 1: Improve Availability of Water Supply and Efficiency of Services; Component 2: Improve Wastewater and Sludge Management; and Component 3: Sector Reform and Institutional Strengthening.

23. Component 1: Improve Availability of Water Supply and Efficiency of Services (US$ 114.05 million) - will support immediate and medium term investments and measures to mitigate the impact of the drought by improving availability of water in settlements that have experienced extended periods of rationing and/or been forced to rely on water bowsers. Specific investments will include: (i) water source management, optimization and development, including interlinking of existing water sources (surface and ground) as well as of supply schemes to ensure backup supply and more sustainable production; (ii) expansion of water supply systems to reach underserved or drought affected communities; and, (iii) measures to improve operational efficiency, including reducing technical losses along transmission lines. The budget for this component (US$ 114.05) provides for implementation of safeguards actions (EMPs, RAPs and ESIAs), alongside the design and supervision services for the civil works. It will be implemented by the WUC and is supported by institutional strengthening activities (under Component 3) aimed at improving the long-term sustainability of service provision and managing water demand.

24. The proposed measures are intended for settlements in drought affected areas where boreholes are running dry, becoming saline, or being mined/overdrawn, as a result of the drought. However as droughts in Botswana are chronic (6 of the last 10 years were drought years) the investments are designed to address medium term needs to avoid having to resort to short term solutions (such as bowsers or emergency boreholes) every time a drought occurs. As Botswana relies heavily on groundwater (60 percent) and the recharge rate for groundwater is very low (less than 5 mm per year) the proposed investments aim at reducing the stress on water sources by bringing water from more secure sources – e.g. dams or well fields that have a sustainable yield.

25. Component 2: Improve Wastewater and Sludge Management (US$ 21.65 million) - This component will support strategic investments in refurbishment/rehabilitation of wastewater treatment to protect surface and groundwater sources; and enable scaling up wastewater reclamation and reuse in Francistown and Lobatse through design and build contracts. In Letlhakane sludge management facilities will be rehabilitated and expanded— the nearest facility is 200km away. The Francistown and Lobatse wastewater treatment facilities require urgent attention to prevent environmental contamination caused by discharge of untreated wastewater into nearby water courses. Due to inadequate treatment of wastewater at the Mambo WWTP (Francistown) a key water supply dam (Dikgatlhong) may be at risk of pollution. The Tati River into which the Mambo WWTT discharges is seasonal and the effluent discharged during the dry season can cause local contamination.

26. Given the limited water resources available in Botswana, the proposed measures will protect and conserve existing water supply, thereby reducing demand for new sources. A key objective of the investments in Mambo and Lobatse is to bring the effluent to a quality level where it can be re-used. Many users, including mines, local stadia, golf courses and other businesses have expressed their interest in re-using the treated water if WUC can ensure that effluent meets the standards set by law. In addition to improving treatment and operational efficiency (as measured by effluent quality), the Project also includes (under Component 3) activities to enhance WUC's capacity to holistically manage, treat, dispose of, and re-reuse wastewater and sludge through strategic investments in new or improved technology options. This component will be implemented by WUC.

27. Component 3: Sector Reform and Institutional Strengthening (US$ 20.75 million). The Component's will support reforms initiated under WSRP in 2009 by strengthening the institutional, policy, and legal framework as a means to improving long-term water security and increased efficiency of services. As such, policy and strategies need to be directed toward improving allocative efficiency, enhancing technological developments, strengthening service delivery, improving water resources stewardship and strengthening water demand management. In addition capacity for implementation will be strengthened to ensure a timely and efficient response to the drought. Activities financed under Component 3 will include:

28. Sub-component 3.1. Sector Reform. This will support the development or roll out of sector policies, legislation and institutions. In order to conform to new institutional mandates, the sector is in the process of developing or updating several key legal, strategy and policy instruments. Prioritized activities will enable implementation of the development agenda outlined in NDP 11, with a strategic focus on improving water security and developing resilience to droughts and water shocks, through strengthened water resources management and planning capacity, and more effective WRM instruments. This sub-component will be implemented by MMEWR.

29. Sub-component 3.2. Institutional Strengthening and Capacity Building. This Sub-Component will enable MMEWR (DWA) and WUC to increase their capacity to implement sector policies and strategies; strengthen their overall operational performance; and, improve their corporate governance and management: (a) Support for MMEWR (DWA) will include strengthened capacity for water resource planning and monitoring, groundwater development, monitoring, and regulation among others; (b) Support for WUC will include institutional restructuring, business strategy development, efficiency improvements (e.g. through demand management, cost recovery, energy reduction, non-revenue water, and innovative ICT use); refinement of water supply, sanitation and waste water supply guidelines; and training and reskilling WUC staff in underperforming MCs. This sub-component will be implemented by MMEWR and WUC.

30. Sub-component 3.3. Forward Planning – Technical Assistance and Studies. This Sub-Component includes: (a) technical assistance required to develop a pipeline of strategic national investments aimed at improving long-term water security (e.g. Chobe-Zambezi and Lesotho-Botswana Transfer Schemes); (b) strengthening the pipeline of investments through feasibility studies; detailed designs; environmental and social assessments, transaction design, expert panels and the like. A sound investment pipeline will allow Government to advance its vast water investment program more rapidly, and assist in closing the large investment gap. This sub-component will be implemented by MMEWR and WUC.

31. Sub-component 3.4. Project Management. This subcomponent includes support for adequate project implementation capacity in the MMEWR and WUC PMOs, including funding for PMO staff and technical assistance. In addition the project will finance inputs required to ensure the effectiveness of implementing agencies including (as needed), equipment, running costs, logistical support, and other operating requirements. Responsibilities of the PMOs include project management and coordination, procurement and financial management, project monitoring and evaluation, social and environmental safeguards management and oversight, and strategic project communications and outreach. This sub-component will be implemented by MMEWR and WUC.

Component Name:
Component 1: Improve Availability of Water Supply and Efficiency of Services

Comments (optional)

Component Name:
Component 2 - Improve Wastewater and Sludge Management

Comments (optional)

Component Name:
Component 3: Sector Reform and Institutional Strengthening

Comments (optional)

E. Project location and Salient physical characteristics relevant to the safeguard analysis (if known)

Nation-wide. Although initial investments have been identified, as the drought is ongoing the project will allow some flexibility to adapt to emerging needs. Currently the project is intended to support interventions in drought affected settlements; and improve wastewater and sludge management in order to protect vital water supplies and increase potential for reuse.

It is expected that investments will be implemented in at least 70 villages located within seven (7) WUC Management Centers as follows: Selebi Phikwe and Letlhakane - located in the Central District of Botswana; Ghanzi - located in the Kalahari Desert in the western part of Botswana; Masunga - located in the North-East and Tutume Sub-District of Botswana; Molepolole - located in the south east of Botswana in the Kweneng District; Kanye - located in mountainous region of Southern Botswana, and Lobatse - located in South-Eastern Botswana, 70km south of the capital city Gaborone and situated in a valley running north toward Gaborone.

F. Environmental and Social Safeguards Specialists on the Team

Helen Z. Shahriari,Kisa Mfalila

IMPLEMENTATION

32. MMEWRs primary role is to formulate, direct, and coordinate policies and programs for minerals, energy and water resources development.. In the water and sanitation sector it is responsible for ensuring the delivery of clean water for drinking purposes and for agricultural, commercial and industrial development through its departments and parastatals. DWA and the WUC are responsible for day to day implementation of the Governments water programme. The Ministry coordinates these activities through a Programme Management Office headed by a Programme Coordinator. Within MMEWR, DWA takes the lead on water resources policy and management. In addition, it is responsible for monitoring and regulating water resource use; and developing long term strategic water supply schemes. WUC (established by the Water Utilities Corporation Act of 1970) is currently responsible for delivering water to domestic, mining, manufacturing, and commercial customers countrywide; although mining and energy users in remote areas often develop ground water supplies independently. WUC also has operational responsibility for waste water and water treatment, pumping, storage and distribution to customers, and has partial responsibility for sanitation services.

33. The Project will be implemented by MMWER and WUC. As the Borrower, MMEWR -will be responsible for overseeing project implementation. It will do so through its existing MMEWR PMO, which will have overall responsibility for coordination of Project activities, and consolidation of monitoring, reporting for the project. This will include preparation of a consolidated work plan, procurement plan, monitoring reports, financial reports, and other reports required for the Project. MMEWR PMO will be responsible for the implementation of Component 3 institutional and capacity building activities that fall under the mandate of MMEWR (DWA). Based on the division of responsibilities for all Component 3 activities agreed between MMWER (DWA) and WUC, the annual work program and procurement plan will identify the specific activities and budgets allocated for WUC and MMEWR (DWA) –including training, capacity building, technical assistance and studies. Each entity (MMEWR PMO, and WUC) will be responsible for identifying and preparing the inputs to the annual work program and procurement plan (e.g. TOR, budgets). As MMEWR PMO will be responsible for enabling the implementation of MMEWR (DWA) activities under Component 3, it will procure additional M&E, procurement and financial management capacity to support this function. As these activities will complemented by grant funding from other development partners where available, MMEWR will also be responsible for coordinating implementation.

34. WUC will be responsible for the implementation of all sub-projects under Components 1 and 2, which largely involve rehabilitation and augmentation of existing water and wastewater systems currently managed by WUC. In addition, it will be responsible for a subset of the institutional and capacity building activities under Component 3. Responsibility for the day to day management of WUC implemented activities will be delegated to the existing WUC PMO housed in the Technical Department. WUC will strengthen the capacity of the PMO by hiring additional staff in such areas as financial management, procurement, monitoring and evaluation, social and environmental safeguards and project coordination. WUC PMO will implement the proposed sub-projects and activities through WUC's existing structures under the supervision of WUC's management team. Sub-projects and activities

supported by the Project will be coordinated by the responsible Project Engineers with support of General Managers of the relevant Management Centers under the leadership of the Director of the Technical Services Department. As these activities form part of the overall NDP 11 work program, in line with current practice, where necessary WUC will also support the MMEWR PMO and MMEWR (DWA), in the execution of their obligations under the Project.

SAFEGUARD POLICIES THAT MIGHT APPLY

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	This policy is triggered due to the potential environmental and social impacts associated with the project investments. The proposed investments to enhance the water security will include rehabilitation of existing WWTPs which will likely generate adverse impacts both during the construction and operational phases of the facilities due to the proximity of the Mambo WWTP to the Dikgatlong Dam which supplies raw water to the city of Gaborone. Disposal of sludge from existing WWTPs during the construction and operational phases of the WWTPs may also impact the environment within the area of influence of the project. Based on the preliminary screening of the proposed project activities, preliminary assessment of the baseline characteristics of potential project sites, and the available Environmental Impact studies, the project is classified as Category A, as there may be adverse impacts within the project's area of influence that would require full environmental and social assessments.
Natural Habitats OP/BP 4.04	No	The screening of proposed activities will determine if the project activities are likely to alter or cause destruction of any critical or sensitive natural habitats. The team will also look for potential opportunities to generate positive impacts on natural habitats through project activities, should such opportunities present.
Forests OP/BP 4.36	No	The project will not support civil works located within forested areas or plantations as defined under OP 4.36.
Pest Management OP 4.09	No	The project will not involve procurement of pesticides or fertilizers and does not have the potential to lead

		to increased use of pesticides or fertilizers.
Physical Cultural Resources OP/BP 4.11	Yes	The Borrower will ensure that the initial environmental and social assessment screens for potential impacts on the physical cultural resources and include Chance Find Procedures (CFP) in the ESIAs and bidding documents to ensure mitigation of any new discovery of PCRs.
Indigenous Peoples OP/BP 4.10	Yes	This policy is triggered due to the lack of sufficient prior information on the proposed routing and sites for development of infrastructure to be supported by the project. In the event that it is determined that indigenous people will be affected a full assessment will be conducted and an Indigenous Peoples Development Plan prepared based on prior, free, informed consultation. The plan will be disclosed in Country and on the Banks external website; and implemented prior to the start of civil works.
Involuntary Resettlement OP/BP 4.12	Yes	The project will undertake measures to mitigate the impact of the drought by equipping and connecting existing water sources to settlements that have experienced extended periods of rationing and/or been forced to rely on water bowsers as well as the expansion to under-served or drought affected communities. As the vast majority of infrastructure will be in-situ rehabilitation and upgrading, the extent to which any civil works under the project will require land acquisition and/or impact people's access will be determined during project preparation, including through the ESIA and planned social assessments. The proposed civil works may require land for temporary or permanent usage. The land acquired for this purpose may lead to loss of assets, sources of income or means of livelihoods, especially in rural communities whether or not project affected people (PAP) must move to another location. To ensure proper mitigation measures are set forth during the first year of implementation, based on the findings of the ESIA, the national laws on land as well as OP 4.12 and social assessments, within two months of effectiveness, the Borrower will prepare a Resettlement Policy Framework (RPF) to guide the preparation of site specific Resettlement Action Plans (RAP) once such details are known. In addition, for a number of sites where land has been acquired a social audit will be done before any civil works start. As with the other safeguards documents the RPF and RAPs

		will be fully consulted upon, reviewed by the project Social Safeguards Specialist, cleared by the RSA and publicly disclosed both in-country and on the Banks external website. All RAPS will be implemented before any civil works start.
Safety of Dams OP/BP 4.37	Yes	The Project will rely on the performance of the Ntimbale dam to supply 30 plus villages in the Masunga/Tutume area. The dam is currently underutilized (15 percent) due to inadequate pumping capacity at the treatment works. The Letsibogo Dam will also be used to supply water to 5 villages in Selebi Phikwe.
Projects on International Waterways OP/BP 7.50	Yes	Preliminary assessment of the likely impacts of the effluent to the water quality of the Limpopo River, indicates improvement in the water quality of the effluent discharged into the Limpopo River as the wastewater to be collected will be treated in the newly rehabilitated WWTPs to comply with the national BOD5 standard of 50mg/L before discharging into the Tati River (a tributary of the Shashe River) and finally into the Limpopo River. OP 7.50 is triggered because the treated effluent from the Mambo WWTP discharges into the Tati River, which flows into one of the major tributaries of the Limpopo River–the Shashe River. The Shashe contributes about 12.2 percent of the Limpopo's mean annual runoff. It originates from the northwest of Francistown on the border between Botswana and Zimbabwe and flows southeast along the border for approximately 362km until it reaches the confluence point with the Limpopo River where Botswana, Zimbabwe and South Africa meet. The Limpopo River is classified as an international waterway. The Mambo WWTP is located close to the national Tati River which originates in Botswana and is the recipient of the treated wastewater from the plant. The Tati River flows into the Shashe River, which feeds the Dikgatlhong Dam located 3km below the confluence of the Tati River with the Shashi River. The Dikgatlhong dam is a key source of water supply to the cities of Francistown and Gaborone. The project will support rehabilitation works at the Mambo WWTP to ensure that the quality of discharged effluent from the plant stringently complies with legislated discharge standards and that the overall quality of the Shashe River is not adversely affected by contaminants

		during both the construction and operational phases of the project. No notification is required as the project will rely on water sources that have all ready been developed and stay within permitted abstraction levels.
Projects in Disputed Areas OP/BP 7.60	No	

KEY SAFEGUARD POLICY ISSUES AND THEIR MANAGEMENT

A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

Proposed infrastructure investments include rehabilitation of existing wastewater treatment plants which could generate potential adverse impacts which are likely to go beyond the physical boundaries of the planned investments during the construction of the facilities. Disposal of sludge from existing wastewater treatment plants during the rehabilitation and operational phases of the wastewater treatment plants may also impact the environment within the area of influence of the project. Based on the preliminary screening of the proposed project activities, and a preliminary assessment of the baseline conditions of potential project sites, and the available Environmental and Social Impact studies, the project is classified as Category A. There may be significant adverse impacts within the Project's area of influence that would require full environmental and social assessments. Current uncertainties regarding ecological flows, adverse impacts due to downstream discharge of treated waste water into the river system, and the location of the wastewater treatment plant (50 km upstream of) a water supply dam, necessitate this rating. This will allow a more comprehensive, full-scale environmental and social assessment to be undertaken. The environmental impacts of the construction related activities are routine in nature and include general construction impacts of solid waste management, provision of erosion control measures, disposal of used oils and degreasers, proper excavation and backfilling, provision of toilet facilities for site workers, traffic management, health and safety, dust and noise control and chance finds of cultural property. As the bulk of investment will be in –situ rehabilitation and upgrading or extending infrastructure to new water sources, this will largely involve the installation of transmission, storage and pumping equipment. The project also involves construction of new pipelines to supply areas that do not have a reliable source. In a majority of cases the transmission lines are to be placed within existing rights of way on existing road networks. However, where pipelines are interconnecting different boreholes or connecting the boreholes to population centers such as villages the focus will be ensuring that any physical activity undertaken is well managed; that land take for new sites follows required procedures as will incorporated in the RPF; an in the event that indigenous peoples areas are affected, an IPDP will be prepared.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:

The long term environmental and social impacts of the project are expected to be largely positive contributing to better public health and environmental conditions through improved water quality and supply and improved quality of effluent generated through WWTPs. Future environmental and social risks depend in large part on adequate and efficient operation of the Mambo Wastewater Treatment Plant, the Letlhakane Wastewater Treatment facility and the Lobatse Wastewater Treatment Plant including the treatment, transport and disposal/use of the sludge.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.

Given the deferral of safeguard requirements to the implementation stage of the project, alternatives to the proposed infrastructure investments are being considered with respect to the technical solutions identified during the update or finalization of detailed designs. The process of preparation of site specific environmental and social assessments will also include a review of alternatives. ESIAs and ESMPs will also include specific measures to ensure that groundwater abstraction is sustainably managed.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.

Department of Environmental Affairs (DEA) is the regulatory agency and competent authority responsible for enforcing environmental regulations and ensuring that all infrastructure investments in Botswana are in compliance with the national EIA law and. DEA works closely with environmental officers at the line Ministries who are responsible for site level environmental management of project activities. With respect to this project, the Safety, Health, Environmental and Quality (SHEQ) unit at the Water Utility Corporation will be responsible for preparing environmental and social impact assessments. The Project will strengthen the capacity of WUC to address safeguard issues by supporting the procurement of a full time environmental and social safeguard specialist.

WUC has the technical capacity to undertake environmental and social studies. As the implementing unit, it will be required to prepare site-specific design stage ESIAs, ESMPs and RAPs during implementation of the Project in compliance with the Botswana Laws and the World Bank Safeguard Policies. As the project will abstract water from two dams measures will also be taken to ensure compliance with Dam Safety Policy. Regular reporting on safeguards compliance will be undertaken and Annual Audits on the implementation of ESMPs will be prepared by WUC and submitted to DEA for approval before submitting to the Bank.

In addition, an RPF will be prepared to guide social safeguard actions to be undertaken by WUC during implementation. WUC will bear the full responsibility of preparing the framework and site specific studies. It will undertake these duties in coordination with land boards and other relevant Government entities.

During project implementation, supervision and monitoring of the mitigation measures will be crucial. This will ensure that the proposed mitigation measures are implemented in a timely and comprehensive manner. WUC, together with DEA, will be responsible for monitoring of the environmental and social aspects of the Project. Indicators for monitoring changes in the physical, biological and socio-economic environments should be developed during the preparation of the design stage site specific ESIA ESMPs and RAPs, and the monitoring component fully elaborated as part of the detailed site specific assessments.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

Key stakeholders include residents of the urban and rural areas where the proposed project will finance the water

supply and wastewater infrastructure investments, and relevant local and national authorities who are responsible for implementation and will also benefit from capacity building and improved services in sub-project areas. The project will carry out consultations with stakeholders with due consideration of gender and ensure that mechanisms are in place to address grievances that may arise in the course of the project. Support will be provided to strengthen existing feedback and grievance redress mechanisms in WUC.

B. Disclosure Requirements (N.B. The sections below appear only if corresponding safeguard policy is triggered)

Environmental Assessment/Audit/Management Plan/Other

The review of this Safeguards has been Deferred.

Comments
An Environmental and Social Safeguards Action Plan (Annex 4 of the Project Appraisal Document) has been prepared to guide the preparation of site specific ESIAs and ESMPs.

Resettlement Action Plan/Framework/Policy Process

The review of this Safeguards has been Deferred.

Comments
An Environmental and Social Safeguards Action Plan (Annex 4 of the Project Appraisal Document) has been prepared to guide the preparation of the RPF and site specific RAPs.

Indigenous Peoples Development Plan/Framework

The review of this Safeguards has been Deferred.

Comments
An Environmental and Social Safeguards Action Plan (Annex 4 of the Project Appraisal Document) has been prepared to guide the preparation of site specific IPDPs (as required).

C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting) (N.B. The sections below appear only if corresponding safeguard policy is triggered)

OP/BP/GP 4.01 - Environment Assessment

Does the project require a stand-alone EA (including EMP) report?
No

OP/BP 4.11 - Physical Cultural Resources

Does the EA include adequate measures related to cultural property?
NA
Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on cultural property?
NA

OP/BP 4.10 - Indigenous Peoples

Has a separate Indigenous Peoples Plan/Planning Framework (as appropriate) been prepared in consultation with affected Indigenous Peoples?
No

OP/BP 4.12 - Involuntary Resettlement

Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?
No
If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?
NA

OP/BP 4.37 - Safety of Dams

Have dam safety plans been prepared?
No
Have the TORs as well as composition for the independent Panel of Experts (POE) been reviewed and approved by the Bank?
No
Has an Emergency Preparedness Plan (EPP) been prepared and arrangements been made for public awareness and training?
No

OP 7.50 - Projects on International Waterways

Have the other riparians been notified of the project?
No
If the project falls under one of the exceptions to the notification requirement, has this been cleared with the Legal Department, and the memo to the RVP prepared and sent?
Yes
Has the RVP approved such an exception?
Yes

The World Bank Policy on Disclosure of Information

Have relevant safeguard policies documents been sent to the World Bank's Infoshop?
NA
Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?
NA

All Safeguard Policies

Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?
NA

Have costs related to safeguard policy measures been included in the project cost?
Yes

Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?
Yes

Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?
Yes

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APPROVAL

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