



1. Project Data

Project ID P096360	Project Name AO-Water Sector Institutional Dvlp	
Country Angola	Practice Area(Lead) Water	
L/C/TF Number(s) IDA-45010,IDA-49700	Closing Date (Original) 30-Jun-2016	Total Project Cost (USD) 153,454,841.93
Bank Approval Date 31-Jul-2008	Closing Date (Actual) 30-Jun-2019	
	IBRD/IDA (USD)	Grants (USD)
Original Commitment	57,000,000.00	0.00
Revised Commitment	176,244,808.96	0.00
Actual	153,807,982.36	0.00

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2. Project Objectives and Components

a. Objectives

The project development objective (PDO) as stated in the Financing Agreement was: "to strengthen the institutional capacity and efficiency of agencies in the Recipient's water sector to improve access and reliability of water service delivery " With the exception of the word "Recipient's", the PDO is the same as in the Project Appraisal Document (PAD: "to strengthen the institutional capacity and efficiency of agencies in the water sector to improve access and reliability of water service delivery." (PAD, page 2)



When the project was restructured on June 6, 2011 and Additional Financing was approved, the "reliability" objective was removed. Hence, the revised PDO was: "to strengthen the institutional capacity and efficiency of the Recipient's agencies in the water sector to improve access to water service delivery."

For the purposes of this ICR Review's, the following sub-objectives will be assessed:

Sub-objective 1: To strengthen institutional capacity of the agencies in the water sector

Sub-objective 2: To strengthen efficiency of the agencies in the water sector

Sub-objective 3: To improve access to water services delivery

Sub-objective 4: To improve reliability of water services delivery

A split rating will be conducted due to the change in PDO at the time of the June 2011 restructuring and approval of Additional Financing, when sub-objective 4 was dropped.

b. Were the project objectives/key associated outcome targets revised during implementation?

No

c. Will a split evaluation be undertaken?

Yes

d. Components

Component 1 – Development of Institutions in the Water Supply and Sanitation Sub-sector (original US\$25.7 million, revised US\$37.3 million, disbursed US\$30.2 million)

This component was intended to strengthen the institutional framework for the water supply sub-sector at both the central and regional levels through the development of the Asset Management Unit (AMU), the creation of Provincial Water and Sanitation Utilities (PWSUs), and the development of a Regulatory Agency for the water supply and sanitation sub-sector. At the June 2011 restructuring and Additional Financing, the creation of AMU was dropped because "the support needed by the PWSUs did not require creation of a new entity at the national level." (ICR, page 10)

Component 2 – Water Resources Management (original US\$12.0 million, revised US\$10.8 million, disbursed US\$10.8 million)

This component was designed to support the strengthening of the institutional framework for water resources management (WRM) by developing a dedicated institution for WRM, the National Water Resources Institute, (INRH), and by developing as well as rehabilitating WRM systems. At the 2011 restructuring, one of the two river basins slated for piloting river basin management was substituted by



another one that had higher priority accorded by the Government. At the 2016 restructuring, cost increases necessitated the scaling down of the component "to only support rehabilitation of 35 of the country's 189 hydrometric stations" as the first lot of 35 stations was already being constructed at that time. (ICR, page 10)

Component 3 – Rehabilitation of Water Supply Systems (original US\$51.8 million, revised US\$141.6 million, disbursed US\$152.4 million)

This component intended to improve and increase access to water supply services by rehabilitating and expanding piped water networks in selected cities. The sub-components included about 240 kilometers of water supply networks and 72,000 new household connections, as well as the preparation of technical cadasters and implementation of information systems for measuring water consumption, processing and sending bills to customers, and recording customer payments. Activities were to be piloted initially in five cities (likely Malange, Kuito, N'Dalatando, Huambo and Uíge), and later scaled up to four additional cities (likely M'Banza Congo, Menongue, Lubango and Luena).

The 2011 restructuring involved a significant scale up--for all the nine cities--of the following activities: (i) rehabilitation of production and treatment facilities; (ii) new water distribution reservoirs at existing treatment plants; (iii) new facilities such as water quality labs; (iv) replacement of electromechanical equipment; (v) new wells, and an additional 403 km of water supply networks; (vi) an additional 60,000 household connections (thus totaling 132,000 connections); and (vii) technical assistance, including a technical cadaster for about 60,000 connections. The AF also prioritized the project's focus of intervention towards peri-urban areas, given their higher concentration of poor households. In the 2016 restructuring, the targets for network extension and household connection targets were revised to 900 km and 110,000 connections, respectively.

Component 4 – Capacity Building and Change Management (original US\$11.0 million, revised US\$17.2 million, disbursed US\$24.8 million)

This component was designed to support capacity building at the national and provincial levels by engaging senior ministerial and provincial officials in institutional changes for the sector, training in management for staff of the National Water Directorate (DNA), social mobilization/communication in the provinces, and implementation of the Environmental and Social Management Framework and Resettlement Policy Framework. The component also supported capacity building and training for the PWSUs, including training on company organization, basic financial analysis and funds flow, oversight responsibilities and public communication for Board members, as well as training on leadership, management, finance, communications for all PWSU staff. The component also provided technical assistance (TA) to facilitate the following: (i) change management and good governance for the Ministry of Energy and Water (MINEA) and the PWSUs to improve communication programs and thereby strengthen the link between communities and government institutions; (ii) the development and updating of a risk management plan; and (iii) the implementation of the governance and accountability action plan.



In the event the 2016 restructuring dropped the TA to strengthen communication with communities and develop risk management plans, given the impending closing date and the existing capacity building priorities for the PWSUs. Activities needed to build capacity were folded into the management contracts.

e. Comments on Project Cost, Financing, Borrower Contribution, and Dates

Project Cost. The original total project cost was US\$223 million. The actual cost upon project closing was US\$220.26 million.

Financing. The original IDA financing (IDA-45010) was US\$57 million. Additional Financing (IDA-49700) was provided for US\$120 million. Thus, total IDA financing was US\$177 million, of which US\$153.81 million (87 percent) was disbursed. The US\$120 million of Additional Financing in 2011 led to a significant re-allocation of project funds. Further re-allocation during the 2016 restructuring was due to significant exchange rate losses between the US\$ and SDR.

Borrower Contribution. at appraisal, the original borrower commitment was US\$56.2 million. At closing, the actual borrower contribution was US\$66.4 million.

Dates. The project was approved on July 31, 2008 and became effective over two years later on August 30, 2010. The delay in effectiveness was largely due to: (i) the 2008 parliamentary election and ensuing restructuring of the government; (ii) the budgetary and fiscal problems in 2008/2009 that resulted from the sharp decline in oil prices and the international financial crisis; and (iii) the adoption of a new Constitution in 2010.

A mid-term review was conducted more than five years later on September 22, 2015, which was nine months before the original closing date of June 30, 2016. After closing date extensions totaling three years, the project closed on June 30, 2019. The project implementation period totaled nine years as from the project's effectiveness date.

The project was restructured five times:

The first one on June 6, 2011--i.e., one year after effectiveness and with US\$2.17 million disbursed out of the US\$177 million approved under two IDA credits--was the most important one as it involved Additional Financing (AF) and corresponding adjustments in the PDOs, results framework, components and costs, as well as reallocation among disbursement categories, and extension of the closing date. The AF supported the PWSUs with infrastructure investments and management contracts (MCs) to strengthen their capacity.

The second restructuring on May 16, 2012 involved the addition of a Bank safeguard policy that the project triggered, namely, Projects on International Waterways (OP 7.50).

The last three restructurings--i.e., on April 28, 2016, July 18, 2017, and September 6, 2018--mainly involved adjustments in components, costs and the financing plan, as well as further reallocation among



disbursement categories. As part of the 2016 restructuring, the existing electricity regulator was formalized in March 2016 as the new water supply and sanitation regulator, via the Joint Executive Decree no. 59/16 that created the National Electricity and Water Regulatory Institute (IRSEA).

3. Relevance of Objectives

Rationale

Country Background. The Water Sector Institutional Development Project (WSIDP) was prepared and appraised within a post-conflict context after political stability was re-established in April 2002, when the Government of Angola (GOA) and the Union for the Total Liberation of Angola signed peace accords. Having ended a civil war of 27 years, GOA took measures to improve macroeconomic performance while embarking on increased social spending and infrastructure investments across several sectors. This economic recovery program was supported by high international oil prices, thus resulting between 2003-2005 in an average annual GDP growth rate of 11.5 percent. In parallel, improvements in macroeconomic management led to a reduction inflation from 23 percent (2005) to 12 percent (2006). Despite these positive gains, inequality remained high and human development indicators lagged due to the long civil war. GOA's 2003 Strategy for Poverty Reduction indicated that around 62 percent of Angolan households lived below the poverty line (US\$1.70 per day). Moreover, life expectancy was 47 years, and nearly a quarter of all children died before they reached age five.

Sector Background. In the immediate years prior to appraisal, serious issues affected the water supply and water resources management sector. Access to drinking water was estimated at 54.3 percent while access to improved sanitation reached only 33.5 percent of households. Cholera was endemic and a 2006 outbreak resulted in over 48,000 cases. Poorly maintained, colonial-era water systems served most cities. Poor households were left out of network connections and had to obtain water from private vendors that charged as high (or more than) US\$10 per cubic meter.

Angola does not lack, and is in fact rich in water resources, with 77 river basins, 43 hydrological basins, and important upstream positions in several international basins. The scarcity of water supply stems from lack of infrastructure throughout the country. The provincial water directorates were unable to implement necessary investments or adequately maintain the existing assets, limited as they are. For example, in 2008, only 35 of the country's 135 hydrometric monitoring stations built in 1975 were functional. National capacity to manage the sector was also limited. It was in this context that the WSIDP was appraised and approved in 2008.

Relevance of Objectives. The project's objectives were highly relevant to the strategies and priorities of GOA and the Bank at the time of appraisal. Among the 10 priorities of GOA's Strategy for Poverty



Reduction (ECP), one was to (i) supply of at least 15 liters of water per capita per day to the urban and peri-urban population and (ii) regulate water trucks to ensure adequate water quality at an accessible price. The project's objectives were in line with the investment program of about US\$350 million that GOA launched to improve water supply infrastructure and improve institutional capacity. The project's objectives were also consistent with the following: (i) GOA's "Water for All" program (2007-2012) of US\$650 million to improve water supply for 3 million people; and (ii) GOA's new water law, new Water Sector Development Strategy, and the public enterprise law to establish public water utilities, among other reforms within an ambitious sector reform program.

At the time of appraisal, the project's objectives were also well aligned with the pillars of the Bank's Interim Strategy Note (April 26, 2007, Report No. 39394), which sought to: (i) strengthen public sector management and government institutional capacity; (ii) support the rebuilding of critical infrastructure and improve service delivery for poverty reduction; and (iii) promote the growth of non-mineral sectors.

At present, the project's objectives remain well aligned with the priorities of the Government of Angola (GOA), specifically its current National Water Plan (PNA), which prioritizes institutional strengthening and improved financial sustainability of service provision in order to support long-term sustainability of the sector. The project also supported GOA's decentralization goals.

The project's objectives are consistent with and directly support the second of two Country Partnership Strategy pillars (CPS 2014-2016, Report No. 76225-AO), namely, to "enhance the quality of service delivery and deepen social protection," for which a key outcome is the improvement of water supply systems. For this purpose, access for 520,000 people and greater PWSU financial profitability to 40 percent were specifically targeted. Through capacity-building and institutional strengthening activities, the project also supported a cross-cutting pillar of the CPS, namely, to support the "building human and institutional capacity."

The Bank was well placed to assist Angola in the institutional development of its water sector, given its considerable sectoral expertise, which includes advisory support for institutional reforms and implementation of infrastructure investments.

Rating

High

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

To strengthen the institutional capacity of the agencies in the Recipient's water sector.



Rationale

Theory of Change

The project's theory of change consists of deploying a mix of capacity-building and investment activities that would be expected to result in improvements in the institutional capacity and efficiency of the agencies responsible for Angola's water sector. The water supply investments are targeted, while the capacity-building activities cover the whole water sector at multiple levels of government, i.e., at the level of provincial utilities that provide water supply services, to be complemented at the national level by agencies responsible for water resources management, policy formulation. Thus, the project's design is built around a causal link between (i) the establishment of institutional clarity and strengthened capacity, with concurrent support from priority investments in water supply expansion, and (ii) the achievement of sector efficiency, as measured by improved access and reliability of water services.

The large number of input activities falls into four main categories: (i) institutional strengthening, of which the key ones include the development of an asset management unit (AMU), the creation of provincial water and sanitation utilities (PWSUs), and the development of a regulatory agency for the water supply and sanitation sub-sector; (ii) water resources management (WRM), by developing a WRM institution and developing or rehabilitating WRM systems; (iii) water supply rehabilitation, by constructing water supply networks and house connections, and by developing technical cadasters and information systems; and (iv) capacity building, at the national, provincial and utility levels, supported by technical assistance (TA) to facilitate change management and promote good governance.

The main expected outputs that would directly result from the foregoing input activities are: (i) improvements within numerous sector institutions (existing and new) with improved including PWSUs, a regulator, a WRM entity, an AMU, MINEA, and DNA; (ii) new households connected to the water supply networks and improved quality of service for existing customers; (c) improvements in the financial and operational efficiency of PWSUs; and (d) rehabilitation and operation of hydrometric stations.

The expected outcomes that are causally linked to the activities implemented and outputs achieved include the strengthened institutional capacity and efficiency of selected agencies in the GOA's water sector, as measured by improvements in (i) access (new household connections) and reliability of water service delivery in selected urban centers, and in (ii) operational and financial efficiency of PWSUs. The successful design and implementation of the PWSUs, the regulatory system and physical asset management, were expected to lead to improved efficiency of sector agencies and their utilization of sector financing. In turn, complementary actions such as gradual tariff increases (possible with the new regulator), as well as improvements in billing and collection, would lead to higher utility revenues, which are needed for ensuring the sustainability of services.

The foregoing theory of change is valid and well-articulated. The lines of causality and attribution are strong. However, a minor shortcoming is that the critical assumptions and risks were not delineated. This theory of change applies to all of the four sub-objectives, and is therefore not repeated in the respective efficacy discussions that follow below.

Assessment of the Achievement of Sub-objective 1



Between July 2008 when the project was approved as originally designed and June 2011 when the project was restructured to approve Additional Financing, the activities intended to achieve this sub-objective were not changed, except to clarify some indicators in the PAD.

As an overview of the significant achievements under this sub-objective, the specific targets were either achieved or surpassed by project completion. To serve as a general baseline, at the time of appraisal, many institutional and regularly reforms were still necessary (including formation of an independent regulator), to further clarify and operationalize the roles of the Ministry of Energy and Water (MINEA), its National Water Directorate (DNA), the Ministry of Finance, the provinces (who were mandated with responsibility for service delivery), and other entities. The project achieved the provision of wide-ranging institutional support, including the MINEA, DNA, the National Electricity and Water Regulation Institute (IRSEA), the National Water Resources Institute (INRH), and seven Provincial Water and Sanitation Utilities (PWSUs), with the seven benefiting from construction investments, and 6 benefiting from management contracts (MCs). The GOA has scaled up the MC approach and created an additional seven PWSUs that are being supported by a project financed by the African Development Bank (AfDB). DNA's project management skills have been strengthened through the project's Financial and Contract Management Unit (FCMU). By placing FCMU staff within DNA, the project fostered the sharing of knowledge, including procurement, sectoral technical standards, and environmental and social safeguards. In particular, the knowledge exchange for procurement has resulted in the wider use of the standard bidding documents that were developed under the project.

The following key outputs and outcomes provide evidence that the targets for achieving this sub-objective have been met or exceeded (ICR, page 13):

- Compared to the target of supporting six PWSUs, the project supported seven with investments in networks and treatment systems, as well as management contracts (MCs) in six of the seven. The MCs provided specific technical assistance (TA) to strengthen technical skills and financial management. (117 percent achieved)
- All of the PWSUs—versus 60 percent targeted—conducted independent financial and performance audits. (167 percent achieved)
- The definition and agreement on a Framework for “Institute for Water Resource Management” was achieved, via Presidential Decree 205/14, August 2014 and Executive Decree 43/16, January 2016.
- Compared to the target of 70 percent, all of the 60 rehabilitated hydrometric stations (of which 35 were financed under the project) have been made operational and are regularly recording data for the National Water Resources Institute (INRH). (143 percent achieved).
- The hydrometric data has been used to inform the PNA (Presidential Decree 126/17, June 2017), the National Emergency Plan for Water (Presidential Decree 9/13, January 2013), and the General Plan for Development and Use of Water Resources of the Cuanza River Basin (PGDURH-Cuanza, approved in February 2018).
- The establishment of a Management Information System (MIS) was achieved that incorporates sector-wide information from river basins, thus supporting the preparation of integrated management plans for water resources.
- The regulatory agency (IRSEA) was established by adding a water office in the institute of the electricity regulator, RP 2017. IRSEA is operational and has recently developed a new provincial tariff regime (Joint Executive Decree no. 230/18, June 2018).
- The creation of an Asset Management Unit (AMU) was deemed unnecessary after the 2011 restructuring with AF, and its role was taken over by the PSWUs. IEG concurs that the establishment



of a separate apex entity was no longer needed since the envisaged functions could be integrated with the mandates of, and performed directly by the PWSUs.

Rating

Substantial

OBJECTIVE 2

Objective

To strengthen efficiency of the agencies in the water sector

Rationale

The intrinsic mandates of the entities created as part of the project (IRSEA, INRH) included the improvement of human capacity and efficiency within the sector. Efficiency of the PWSUs was also strengthened by introducing a new water tariff, which benefitted PWSUs by improving their operations and finances.

The following main outputs and outcomes provide evidence that the targets for achieving this sub-objective have been met or exceeded (ICR, page 14):

- Exceeding the original target of 60 percent of PWSUs, by project completion 85.7 percent of the PWSUs had achieved annual profitability based on annual targets as verified by independent audits (143 percent achieved). The target for annual profitability of PWSUs was previously higher at 66 percent, but even relative to this target, the project exceeded the goal (130 percent achieved).
- Improved financial cost-efficiency in the sector and greater outreach to more households were achieved through non-traditional design and construction approaches for water supply. More specifically, the project used simplified design procedures and lower-cost construction options, thus enabling more households to be reached. This approach has been mainstreamed as the standard approach for investments in the sector.
- Greater efficiency of PWSUs is also evident from the measurement of indicators within the management contracts (MCs). These measures include: (i) staff per 1000 connections improved, with five of the six beneficiary PWSUs having a ratio between three and eight by project closing (compared to an overall average of 6.5, which in itself is lower than the earlier average of 13.5); (ii) all the six utilities have a cost coverage ratio of greater than 1, and are therefore able to cover their operational costs through billings (the overall average is 2.09, which is a significant improvement from 0.74); and (iii) billing ratios are averaging 58 percent (which is also a major improvement from 14 percent).
- The project's PWSUs are perform at a higher level compared to other PWSUs in Angola. Project PWSUs have more customers (14,100 compared to 8,200), provide service for more hours per day (20.3 hours compared to 18.1), have a cost recovery ratio that is double that of other PWSUs (2.09 compared to 0.98), and have better staffing ratios (6.5 compared to 12.6).
- The tariff policy revision for delivery of water supply and sanitation services was approved and made operational (Joint Executive Decree no. 230/18, June 2018), though this indicator was later removed during the 2011 restructuring.



Rating

High

OBJECTIVE 3

Objective

To improve access to water services delivery

Rationale

As an overview, despite the major exchange rate losses that occurred during the implementation period, the project led to significant achievements for this sub-objective, in large part due to the construction approach used for the household connections. Following the Bank's advice and experience elsewhere, the project installed clusters of household connections that are similar to the condominium design approach used in Brazil and other countries. This approach, which was implemented during the second batch of contracts in the AF, involved the use of smaller pipes and shorter distances of pipe overall. This approach was implemented during the second batch of contracts, as part of the AF. As a result, connection costs were lower, i.e., around US\$730 per connection during the second batch, compared to US\$1,160 per connection during the first batch. The main results include the following:

- The project benefited—through new piped water access, rehabilitation of existing networks, and operational improvements within the PWSUs—an estimated 878,096 people, which is significantly above the target of 704,000 (125 percent achieved).
- Of the total, 50 percent are female (achieved).
- The improved access can be broken down as follows: 108,903 households (696,976 beneficiaries) gained access to piped water through 110,000 new connections. An additional 28,300 households (181,120 beneficiaries) gained improved service quality through the rehabilitation of networks and treatment plants.
- The length of network installed was 1,040 km, which exceeded the target of 900 km (116 percent achieved).
- Due to a decrease in the length of delays and reductions in cost adjustments between the first batch and second batch of works contracts, the ICR reports (page 22) that “the price per connection dropped dramatically from around US\$1,160 per connection to US\$730/connection. In Lubango and N'dalatando for example, the cost of a household connection dropped by nearly 50 percent (45.7 percent and 49.1 percent respectively).”

The ICR (page 17) indicated some non-quantifiable gender impacts, specifically (i) the reduction of the disproportionate burdens placed on women to fetch water, through the project's household water connections; and (ii) the potential scope for supporting female employment opportunities, for which first steps have been taken by the PWSUs through initial gender assessments intended to assess their human resources policies around gender and diversity. The results of the gender assessments informed the World Bank's large global study on women in water utilities (2019); moreover, under the ongoing follow-on project (WSIDP-2), implementation of activities to address some of the issues identified are being planned.

Rating

High



OBJECTIVE 4

Objective

To improve reliability of water services delivery

Rationale

The PAD did not include any specific indicators to measure the achievement of this sub-objective; neither did the PAD provide any detailed definition of reliability. During the AF in 2011, this sub-objective was dropped. Nonetheless, the MCs tracked the hours of service for six PWSUs, as a standard metric of water supply reliability. As the baseline, it was estimated that service was provided 57 percent of the time on average. This had increased to 85 percent (roughly 20.3 hours per day) by project closing. Improved utility operating practices as well as targeted network improvements and investments in treatment facilities have led to these improvements. According to the ICR (page 15), as a result of the project, "an estimated 181,120 people benefited from improved reliability of services due to improvements and rehabilitation works completed in the existing piped networks."

Since this sub-objective was dropped, and in the absence of a clear definition of reliability in the PAD, this sub-objective is not rated, although the available information indicates that improvements in reliability have been achieved, as discussed above.

Rating

Not Rated/Not Applicable

OVERALL EFFICACY

Rationale

The achievement of the project's objectives was to be measured by the extent to which PWSUs have achieved annual profitability targets, hydrometric stations have been made operational, and households in the target cities have been provided with new connections to the piped water supply network managed by the utilities. The targets for these indicators were achieved or exceeded. The project's achievement of sub-objective 1 is substantial, while that of sub-objectives 2 and 3 are both high. Sub-objective 4 was not rated because it was dropped, but measurements obtained under the management contracts indicate substantial results. On this basis, overall efficacy is rated high.

Overall Efficacy Rating

High



5. Efficiency

Economic Rate of Return. The project's efficiency was assessed based on economic rate of return (ERR) and net present value (NPV) criteria, focusing on the economic benefits and costs of water supply activities (i.e., US\$197 million or 90 percent of the US\$219 million disbursed, plus operation and maintenance costs of PWSUs) since the results of building institutional capacity were difficult to quantify. The ICR (page 15) indicated that, subject to updates, it replicated the economic analyses done for the original project and the AF appraisals. The updates included: (i) the actual disbursement figures; (ii) available PWSU performance data; (iii) estimates of health impacts based on 2014 population figures and latest data from Multiple Cluster Information Surveys as well as Demographic and Health Surveys.

Project costs exceeded the original estimates for various reasons, including: (i) the significant rise in construction material and labor costs during project implementation; (ii) the additional works on treatment plants and more extensive rehabilitation of hydrometric stations; (iii) delays in project effectiveness, initial construction delays, and extension of the implementation period; and (iv) the limited baseline information at appraisal due to Angola's post-conflict status, and the more realistic cost figures as the estimates were updated. The AF partly accounted for the expanded scope of activities, increases in costs, and extended implementation time frame.

The project's network design and construction approach resulted in significant cost savings hence targets were achieved despite high exchange rate losses due to the devaluation of the SDR. The original credit was SDR 35 million (US\$57 million equivalent) and the AF was SDR 74.1 million (US\$120 million equivalent). At project closing, the two credits were US\$27.6 million (or 15.6 percent) less than the approved amounts. Since most of the signed contracts were in foreign currency, the devaluation of the Angolan Kwanzas against the US dollar during this time period did not fully offset the losses from the SDR devaluation.

With these cost increases taken into account, the updated ERR at project closing was 11.25 percent, compared to 14.5 percent at the time of the Additional Financing in 2011, and 19.3 percent in the PAD in 2008. The NPV was US\$70.23 million at project closing, compared to the US\$37.55 million during the AF and US\$42.03 million in the PAD.

Implementation Efficiency. Effectiveness was delayed by two years, and—as part of approving Additional Financing—the project's closing date was extended by a total of three years. Despite the initial delay in effectiveness, the expected outputs materialized in part due to cost-efficient innovations in approaches to design and construction, as explained above in the Efficacy section (sub-objective 3). Although there were initial procurement delays, efficiency gains were also achieved through FCMU's close tracking and the quick resolution of procurement issues (see Procurement discussion in Section 10 below), particularly during the second phase of project works. Staff turnover was also low.

Overall, while there were some early implementation delays, the project's outputs and outcomes were delivered with acceptable returns despite the significant exchange rate losses due to the SDR devaluation. Efficiency is rated substantial.

Efficiency Rating

Substantial



a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal	✓	19.30	90.00 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	11.25	90.00 <input type="checkbox"/> Not Applicable

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

The relevance of the project's objectives is rated high. The project's efficacy in achieving its objectives is also rated high. Efficiency is rated substantial. On the basis of these sub-ratings, the project's overall outcome is rated highly satisfactory, in line with the OPCS and IEG guidelines. The ICR conducted split ratings at the 2011 and 2016 junctures, when the project's PDOs (in 2011), results framework, and outcome indicators were changed with the Board's approval (in 2011). The calculations and weightings were properly done, hence they were not re-done for the purposes of this ICR Review. However, it would be useful to note that (in line with IEG guidelines, page 46), in cases where the modified targets corresponding to the increased scope were met, "then this supports a decision not to apply a split rating and instead to assess the project based on the revised targets. In such a case, applying a split rating is likely moot and can overly complicate the reporting." Indeed, this may explain the often-confusing discussions (Original v.s. Post-AF v.s Other Restructuring) for each sub-objective in the ICR's Efficacy section, This also added (perhaps unnecessarily) to the length of the ICR. Since Table 4 of the ICR only has High or Substantial ratings throughout, it would have sufficed to assess directly based on the revised targets, since the splits and the weightings did not make much of a difference given the clear evidence base that relevance of objectives is High, Efficacy is High, and Efficiency is Substantial, which leads to an outcome rating of Highly Satisfactory according to the IEG and OPCS guidelines.

Overall, the project has made a significant contribution to water sector of Angola, in measurable terms that exceeded the expectations of the project as originally appraised. The project has resulted in institutional clarity at national and provincial levels, and developed institutions with adequate capacity to fulfill their mandates. The project also led to improvements in the financial efficiency of provincial utilities, as well as improved access to water supply services for a significant number of households. By using an innovative design and construction approach, the access improvements have included urban and peri-urban neighborhoods that were difficult to reach. The approach has led to substantial cost savings, facilitated procurement processes, and served as the standard approach under the follow on WSIDP-2 project.

According to the ICR (page 18), "the success of the project has led the GOA to replicate the approach in other projects in the sector." The AfDB, with the French Development Agency as a co-financier, have modeled their own project following the approach pioneered in this Bank project and the follow-on WSIDP-2. Finally, the Bank has also recently approved the first IBRD guarantee in the water sector (Luanda Bita Water Supply Guarantee Project, P163572). The Bank is also supporting a pilot public-private partnership (PPP) arrangement in Cabinda.

a. Outcome Rating



Highly Satisfactory

7. Risk to Development Outcome

The ICR (page 23) provides overall reassurances that the risk to the project's development outcomes are being minimized through the ongoing support being provided by the follow-up project (WSIDP-2) to the same institutions that were established or strengthened under WSIDP. These include further support to national entities, further improvements in management contracts (MCs), and continued strengthening of selected PWSUs to ensure the sustainability of new household connections and networks. The mandates of key sector institutions established under the project (e.g., INRH, IRSEA and the PWSUs) were specifically aimed at promoted long-term sector sustainability.

Nonetheless, the following moderate risks were identified by the ICR and need to be monitored:

Tariffs. Although IRSEA was able to increase tariffs gradually with the project's support, the existing process for approving tariffs needs to be reviewed to maintain efficiency and minimize political interference. The revised tariff structure as well as the financial and operational improvements of the PWSUs are expected to mitigate this risk.

Staffing. The understaffing in key institutions is a current concern that entails risks for long-term sector sustainability. However, the issue of staff turnover is being addressed under the ongoing WSIDP-2.

Software. The software that some PWSUs continue to use are not open source, thus risking loss of access when newer versions become available. This is also being resolved under the ongoing WSIDP-2 as part of a new generation of MCs

8. Assessment of Bank Performance

a. Quality-at-Entry

The evidence presented in the ICR (Page 22) indicates that the project's design was based on strong technical, institutional and policy assessments, which enabled the identification and planning of technical assistance and other capacity-building requirements. The analysis of baselines for fiduciary and environmental aspects were also adequate and served as a solid basis for launching project activities. The assessment of project risks was accurate and mitigation actions were identified appropriately. The implementation arrangements as well as the monitoring and evaluation framework were well matched to the project's requirements.

The ICR was candid about the shortcomings at entry. The hydrometric stations were not sufficiently assessed, thus resulting in a significant over-estimation of its scope under the project (i.e., 35 were



rehabilitated out of the much larger initial estimate of 189 stations). Assumptions on economic benefits (especially those related to health) were also overly optimistic at appraisal—an approach that was continued in the economic analysis for the AF. These issues were addressed during project implementation and the project’s efficiency was deemed satisfactory when the project closed.

Overall, despite some relatively minor shortcomings, and considering the post-conflict situation during project preparation, the underlying assessments and the design of most of the project’s aspects were robust, hence the Bank’s quality at entry is rated satisfactory.

Quality-at-Entry Rating

Satisfactory

b. Quality of supervision

The ICR (page 22) reports that the Bank team’s supervision of the project was diligent throughout the implementation period. The team addressed challenges with the GOA when they arose and was consistently responsive to client demand, as exemplified by supporting the Additional Financing when the need to scale up project activities materialized.

The full range of project activities was supervised closely and comprehensively, with a focus on assessing performance against the achievement of the project’s objectives, which was evident from the detailed Implementation Supervision and Results Reports (ISRs). The ISRs’ assessments and ratings were candid and justified (ratings were downgraded during periods when there were delays). The Bank team’s reporting prioritized the key messages regarding implementation progress toward GOA and Bank management. The ICR (page 22) indicates, as an example, ISR17 and ISR18 having flagged that “staffing of key sector institutions, including DNA, IRSEA and INRH was limited at points resulting in a risk that project TA activities would not have the intended capacity building impacts.”

The Bank team also closely supervised the safeguards, financial management and procurement teams throughout implementation. As an example, the ICR (page 22) cites that “following the fatal accident in Cuito, the Bank team mobilized additional support – through staff, experts and additional training – to ensure all appropriate assessments were completed, necessary changes in project procedures were implemented, and all relevant personnel had the necessary training.”



On the basis of evidence from ISRs and concrete examples of proactive support from the Bank team, the Bank's quality of supervision is rated satisfactory.

Quality of Supervision Rating

Satisfactory

Overall Bank Performance Rating

Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

The project's theory of change was adequate and comprehensive as well, by complementing access goals with institutional strengthening and efficiency criteria, linked by a credible causality chain. The intermediate and final outcome indicators were appropriately selected. Conducting M&E for the project required the development of new systems for measuring performance and tracking water supply and water resources management (WRM) activities and results. A set of TA activities under the project supported the data collection activities. One important shortcoming, however, was the lack of indicators to measure the reliability of water supply over time. Moreover, the institutional strengthening aspects were inadequately represented in the earlier versions of the Results Framework.

b. M&E Implementation

The ICR (page 20) indicates "The project RF was well tracked and regularly updated as part of ongoing project supervision." Due to cost constraints, the RF was revised in 2011 and 2016 to reflect changes in project priorities, Bank core indicators, and targets. The 2011 restructuring modified the scope and data collection approaches for some indicators, and the 2016 restructuring made further changes to take into account the experiences with the indicators up that point. The TA and MCs had the benefit of strengthening the data collection by PWSUs, which served as a complementary data system that helped define targeted support for each of the PWSUs. The tracking of these indicators during Bank supervision missions also allowed the Bank team to provide targeted feedback and support to each PWSU.

c. M&E Utilization

The M&E system proved useful in re-setting priorities for the infrastructure investments and institutional strengthening activities during the course of project implementation. For example, the shift in sector priorities led to removal of the indicator to establish the AMU, which the project's M&E had shown to be making little progress and had weak prospects for achieving the PDOs. Another example was when the M&E data showed that the original batch of works contracts would not fully contribute to achieving the PDOs; consequently, revisions were made, and the second batch of works contracts was based on the revised methodology. According to the ICR (page 20), "The PWSU MCs were also revised to add support to the PWSUs for the annual financial audits. The MCs were used to help the PWSUs produce



the necessary auditable financial statements that were required to meet the targeted financial audits in the RF.”

M&E Quality Rating

Substantial

10. Other Issues

a. Safeguards

With respect to the Bank’s environmental and social safeguards, the project originally triggered at appraisal OP/BP 4.01 on Environmental Assessment and OP/BP 4.12 on Involuntary Resettlement, and was assigned Category B. At entry, according to the ICR (page 21): “The project complied with all applicable environmental and social safeguards.” As evidence, the ICR cites the development of Environmental and Social Management Plans for 12 activities, in compliance with OP/BP 4.01. Moreover, the ICR also cites the development of an Environmental and Social Impact Assessment for N’dalatando (as part of the preparation for the follow-on WSIDP-2). The Resettlement Policy Framework prepared for the project did not require the preparation of Resettlement Action Plans, hence none were produced. Referring to whole series of ISRs that were prepared during project supervision, the ICR indicates that: “Throughout the implementation of the project, the environmental and social safeguards were both rated Satisfactory (ISR1 through ISR22).”

At the May 2012 restructuring in May 2012, the Bank’s safeguard policy OP/BP 7.50 on Projects on International Waterways was triggered due to a change in the water intake at Luena along the Luena River. This safeguard was not triggered at appraisal because the original design did not intend to finance civil works at that intake. The ICR (page 21) states that: “On November 22, 2011, the Africa Region Vice President approved an exception to the notification requirement under Paragraph 7(a) of OP 7.50.”

A fatal accident occurred in one of the beneficiary cities (Cuito) during project implementation. An explosive device detonated when a worker hit it while manually excavating a trench for pipeline installation. One worker died while two others received medical attention and were discharged. The ICR (page 21) indicated that: “The Bank commissioned an independent investigation that found that the contractor had valid insurance, workers were equipped with all required safety gear, and the guidelines in the Safety and Health Plan were all followed. Further, prior to the beginning of works, all of the working areas in Cuito had been demined, cleared and certified as mine-free and were thus considered safe by the National Demining Institute (Instituto Nacional de Desminagem, INAD).” Subsequently, recommendations were developed, implemented, and documented, thus enabling the safe resumption of works.

With respect to a grievance redress mechanisms (GRM), the project had already incorporated GRM into project contracts even before the Bank required that all projects include a GRM. The contractors produced



monthly reports that included a section for grievances, the location and nature of the grievance, the complainant’s name, the date the grievance was received, and a description (with photos) of how the grievances were resolved.

b. Fiduciary Compliance

Financial Management. The ICR (page 21) indicates that: “The project generally complied with FM requirements, and, except in the early stages of the project, the FM performance was rated Satisfactory.” The one period when the FM performance was rated Moderately Satisfactory occurred when DNA did not maintain a cashbook and or prepare monthly bank reconciliations. The rating was again Satisfactory when the conditions of effectiveness related to FM were implemented successfully and the FCMU took actions to implement dated FM covenants.

Procurement. The ICR (page 21) reports that: “The project also complied with procurement requirements and showed significant innovation in procurement activities...” and “...procurement performance was rated as Moderately Satisfactory or better throughout project implementation.” At project start-up, there were frequent delays in procurement, with activities occurring behind schedule relative to the procurement plan, especially for the Water Resources Management component. These issues were resolved and the pace of implementation improved by the second half of the project through the FCMU’s close tracking of procurement and contract management activities.

c. Unintended impacts (Positive or Negative)

The project had the unintended impact of stimulating the involvement and financial support of other donors. This is discussed in Section 14 below.

d. Other

11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Highly Satisfactory	Highly Satisfactory	



Bank Performance	Satisfactory	Satisfactory
Quality of M&E	Substantial	Substantial
Quality of ICR	---	Substantial

12. Lessons

The following lessons were derived from the project implementation experience, and were summarized and formulated by IEG based on the ICR's lengthier discussion:

A well-structured theory of change coupled with strong government commitment can significantly enhance prospects for successful project implementation and achievement of objectives. The success of this project was enabled by GOA's strong commitment, consistent support from other stakeholders, and stable continuity between the Financial and Contract Management Unit (FCMU) and the Bank project teams. As a guiding framework, the project's theory of change was effective in capturing the needs for short-term investments to address water supply access constraints while also reflecting the activities to strengthen sector institutions and implement institutional reforms in well-defined stages. This integrated approach helped ensure the long-term sustainability of the new assets and service provision.

Utilities and government agencies require differentiated approaches for achieving their institutional strengthening and capacity-building objectives. In this project, the utilities (i.e., PWSUs) were supported through management contracts (MCs) that incorporated key knowledge exchange and TA activities. This enabled learning-by-doing among PWSU staff, and INRH as well, under the supervision of international experts. For government agencies, institutional strengthening was approached as a separate objective from project implementation. Internationally competitive implementing contractors were tasked with overseeing the implementation of project activities, while using project resources to support the short, medium and long-term capacity building activities needed across sector institutions. This mixed approach could be critical in relatively young infrastructure sectors within fragile, conflict and violence-affected (FCV) countries.

Flexibility to make adjustments is essential for supporting successful project implementation. In this project, the government's adaptability—with the Bank's support through restructuring--allowed the GOA to re-prioritize activities within the various project components, while remaining aligned with the PDO. This flexibility was enabled by the project's effective M&E framework, both at the Results Framework level, and also through the complementary data collection from the INRH's monitoring system, the MC indicators, and other sources.

IEG adds the following lesson that related to the replicability and broader applicability of the project's successful experience:



Well-designed and properly targeted physical infrastructure investments, when accompanied by effective institutional capacity-building and associated reforms, could result in attracting additional support to the sector. As evidence, The ICR (page 18) indicates "The success of the project has led the GOA to replicate the approach in other projects in the sector. Further, the approach has attracted other donors to the sector, namely the AfDB has a project modelled strongly off of WSIDP and for WSIDP-2, the French Development Agency (*Agence Française de Développement*) is a co-financer. Further, the World Bank (WB) has recently approved the first IBRD guarantee in the water sector for support to the sector in Luanda (Luanda Bitá Water Supply Guarantee Project, P163572) and the WB is supporting a pilot PPP arrangement in Cabinda."

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR was well prepared. It was strongly focused on utilizing the project's theory of change and results framework as the reference points for presenting relevant evidence, which were adequately provided and logically organized. The ICR had a clear emphasis on presenting quantitative evidence, while not missing important qualitative ones, e.g., those related to gender impacts and the project's unintended impact of stimulating the involvement and financial support of other donors. The ICR was also candid in its assessment of the project's weaknesses, e.g., the lack of indicators on reliability, and the initial procurement and implementation delays. The reference to specific ISRs at various stages of the project's implementation history was very useful, both in terms of providing documented references, and also as a source of useful insights regarding the project's adaptability and flexibility as conditions changed. Two minor shortcomings were noted. First, it would have been useful to formulate and state clear lessons, in the interest of enhancing their replicability and broad applicability. (IEG derived the statement of the key lessons from the ICR's narrative text.) Second, the ICR would have benefited from proof-reading and content editing, as there were some unclear sentences, superfluous words and repetitions, which partly explain its length of 24 pages that goes significantly beyond the Bank's ICR preparation guideline of about 15 pages

a. Quality of ICR Rating Substantial

