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PROJECT PERFORMANCE ASSESSMENT REPORT



NIGERIA

National Water Sector Reform Project

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Report No. 115782

PROJECT PERFORMANCE ASSESSMENT REPORT

NIGERIA

NATIONAL WATER SECTOR REFORM PROJECT

(IDA-39240 AND IDA-47840)

June 22, 2017

Financial, Private Sector, and Sustainable Development

Independent Evaluation Group

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Currency Equivalents (annual averages)

Currency Unit = Nigerian Naira (₦)

₦1.00 = US\$0.0032

US\$1.00 = ₦314.75

All dollar amounts are U.S. dollars unless otherwise indicated.

Abbreviations and Acronyms

ESWC	Enugu State Water Corporation
FMF	Federal Ministry of Finance
FMWR	Federal Ministry of Water Resources
ICR	Implementation Completion and Results Report
IDA	International Development Association
IEG	Independent Evaluation Group
KSWC	Kaduna State Water Corporation
LGA	Local Government Area
M&E	monitoring and evaluation
O&M	operations and maintenance
OP	Operational Policy
OSWC	Ogun State Water Corporation
PDO	Project Development Objective
PIU	project implementation unit
PPAR	Project Performance Assessment Report
PPP	public-private partnership
RUWASSA	Rural Water Supply and Sanitation Agency
SDG	Sustainable Development Goal
STWSSA	Small Town Water Supply and Sanitation Agency
SWA	State Water Agency
SWC	State Water Corporation (formally State Water Agency)
WCA	Water Consumer Association

Fiscal Year

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Principal Ratings

NATIONAL WATER SECTOR REFORM PROJECT (IDA-39240 AND IDA-47840)

	<i>ICR*</i>	<i>ICR Review*</i>	<i>PPAR</i>
Outcome	Moderately Satisfactory	Moderately Satisfactory	Moderately Unsatisfactory
Risk to Development Outcome	Substantial	Substantial	Substantial
Bank Performance	Moderately Satisfactory	Moderately Satisfactory	Moderately Satisfactory
Borrower Performance	Moderately Satisfactory	Moderately Satisfactory	Moderately Unsatisfactory

* The Implementation Completion and Results (ICR) report is a self-evaluation by the responsible Bank department. The ICR Review is an intermediate IEG product that seeks to independently verify the findings of the ICR.

Key Staff Responsible

<i>Project</i>	<i>Task Manager</i>	<i>Practice Manager/Director</i>	<i>Country Director</i>
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IEG Mission: Improving World Bank Group development results through excellence in independent evaluation.

About this Report

The Independent Evaluation Group (IEG) assesses the programs and activities of the World Bank for two purposes: first, to ensure the integrity of the World Bank's self-evaluation process and to verify that the World Bank's work is producing the expected results, and second, to help develop improved directions, policies, and procedures through the dissemination of lessons drawn from experience. As part of this work, IEG annually assesses 20–25 percent of the World Bank's lending operations through fieldwork. In selecting operations for assessment, preference is given to those that are innovative, large, or complex; those that are relevant to upcoming studies or country evaluations; those for which Executive Directors or World Bank management have requested assessments; and those that are likely to generate important lessons.

To prepare a Project Performance Assessment Report (PPAR), IEG staff examine project files and other documents, visit the borrowing country to discuss the operation with the government, and other in-country stakeholders, interview World Bank staff and other donor agency staff both at headquarters and in local offices as appropriate, and apply other evaluative methods as needed.

Each PPAR is subject to technical peer review, internal IEG panel review, and management approval. Once cleared internally, the PPAR is commented on by the responsible World Bank country management unit. The PPAR is also sent to the borrower for review. IEG incorporates both World Bank and borrower comments as appropriate, and the borrowers' comments are attached to the document that is sent to the World Bank's Board of Executive Directors. After an assessment report has been sent to the Board, it is disclosed to the public.

About the IEG Rating System for Public Sector Evaluations

IEG's use of multiple evaluation methods offers both rigor and a necessary level of flexibility to adapt to lending instrument, project design, or sectoral approach. IEG evaluators all apply the same basic method to arrive at their project ratings. Following is the definition and rating scale used for each evaluation criterion (additional information is available on the IEG website: <http://ieg.worldbankgroup.org>).

Outcome: The extent to which the operation's major relevant objectives were achieved, or are expected to be achieved, efficiently. The rating has three dimensions: relevance, efficacy, and efficiency. *Relevance* includes relevance of objectives and relevance of design. Relevance of objectives is the extent to which the project's objectives are consistent with the country's current development priorities and with current World Bank country and sectoral assistance strategies and corporate goals (expressed in poverty reduction strategy papers, country assistance strategies, sector strategy papers, and operational policies). *Relevance of design* is the extent to which the project's design is consistent with the stated objectives. *Efficacy* is the extent to which the project's objectives were achieved, or are expected to be achieved, taking into account their relative importance. *Efficiency* is the extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared with alternatives. The efficiency dimension is not applied to development policy operations, which provide general budget support. *Possible ratings for outcome:* highly satisfactory, satisfactory, moderately satisfactory, moderately unsatisfactory, unsatisfactory, highly unsatisfactory.

Risk to Development Outcome: The risk, at the time of evaluation, that development outcomes (or expected outcomes) will not be maintained (or realized). *Possible ratings for risk to development outcome:* high, significant, moderate, negligible to low, and not evaluable.

World Bank Performance: The extent to which services provided by the World Bank ensured quality at entry of the operation and supported effective implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of supported activities after loan or credit closing, toward the achievement of development outcomes). The rating has two dimensions: quality at entry and quality of supervision. *Possible ratings for World Bank performance:* highly satisfactory, satisfactory, moderately satisfactory, moderately unsatisfactory, unsatisfactory, and highly unsatisfactory.

Borrower Performance: The extent to which the borrower (including the government and implementing agency or agencies) ensured quality of preparation and implementation, and complied with covenants and agreements, toward the achievement of development outcomes. The rating has two dimensions: government performance and implementing agency(ies) performance. *Possible ratings for borrower performance:* highly satisfactory, satisfactory, moderately satisfactory, moderately unsatisfactory, unsatisfactory, and highly unsatisfactory.

Preface

This is a Project Performance Assessment Report (PPAR) by the Independent Evaluation Group (IEG) for the National Urban Water Sector Reform project in Nigeria, which was approved in June 2004 for a total cost of \$200 million. The project comprised of an initial credit of \$120 million and additional financing of \$80 million from the International Development Association (IDA) in 2010. Total project cost at completion was \$202 million. The project closed in September 2013, three years after the originally planned closing date of September, 2010, following successive extensions of 24 months and 12 months. There were no changes in the objectives or outcome targets of the project.

The project performance assessment is based on a review of relevant documentation, interviews with World Bank staff at headquarters and in the country office, and the findings of an IEG mission that visited Nigeria in November 2016. Project performance was discussed with government and state officials engaged with the projects, staff of the World Bank's country office, and beneficiaries in Kaduna State.

IEG selected the project for a performance assessment because of its potential lessons from an experience in improving urban water supply infrastructure and services in the context of sector reform. In addition, the findings and lessons from this assessment are inputs to IEG's major sector study on the Evaluation of the World Bank Group's Support for Water Supply and Sanitation Services, FY2007–16. Lessons from the experience of this project can inform follow-up operations in Nigeria and countries addressing similar challenges and those with federal systems or decentralizing water supply institutions.

The mission expresses its appreciation of the generous time and attention given by the Borrower and all concerned parties. A list of persons met by the mission is in appendix C.

Copies of the draft PPAR was sent to government officials and implementing agencies for their review, but no comments were received.

Summary

This Project Performance Assessment Report (PPAR) assesses the development effectiveness of the First Nigeria National Urban Sector Reform Project. The project development objectives (PDO) were to increase access to piped water networks in selected urban areas, and improve reliability and financial viability of selected urban water utilities, in Kaduna, Kano, and Ogun States (Development Credit Agreement dated September 2004). The PDO was not modified, but during the first year of the project, Enugu state was added and Kano was dropped. This was reflected in procurement plans and supervision documentation and in the Additional Financing project document in 2010.

The project sought to address challenges facing urban water utilities including lack of cost recovery, maintenance, reliability, and low investment in rehabilitation and expansion. The project marked a scale up of IDA assistance to urban water supply projects in support of government and Bank strategies, by seeking to improve the public sector's effectiveness in providing infrastructure services and by separating asset ownership and operations. It followed a \$5 million small towns water supply pilot project implemented during 2003-2005.

The project was coordinated by the Federal Ministry of Water Resources (FMWR) through a project implementation unit (PIU), which oversaw state-level PIUs located within State Water Authorities (SWAs). The localized institutional arrangements facilitated project implementation and helped address most of the challenges that emerged. However, a lack of autonomy for SWAs vis-à-vis state administrative structures hampered progress toward reform and limited the supervision ability and leverage of the FMWR and the PIU.

Project Performance and Ratings

The overall development outcome is rated *moderately unsatisfactory* based on the following set of findings and assessments:

Relevance of the development objectives is rated **high**. The project development objectives were relevant to the sector and Government priorities including the World Bank's partnership strategies at appraisal, closure, and at the time of this assessment. These priorities and strategies include increasing coverage and efficiency of water supply services.

Relevance of the project's design is **substantial**. The project's components (i.e., rehabilitation and network extension; public-private partnerships (PPPs); capacity building; and policy reform & institutional Development) complemented each other and balanced the need for reform with the expansion and rehabilitation of water infrastructure network. However, a more in-depth assessment of the political economy environment within States may have helped advance reform relating to greater autonomy for SWAs.

Regarding the achievement of project objectives, the *physical access* objective - to increase access to piped water networks in selected urban areas is rated **modest**. While the project initially exceeded outcome targets for new household connections by 40 percent, and partially achieved (80 percent) the target for rehabilitated connections, both these are now reported to have declined. Regarding new customers with connections, only 50,563 are

functional out of an initial achievement of 70,800. Regarding customers benefiting from rehabilitation works 148,000 are functional out of an initial achievement of 208,228.

The *reliability* objective is also rated **modest**. System capacity increased from 13 rehabilitated networks at projection completion as targeted, to 16 since the project closed. However, overall water production, which had grown from 250 to 865 million liters per year during the project, has since declined to 606 million liters per year. In addition, the urban population benefiting from the project had declined from 5.4 million to 4.1 million.

The *financial viability* objective is rated **modest**. Payment collection efficiency reached 78 percent across the three States when the project closed, against a target of 80 percent; however, it has declined to 60 percent by 2016. Operations and Maintenance coverage from revenues increased from an average of 20 percent across the three states to 60 percent at project completion, but has since dropped back to 20 percent by late 2016. The project saw two of five planned PPPs implemented, though these did not involve major investment or risk transfer to the private sector, and it did not sustainably advance reforms on a large scale. State water and sanitation policy legislation, which included the establishment of regulatory bodies, were drafted in all three States as planned, but they were not enacted by the time the project closed.

Efficiency is rated **modest** due to a lack of anticipated tariff increases, shortfall in payment collections, the project's three-year closing date extension, and implementation delays.

Risk to development outcomes is rated **substantial**. Financial risks remain significant mainly due to insufficient cost recovery. The SWAs did not achieve cost recovery by project closing and in some cases levels have since declined. Compliance with the Water Law in Kaduna could allow for greater autonomy and cost recovery but a period of sustained implementation to achieve effectiveness. Operational risks have materialized to a greater extent than anticipated, especially due to limited power supply. While captive power supply has helped in some cases, reliability remains an issue and affects service delivery. Nigeria's economic recession since 2016 has reduced the availability of state budgetary support, increased the costs of energy, and diminish the willingness to pay for public services, including water.

Bank performance is rated **moderately satisfactory** based on moderately satisfactory quality at entry and moderately satisfactory quality of supervision. The Bank considered lessons from previous project experience and analytical work when developing the project's blend of reforms and physical works. Additional work in the early stage of project design could have established baselines and targets, and analyzed State level political environments. The project benefited from robust in-country supervision and efforts to establish reform laws. The Bank could have responded faster than it did in detecting issues leading to delays in contract management prior to project closure.

Borrower performance is rated **moderately unsatisfactory** based on moderately unsatisfactory government performance and moderately satisfactory implementation agency performance. The implementation experience showed that procedures and instructions established by the PIU in FMWR were not always fully understood or followed at State level. While the States showed commitment to the project's objectives, particularly regarding the

expansion and rehabilitation investments, reforms progressed slowly, which continued to affect the sustainability of investments. Project performance varied across the States due to several factors, including the placement of (SWAs) within the state civil services, which reduced accountability and empowerment.

Monitoring and Evaluation is rated **modest** due to the lack of baseline indicators and persistent reporting limitations.

Lessons

- In implementing reforms among multiple state and national stakeholders, necessary institutional restructuring and incentive mechanisms should be addressed upfront. Some of the gains made by the project in terms of service expansion, reliability, and financial sustainability were lost in the three years since the project closed, largely because of the slow pace of reforms. For example, attempts to make quick gains in cost recovery and efficiency through private sector involvement did not yield significant results. Given the longer than anticipated timeframe to implement reforms among multiple stakeholders, the initial focus could have been on restructuring existing institutions and incentives. These changes could have contributed to reducing political and market risks in preparation for longer term reforms.
- In a federal system, greater and sustained engagement at State executive levels is needed to advance reforms. The project and subsequent operations were designed for in-depth engagement in selected states, with limited broader support to the sector. This allowed for focused operations and some substantial progress toward tangible objectives. However, it is beneficial to complement such operations within a programmatic engagement. This would allow the World Bank to build experience with State-level processes and political economies, which could provide a supporting platform and help balance the need to offer services with cost recovery efforts and political outreach, leading to reliable services and investment planning.
- Incentives and accountability can help underpin performance improvements. In Kaduna State, where a water sector law has been recently enacted, staff in the Kaduna State Water Corporation report improved motivation from empowerment and accountability for water service provision. The effect of the new law on staff compensation, retention, and skills mix not yet known; early successes in empowerment, accountability, and professionalization within a project could reduce high turnover and accelerate progress and capacity-building.
- Reliable and valid monitoring is crucial to improve utility performance and accountability to customers. Data collection across the States is still largely inadequate and often focuses on water points and connections, rather than on the quality and viability of service provision. Collecting and sharing data on quality and viability, using internationally comparable indicators routinely, would enable Federal and State governments to manage public discourse on sustainability, costs and performance.
- Prior analytical work helps to formulate a feasible mix of reform and infrastructure investment cycles. Feedback from customers and utility staff suggests that when a new service is provided, acceptance of a short-term price increase is low. Lessons

from similar projects, and best practices need to inform the mix and sequencing of infrastructure investments and reforms.

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1. Background and Context

1.1 With a population of about 180 million people, Nigeria is the largest country in Africa by population and accounts for 47 percent of West Africa's population. It is also the biggest oil exporter in Africa, with the largest natural gas reserves in the continent. The sharp decline in oil prices since the third quarter of 2014 has posed major challenges to the country's external balance and public finances. Oil accounts for close to 90 percent of exports and roughly 75 percent of the country's consolidated budgetary revenues. The GDP numbers indicate that telecommunications, real estate, manufacturing, construction, entertainment increased their shares of GDP. Accelerating the creation of productive jobs through private sector growth and improvements in education (skills) remains the major medium-term challenge

Sector Background

1.2 From 2000-2015, access to water supply in Nigeria increased from 55 percent in 2000 to 69 percent in 2015, largely in line with regional trends (see Table 1) while access to improved sanitation, which saw no large-scale improvement efforts by government or development partners, decreased from 34 to 29 percent. Since 1990, 3.3 million people in Nigeria have gained access to an improved water source per year.

Table 6.1. Water and Sanitation Access Trends

	Access to Improved Water Supply (% of population with access)						Access to Improved Sanitation (% of population with access)					
	ALL		Urban		Rural		ALL		Urban		Rural	
Years	2000	2015	2000	2015	2000	2015	2000	2015	2000	2015	2000	2015
Nigeria	52	69	78	81	38	57	34	29	36	33	33	25
Sub-Saharan Africa	55	68	84	87	42	56	26	30	40	40	19	30

1.3 Nigeria's Federal constitution accords authority over water supply services to the States. The national government focuses on policy development, coordination, and monitoring with the States mandated to provide water supply and sanitation services. Key institutions include:

- *The Federal Ministry of Water Resources (FMWR)* - formulates and delivers policy, data collection, monitoring and co-ordination of water resources development at national level.
- *River Basin Development Authorities* (12 in total) - develop, operate and manage the reservoirs for the supply of bulk water for supply among other uses in their areas of jurisdiction.
- *State Water Agencies* (36 in total plus a Federal Capital Territory) - responsible for urban, semi-urban and rural water supplies.¹ Coverage of SWAs within their respective areas of responsibility varies from less than 20 percent of the population in some States such as to over 80 percent in others (see figure 1). In some States, separate agencies called State Rural Water Supply and Sanitation Agencies

(RUWASSAs) exist for rural water supplies. Several states also have established agencies for small towns namely known as State Small Town Water Supply and Sanitation Agencies (STWSSA)

1.4 The National Water Policy (NWP), first drafted in 2004, was subject to delays and revisions before receiving sufficient priority to be approved in September 2016. The policy requires government to collectively appropriate funds for water supply and sanitation programs of an amount equivalent to not less than 15 percent of total annual appropriations. The document also defines institutional structures including: (i) Water Sanitation Division within the Department of Water Supply in the Ministry of Water Resources; (ii) State Steering Committees on Water and Sanitation, and (iii) Local Government Steering Committees on Water Sanitation.

1.5 Given its current expenditure, Nigeria needs to spend at least 3 times more than it does today to achieve its Sustainable Development Goals (SDGs). Nationally, Nigeria has invested around \$1 billion annually or 0.42 percent of the GDP between 2006 and 2010. A recent World Bank analysis suggest that Nigeria needs to invest in 1.73 percent of its GDP or around \$8 billion to achieve its SDGs. A growing population and an ever-increasing demand for water and sanitation call for a greater effort beyond present endeavors.

1.6 Although not fully assessed, the government estimates Nigeria has adequate surface and ground water to meet domestic demand. These include substantial yearly rainfall, large surface bodies of water-rivers, streams and lakes, groundwater reservoirs whose extent and distribution have not been fully assessed. Water resource management falls under the Federal Ministry of Water Recourse and 11 River Basin Authorities.

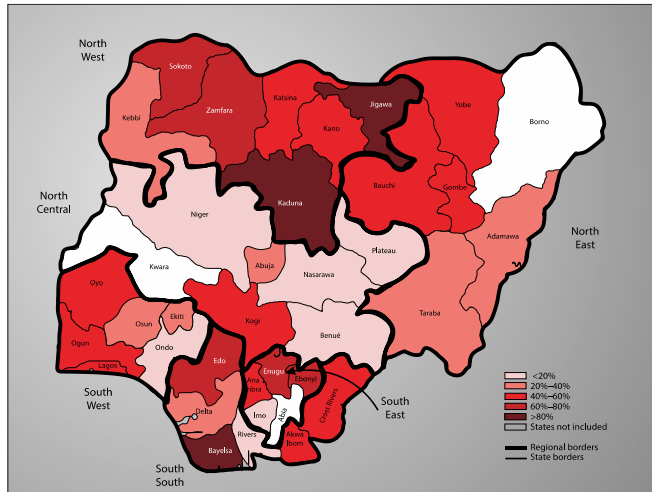
1.7 Nigeria has an urban population growth rate of 4.2 percent² annually, which puts a strain on effort to meet water needs. Between 2004 and 2015, Nigeria's urban population grew from 38 percent of the total population to 48 percent, while urban access to improved just kept pace and increased from 79 to 81 percent (WHO-UNICEF JMP, 2015). According to JMP data, while access to improved sources of water³ at the national level increased, access to piped water connections declined from 32 percent in 1990 to only 1 percent in 2015.

1.8 Water supply to urban areas is provided mainly by the 36 State Water Agencies (SWAs), which draw from surface and ground water. These waterworks serve limited household and commercial, and institutional connections, standpipes and informal networks of suppliers. The supply network faces multiple challenges including dependence on State budget subsidies that do not cover costs; lack of investment in expansion, upgrading and modernization; maintenance issues; unreliable water through existing water schemes; and non-revenue water losses.

1.9 Low coverage by SWAs has resulted in the rise of informal water providers. More than 100 million people live in areas served by SWAs, though only a small proportion receive services. In 2013 formal water services coverage by SWAs dropped from 43 percent in 2011 to less than 39 percent (World Bank, 2015) due in part to lack to low investment and cost recovery to service increasing urban populations. This has resulted in a growing market of private vendors that presently serve up to 30 percent of the urban population (Global Delivery Initiative, 2015).

1.10 The reliance on informal providers can be costly, especially for poor customers. Most poor consumers accessing SWA-provided water do so through standpipes or public taps, some of which charge lower tariff and others do not charge at all. A flat tariff for a connected customer can be as low \$1.20 a month. Those relying on alternative can pay a bulk rate between \$3 to \$8 per cubic meter. Customers cope by purchasing water in small volumes – usually 20 litre plastic cans - that retail for \$0.15–0.25. The resulting expenditure is estimated at 20 percent of typical household incomes (Olajuyigbe & Fasakin, 2010).

Figure 6.1. State Water Authority Coverage



World Bank Support for Nigeria's Water and Sanitation Sector

1.11 The World Bank has been involved in water management in Nigeria since independence in 1960. The Bank's sector focus in recent years has been in urban water supply in response to Nigeria's rapid urbanization. In the rural setting, the World Bank has not supported operations given the prioritization of resources toward urban areas, and will often defer to organizations such as UNICEF when considering development partner strategies in these areas. Stakeholders across the sector recognize the need to address sanitation, though this has not yet been taken up at scale by development partners, including the World Bank. This is in part due to sanitation responsibilities being spread across several government departments without a clear institutional home or coordination mechanism.

1.12 Operations since 2000 included a small towns water supply pilot, followed by a series of larger urban water projects. These have sought to support of government and Bank strategies of seeking to improve the public sector's effectiveness in providing infrastructure services and by separating asset ownership and operations.

1.13 The Bank supported the Federal Ministry of Water Resource's small town water supply and sanitation pilot project from 2000-2003 with a \$5 million IDA credit. The project created the Water Consumers Association (WCA), which is a community-based organization responsible for the management of water and services in small towns. The WCAs were put in charge of selecting their choice of technology, level of service and mode of collecting community contributions. The WCAs also decided on the operational arrangements including the level and mode of tariff payments.

1.14 In 2004, the current series urban operations began with the IDA-financed National Urban Water Sector Reform Project (NUWSRP 1) in Kaduna, Ogun, and Enugu States initially for \$120 million and supplemented by Additional Financing of \$80 million, for a total of \$200 million. This project, which is being evaluated in the report, was followed by the Second National Urban Water Sector Reform Project (NUWSRP 2) in 2005, which applied a similar mix of reforms and infrastructure in Lagos and Cross River States. The ongoing Third National Urban Water Sector Reform, with an approved amount of \$250 million, aims to build on the lessons learned of the implementation of previous projects in the water sector, by increasing support on institutional reforms, performance incentives, and benchmarking. The project is supporting Ekiti, Bauchi, and Rivers States.

2. National Urban Water Sector Reform Project

2.1 The project development objectives (PDOs) in the Development Credit Agreement (DCA) dated September 10, 2004 are stated as follows:

The objectives of the Project are to: (i) increase access to piped water networks in selected urban areas; and (ii) improve reliability and financial viability of selected urban water utilities, in Kaduna, Kano, and Ogun States.

2.2 The project development objectives in the Project Appraisal Document (PAD) are broadly similar, "... (i) improved reliability and financial viability of selected urban water utilities; and (ii) increased access to piped water networks in selected urban areas."

2.3 The PAD goes on to articulate the measurement of the PDOs through, "(i) the increase in water delivered through existing and extended networks; (ii) improvements in cost recovery; and (iii) increase in the number of household connection to the piped water network."

2.4 No changes were made to the PDOs, however the description was revised in the amended DCA dated November 20, 2010, to include Enugu State and remove Kano State, which had dropped out of the project.

2.5 For the purposes of this assessment, the PDO is reviewed as three separate objectives: (i) increased access to piped water networks in selected urban areas; (ii) improved reliability; and (ii) improved financial viability, with (ii) and (iii) pursued in selected urban water utilities.

Relevance of Objectives

2.6 ***The relevance of project development objectives is high.*** The project development objectives were relevant to the sector, Government priorities, and the World Bank's partnership strategies at appraisal, closure, and at the time of this assessment.

2.7 Nigeria has a large and growing population. Capital investments struggle to keep up with population growth and preventative maintenance has not been a priority. At the start of the project, the population with access to safe water was estimated to be 50 percent of the

urban population and 20 percent of the peri-urban population. Existing water facilities were close to operating capacity, required rehabilitation, and suffered from unreliable power supplies. Illegal and unmetered connections, coupled with insufficient cost recovery resulted in operating losses and dependency on state subsidies.

2.8 During appraisal, the Nigerian government was seeking to address these challenges by adopting a strategy of separating infrastructure investment and ownership from service operation. This included improving service delivery through optimal private-public partnerships in investment, management, and delivery of water services.

2.9 The project also sought to develop good governance mechanisms while making provisions for the poor, improve financial autonomy, and enhance the sustainability of the utilities to decrease their dependence on public financing.

2.10 The project is consistent with the World Bank's interim Country Assistance Strategy of 2002, which included expanding private participation and improving the public sector's effectiveness in providing infrastructure services. The project remained relevant to the World Bank's Country Partnership Strategy of 2010-2013, the government of Nigeria's National Transformation Agenda 2011-2015, and Millennium Development Goals. The project goals (increased access, reliability, and fiscal stability) were relevant at the time of project appraisal and remain so at project close. The objectives remain relevant to the current Country Partnership Strategy of 2014-2017, which includes an outcome for improved coverage and efficiency of water supply service in selected states.

Design

2.11 The project consisted for four components.

Component 1. Rehabilitation and Network Extension (cost at appraisal, \$105.5 million; at completion, \$149.4 million). This sequenced component was to first support the three States in restoring and rehabilitating existing water infrastructure to have systems operating at installed capacity. This first phase would also include the purchase of utility vehicles and water tankers, production and zonal meters. Once the public-private partnerships (PPPs) were in place, or if the State Water Authority demonstrated higher levels of operational capacity, efficiency and financial autonomy, then the component was to support system expansion including infill and distribution systems in cities and semi-urban areas. These would include new service connections and customer meters. The component was also to support safety enhancements of dams located in the project states. The component was supported by additional financing to cover the costs of price increases of pipes, electromechanical, and electrical equipment, and rehabilitation work which had to address greater than anticipated deterioration of assets.

Component 2. Public-Private Partnerships (cost at appraisal, \$16.5 million; at completion \$3.6 million). The component aimed to help establish PPPs in each state to increase technical and commercial capacity and ensure system operations and maintenance.

Component 3. Capacity Building & Project Management (cost at appraisal, \$9.85 million; at completion, \$28.5 million) This component sought to support capacity building

and project management in the Federal Ministry of Water Resources and the State Water Authorities. It included project management costs, stakeholder communications, training, and office equipment. The component also supported broader FMWR sector coordination and studies to help prepare for planned national sector reforms. The component saw cost increases for the more significant outreach needed to achieve buy-in on institutional reforms.

Component 4. Policy Reform & Institutional Development (cost at appraisal: \$5.3 million; at completion \$2.5 million). This component was to support the Federal Ministry of Water Resources to develop a low-income household service strategy, assist in establishing State Water Regulatory Authorities, and complete and implement a National Water Policy, which would be followed up with carrying out annual Water Investment Mobilization and Application Guideline conferences.

2.12 Over the life of the project, the components were revised to: (a) replace Kano State with Enugu State early during implementation; and (b) increase estimated costs for Component 1 and obtain additional financing in 2010.

Relevance of Design

2.13 *The relevance of design is substantial.* The State-focused structure reflected lessons from previous operations such as the National Water Rehabilitation Project, which attempted to address some of the institutional weaknesses of urban water utilities. Impact was limited given the broad national focus, leading to the conclusion that a more lasting impact was more likely to be achieved by focusing reform and investment efforts on a few states.

2.14 The project's results framework was well structured, with logical linkages between the activities and the achievement of the development objectives. Within the framework, the three elements of the PDO related to access, reliability, and financial were each supported by an outcome indicator. These outcomes were underpinned by intermediate outcomes and results indicators for each of the four components.

2.15 The project's activities were encapsulated in components that reflected evidence and best practice at the time. Network rehabilitation and expansion considered research indicating that services would need to be improved prior to raising the tariffs and achieving cost recovery. The PPP component reflected good practice in achieving operating efficiency, and the Capacity Building & Project Management component sought to support the Federal and State Water Authorities in carrying out the professionalized operations and regulations. The Policy Reform & Institutional Development component sought to improve sector structures and works toward a separation of regulation and operations, and the achievement of financial viability.

2.16 The project primarily worked with the Federal Ministry of Water Resource and State Water Authorities. Less attention was given at the State executive levels. More assessment of the political-economic environment may have assisted the Federal Ministry and SWAs on the reform aspects of the project.

3. Implementation

Planned versus Actual Costs

3.1 The project cost at completion was \$202.4 million, about 145 percent higher than the appraisal estimate of \$140.0 million. In 2010, SDR 50.5 million (\$80 million) of additional financing was approved as part of a level 1 restructuring. The restructuring was to mitigate for an unexpected increase in the prices of key infrastructure components, a far greater than anticipated need for rehabilitation of the piped networks, and more investments in outreach and generating of buy-in to PPP approaches among stakeholders. There was no explicit change in objectives or targets, despite the project replacing Kanu State with Enugu.

3.2 Borrower (Federal and State level) funding was reduced from an appraised amount of \$20 million to an actual of \$2.4 million.

Implementation Experience

3.3 The project was approved on June 15, 2004. The original closing date of September 30, 2010 was extended by three years to September 30, 2013. A first extension of 24 months revised the closing date to September 30, 2012 along with the additional financing, and a second 12-month extension revised the closing to September 2014 in response to a request by Government to allow for completion of committed activities.

3.4 The project's preparation considered national priorities and sector best practices in place at the time. The Federal government's priorities were to improve services by separating infrastructure investment and ownership from operations. The project was designed to achieve this through five PPPs. In addition, the project incorporated the findings of beneficiary and stakeholder consultations, including the suggestion that infrastructure and service improvements be made prior to implementing cost-recovery measures such as tariffs increases. The resulting project structure provided for a mix of network rehabilitation and expansion, reliability improvements, and financial and institutional reforms.

3.5 The project's objectives were measured through key PDO and intermediate outcome indicators aligned with each of the components. However, at the onset of the project, many of these lacked baselines and targets, which limited the ability of the project to routinely measure progress of performance indicators.

3.6 The preparation recognized risks including the need to prepare public sector entities ahead of private sector participation, the likelihood of intermittent power supply and insufficient tariff adjustments to achieve cost recovery. However, not all mitigation measures proved to be adequate or feasible, and these risks have affected the project outcomes.

3.7 A National Project Implementation Unit was established within the Federal Ministry for Water Resources. The PIU managed overall coordination and reporting. In line with national structures, State PIUs located in the State Water Authorities managed the project's implementation.

3.8 During implementation, the project was responsive in addressing most emerging challenges, although several remain. The Bank and PIU established targets and baselines for several indicators to strengthen the monitoring and evaluation (M&E) system, addressed capacity needs among the State PIUs, and worked with the States to ensure PIU staff were focused on the project. The Bank and FMWR recognized that reforming the structure of public institutions could improve performance, even if PPPs were unfeasible. The project was also restructured to allow for additional financing cover the costs associated with global price increases of pipes, electromechanical, and electrical equipment, and rehabilitation work which had to address greater than anticipated deterioration of assets. Outreach costs also increased among State governments and stakeholders to achieve buy-in on institutional reforms.

3.9 Due to miscommunication, two outstanding payments were registered from Enugu after the project's closing date. These remain an issue and, as of this review, are being addressed through follow-on operations.

3.10 SWAs remained dependent on State governments in terms for financing throughout the project, and were unable to achieve self-sufficiency. While the project improved cost recovery and other areas of management (see Achievement of Objectives below), the short-term political risk at the State level associated with raising tariffs prevented the full implementation of reforms. The budgetary support provided by State governments did not meet all costs, and this was compounded by rising energy costs and the lack of authority of the SWAs to enforce revenue collection from institutional customers.

3.11 Similarly, performance incentives were not tied to service delivery and the SWA remained fully tied to State bureaucracies. For example, following the World Bank's clearance of awards, many contracts were subject to State-level approvals, which created unplanned administrative delays. Staff in the SWAs were also managed by the State government civil service and performance was not necessarily tied to the utility. Staff turnover was high – Ogun had five projects coordinators; Enugu, four; and Kaduna, three - with frequent reassignments to other government departments, and trained staff voluntarily moving to positions with higher compensation.

3.12 The Third National Urban Water Sector Reform Project, currently under implementation, introduced performance incentives in Ekiti, Bauchi, and Rivers States and the experience could provide lessons for the Federal government to consider nationally. However, while subsequent operations have provided some national reform support, measures do not exist to apply incentives performance to other States including in Kaduna, Ogon, and Enugu given that they are linked to investment funding.

3.13 **Safeguards.** The project triggered four Bank Safeguards Policies: (a) OP 4.01 on Environmental Assessment (EA); (b) OP 4.12 on Involuntary Resettlement; (c) OP/BP 4.37 on Safety of Dams; and (d) OP/BP 7.50 on Projects of International Waterways. The project was classified as Category B in respect to OP/BP 4.01 (Environmental Assessment). An Environmental and Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) were prepared during preparation. The project also prepared environmental impact assessments, environment management plans, and resettlement action plans. The civil works planning found that pipelines would follow existing rights of way, and

no resettlement was required. The Bank team included a Senior Environment Specialist. The project team found that compliance was satisfactory and no major issues were reported.

3.14 **Financial Management** compliance under the project was moderately satisfactory. The government, working through the Federal PIU's finance department and project financial management units in State Accountant Generals' offices, submitted quarterly financial reports to the World Bank in a timely manner, and annual audit reports of the project accounts by independent external auditors raised no significant issues. The midterm review noted issues of internal control lapses and failure to follow Bank procedures in Enugu State, which were addressed through regular supervision, audits, and support from the World Bank FM team. However, some budget monitoring issues appear to have remained in Enugu, contributing to the over-commitment of funds at the end of the project.

3.15 **Procurement** was generally conducted in accordance with the World Bank's Guidelines for Procurement under IBRD Loans and IDA Credits and provisions stipulated in the Development Credit Agreement. The FMWR PIU had overall responsibility for management, while the State Water Agencies were responsible at the state level. A Procurement Capacity Assessment was carried out during preparation. When state experience proved to be deficient during implementation, the project strengthened capacity through training and the provision of technical support from experienced consultants. Subsequent periodic reviews found performance to be generally satisfactory and post-procurement review conducted for the project confirmed that there were no major issues procurement in any of the states.

4. Achievement of the Objectives

4.1 Achievement of the project development objectives is rated as follows: (i) to increase access to piped water networks in selected urban areas, where the bulk of project resources were directed--**modest**; (ii) to improve reliability of selected urban water utilities in Kaduna, Enugu, and Ogun States--**modest**; and (iii) to improve financial viability selected urban water utilities in Kaduna, Enugu, and Ogun States--**modest**.

Piped Water Networks in Selected Urban Areas

4.2 In terms of outputs, the project constructed 284 kilometers of new water pipes and rehabilitated 492 kilometers of existing distribution pipes.

4.3 The outcome of this was 70,800 new households becoming registered customers out of a target of 50,000. The IEG assessment found that the SWAs are now reporting that 50,563 of the new customers are still registered.

4.4 In total, 208,228 piped household water connections benefitted from rehabilitation works undertaken under the project (out of target of 250,000). The IEG mission found that this figure had been reduced to 148,000.

4.5 At the time of this assessment, the total number of household connections across the three State Water Authorities (or Corporations) was reported as 176,173, with around 55 percent, or 97,000 of these still active.

Improved Reliability of Selected Urban Water Utilities

4.6 System capacity was increased through the rehabilitation of 13 networks (out of a target of 13) by end of the project in 2013. This increased to 16 networks at the time of this assessment in 2016. Actual water production increased from an average of 250 million liters per year at the start of the project to 865 million liters per year at the close of the project (out of a target of 760). Since the project closed, only Kaduna has seen production and connection increases, and overall water production among the three states, through the existing networks, declined to 606 million liters per year by 2016. This was in part due to decreasing production due to energy costs and reduction in the numbers of active customers.

4.7 In terms of outcomes, at the close of the project, the ICR found that improvements in networks and reliability had resulted in 5.4 million people in urban areas being provided with access to an improved water source, through direct or indirect means. However, the IEG mission found that by 2016, States estimated that number of overall beneficiaries at 4.1 million people, with Kaduna reporting an increase of 2 percent, and Enugu and Ogun reporting decreases of 81 percent and 31 percent.

4.8 The mission discussed the project with Kaduna State Water Corporation Staff and customers. Since 2009, Kaduna saw improvements in efficient use of its capacity. The project saw increases in production capacity, water produced, and household connections (see Table 3). However, it appears that the slow pace of reforms to increase autonomy and accountability affected performance and sustainability. While the SWC saw gains in reducing non-revenue water (NRW) from 2009-12, these were lost by 2015 when NRW reached 65 percent while in active connections increased. Billing and collection efficiency have also declined.

Table 6.2. Project Indicators

Indicator	Target	End of Project (2013)	2016	% change from end of project
Water delivered through existing and extended networks (millions of liters per day)	760	865	606	-30
Number of people (millions) in urban areas provided with access to improved water source	5	5.4	4.1	-24
Number of existing water supply networks rehabilitated to installed capacity	13	13	16	23

4.9 In discussions with connected customers in Kaduna, IEG noted that beneficiaries agreed that that service expansion and reliability and customer service had improved since the project started. Their main areas of complaint were that the network extensions have since been slow, and there is room for improvements in water availability and pressure. Commercial customers in particular stressed the need for greater reliability

through the piped network. They currently supplement their connections with trucked-in water.

Table 6.3. Kaduna State Water Corporation Operating Indicators

	2008	2009	2010	2011	2012	2013	2014	2015
Installed capacity(000 m3/yr	138,940	138,940	138,940	138,940	138,940	138,940	138,940	138,940.
Production capacity	67,677.38	67,677.38	124,092.70	124,092.70	124,092.70	124,092.70	124,092.70	124,092.7
Water Produced	46,363.85	59,819.00	64,124.25	67,223.35	70,823.40	73,418.24	78,400.31	78,753.86
NRW	31.15	42.41	40.1	29.45	32.84	33.86	48.6	65
No. of household connections	96,165	97,221	97,907	95,967	97,224	97,224	97345	114,000
Active connections	40,384	40,432	40,784	37,293	72,782	71,932	71943	63,000
Inactive connections	55,781	56,789	57,123	58,674	24,442	25,292	25,402	51,000
Billing efficiency	68.85	57.59	85	70.55	67.16	66.14	63	37
Collection efficiency	65.4	58.97	75.1	41.61	58.04	61.25	54	47

Source: Kaduna State Water Corporation

Improved Financial Viability of Selected Urban Water Utilities

4.10 The project planned to establish five PPPs as a method for achieving the government priority of separating infrastructure investment and ownership from operations. This target was partially achieved. Enugu engaged a firm to supply, install and maintain prepaid meters. In Kaduna, a firm was engaged from 2008-2011 to operate and maintain treatment plans and booster stations and in the towns of Kaduna and Zaria. In Ogun, internally delegated management contracts between the State Government and nine regions sought to replicate the use of operational autonomy, incentives, and performance monitoring of PPP arrangements. While the PPPs were a step in private sectors involvement, they did not involve major investment of private risk and did not sustainably advance reforms on a large scale. Reforms, where they have advanced, have involved restructuring existing institutions. All three state utilities participated in study tours and training on PPPs, though the extent to which this contributed to outcomes was unclear.

4.11 Several financial capacity improvements were made as planned. Financial models that would allow for break-even analyses were established in the three states, though in some cases data validity and reliability issues created a reliance on assumptions. In Kaduna and Ogun, customer details and asset registers were updated, and M&E systems established. Accounting and billing software was installed for Enugu. Billing and HR systems were improved in Kaduna and Ogun. Staff from the three states also undertook various trainings. However, the outcomes of these activities remain unclear and baselines

were not provided.

4.12 The financial outcomes saw mixed results and many of the gains have not been sustained since the project closed. Collection efficiency (revenue collected to amount billed) reached 78 percent across the three States when the project closed, out a target of 80 percent. However, this declined to 60 percent by 2016. Operations and Maintenance coverage from revenues increased from an average of 20 percent across the three states to 60 percent by the project's end, out of a target of 100 percent, and declined to 20 percent by late 2016 (see Table 4). Cost recovery, defined in the project as cash flow in increase from a zero baseline in 2004, reached 70 million Naira across the three states in 2013 (out of target of 120).

Table 6.4. Currently collected financial indicators (2016)

Indicator	Project Target	End of Project (2013)	Current update (2016)	% Change	State Breakdown (2016)		
					Enugu	Kaduna	Ogun
Billing collection efficiency (%)	80	78	60	-23	13	85	70
O&M coverage from revenue (%)	100	60	20	-66	16	27	17
Non-Revenue Water (%)	-	-	58	-	40	65	70

Note: O&M=operations and maintenance.

4.13 The sector reforms supported by the project have shown some progress. State water and sanitation policies that included the establishment of regulatory bodies were drafted in all three States as planned, but not enacted by the time the project closed. In 2016, this review found varying progress among the three states:

- Kaduna - the State Water and Sanitation Law was enacted and the State Water Corporation (SWC) was established. The corporation is charged with collecting and managing revenues, though the effect of these changes has not yet materialized.
- Ogun – The law is yet to be enacted. The State Water Corporation was established but the SWC does not have the ability to collect and keep revenues.
- Enugu – The law is yet to be enacted. The State Water Corporation was established. The State started allowing the SWC to generate revenues and then scaled this back. Reasons cited by the corporation are the national economic downturn prompting the State to take control of revenues and delay tariff reform. All water revenues go to the State the SWC is dependent on inadequate State budget support.

4.14 At the Federal level, the National Water Policy, which was to be finalized under the project, was approved in 2016, two years after the project closed. Originally drafted in 2004, the policy was subject to a lack of prioritization, negotiations among the States and Federal Government, and revisions over the years. The approved policy enables national-level management of water resources by harmonizing states laws, and allows for the establishment of an agency to regulate the water sector. Previously, water resource management was subject to several overlapping State policies and practices.

5. Efficiency

5.1 *The efficiency of the project in meeting its objectives is modest.* Ex-ante and ex-post economic and financial analyses were carried out focusing on Component 1 (Rehabilitation and Network Extension). A cost-benefit analysis at appraisal to verify whether implementation of the project would have a positive impact on economic viability of utilities, estimated an Economic Rate of Return (ERR) of 22 percent for Kaduna, and 21 percent for Ogun (Enugu was not part of the project). At project completion, the IRR was estimated at 15 percent for Kaduna, 7 percent for Ogun, and 13 percent for Enugu.

Table 6.5. Economic Analysis of Utilities

State	End of Project		Appraisal	
	IRR (%)	NPV (US\$)	IRR (%)	NPV (US\$)
Kaduna	15	23,203,000	22	19,867,000
Ogun	7	(24,764,000)	21	16,556,000
Enugu	13	5,836,000		

5.2 The project carried out another analysis looking at the overall viability of the operation at State level and determined an appraisal ERR of 25 percent in Kaduna and 16 percent in Ogun. At project completion, the ERR was 23 percent in Kaduna, 14 percent in Ogun, and 15 percent in Enugu.

5.3 The appraisal and project completion analyses did not use all the same assumptions or benefits and not easily comparable. In the project completion's ERR for example, health benefits were included which had not been during appraisal.

Table 6.6. Economic Analysis at State Level

State	End of Project		Appraisal	
	ERR (%)	NPV (US\$)	ERR (%)	NPV (US\$)
Kaduna	23	70,990,000	25	21,854,000
Ogun	14	8,697,000	16	18,543,000
Enugu	15	12,189,000		

5.4 Other differences in results are due to the lack of anticipated tariff increases, lower than planned collections, and the project's three-year extension and \$80 million cost increase.

5.5 A sensitivity analysis at appraisal indicated that without a tariff increase, the IRR for Kaduna would be 14 percent and for Ogun, 0 percent. At completion, the sensitivity analysis focused on the minimum increase in billing rate required for the project to remain economically viable as measured through a positive NPV and an ERR equal to the 12 percent cost of capital. This analysis assumed that the collection and operations and maintenance (O&M) costs would remain at 78 and 9 percent. The analysis found that the minimum increase in billing rates required are on average 34 percent across the three states.

Administrative and Implementation Efficiency

5.6 The turnover and lack of utility-specific performance incentives caused implementation delays. Over the life of project, the State PIUs had several Project Coordinators—three in Kaduna, four in Enugu and five in Ogun. Several project-trained staff also left the PIUs. The changes were due to reassignment to other State government

departments, or staff using newly acquired skills to seek better paying positions elsewhere.

5.7 Price escalations, unanticipated rehabilitation needs, and the need for greater reform outreach led to the additional financing and a two-year extension, while project targets remained constant.

5.8 Unanticipated State government procedures were not included in the Project Implementation Manual (PIM), which led to administrative and procurement delays. A second, one-year extension was needed to complete project activities.

6. Ratings

Outcomes

6.1 Relevance of the development objectives is **high**. The project addressed critical challenges and priorities in improving urban water supply in the three states. Relevance of the project's design is **substantial**. The project's components were complementary and balanced the need for reform with network expansion and rehabilitation. Achievement of the physical access objective is **modest**, the reliability objective is **modest**, and the financial viability objective is also **modest** with a lack of sustainability of investments due to the slow pace of reforms. Efficiency is rated **modest** considering factors such as lack of anticipated tariff increases, lower than planned collections, and the project's three-year closing date extension and implementation delays. The overall development outcome is **moderately unsatisfactory**.

Risk to Development Outcome

6.2 *Overall, the risks to the development outcomes remain substantial.* Some of the project's outcomes have declined while others have shown signs of improvement.

6.3 Financial risks remain significant. The utilities did not achieve cost recovery by the close of the project and in some cases, levels have since declined. Collection efficiency has improved to some extent, but challenges remain, particularly with public institutions. In addition, utilities have yet to be able to set tariffs and State budgets are inadequate to cover operational costs, let alone major maintenance, or network expansion. In Enugu and Ogun, some aspects of reforms have been put in place, but the policies and laws developed during the project have not been enacted.

6.4 The potential for significant improvement for cost recovery and autonomy was realized in Kaduna with the issuance of the Water Law in 2016, two years after the project closed. The law provided greater autonomy to the utility and established a regulatory board. While the provisions need a period of sustained implementation before effectiveness can be realized, the passing of the law improves the likelihood sustainability of the financial and service delivery objectives of the project.

6.5 Technical and Operational Risks. Technical risks materialized to a greater extent than anticipated, especially due to limited power supply, which has been exacerbated by the recent economic downturn. While dedicated supply has helped in some cases, reliability still remains an issue and affects service delivery.

6.6 Economic and Social Risks. The national economic recession has affected sectors across the country including the availability of state budgetary support, costs of energy, and possibly willingness to pay. This has also increased political risk with some leaders promoting free services without the means to deliver them. This impacts on utility reform efforts and sustainability, and leaves the majority of urban residents relying on small-scale providers.

Bank Performance

6.7 *The Bank's quality at entry is moderately satisfactory.* The Bank took into account experience and current best practices when designing the project and utilized preparation resources for analytical work that led to the project's blend of reforms and physical works. This project design entailed carrying out network expansion and rehabilitation prior to instituting tariff increases and other cost recovery measures. The project was also designed to support tangible improvements, and institutional restructuring in three States, which would inform national reform efforts and operations in other States.

6.8 The results framework and monitoring and evaluation arrangements had weaknesses, including the lack of baselines and targets. In addition, State-level analysis on the feasibility of various levels of reforms and cost recovery measures may not have been adequate given the challenges encountered in implementing them.

6.9 *The Bank's quality of supervision is moderately satisfactory.* The Bank's supervision across technical, safeguards, fiduciary aspects of the project led to its successful completion. The in-country TTL enabled the World Bank to be proactive in addressing capacity issues and identifying the need for and negotiating a project extension and additional financing. In addition, the World Bank's supervision was persistent in supporting the government to draw up frameworks and draft laws that would be able to advance State-level institutional restructuring and utility reform. While a challenge to implement, the States continued to make progress toward reform indicators in the three years since the project's completion.

6.10 One shortcoming was that the World Bank was slow to detect contract management issues, which were not resolved prior the project's closure and were being addressed through subsequent operations.

6.11 Overall Bank Performance is *moderately satisfactory*.

Borrower Performance

6.12 *The Government's performance is moderately unsatisfactory.* The FMWR and the Federal Ministry of Finance complied with Bank procedures and fiduciary aspects. The FMWR established a national PIU that was adequate in supervising the project and raising concerns.

6.13 However, the implementation experience showed that procedures and instructions established by the PIU were not fully understood or followed at the State level, and the PIU

sometimes found itself outside of the communications loop on project issues, largely because the FMWR did not have authority or span of control across the state civil service.

6.14 The States showed commitment to the project's objectives, particularly expansion and rehabilitation investments. However, reforms progressed slowly and there were often mixed signals communicated within states regarding the need to achieve cost recovery. IEG found that since the project's closure states have demonstrated higher commitment to reforms, particularly in Kaduna with the passing of the Water Law, though challenges remain such as lack of resources for investment, high water losses, low recovery of O&M costs.

6.15 **Implementing agency performance is moderately satisfactory.** State-level PIUs all demonstrated commitment to the project. Performance varied and was often due to a mix of factors including the placement of SWAs within the state civil services, which reduced accountability and empowerment. SWAs remained dependent on State governments in terms for financing throughout the project, and were unable to achieve self-sufficiency.

6.16 Staff turnover was high: Ogun had five projects coordinators; Enugu, four; and Kaduna, three—with frequent reassignments to other government departments. Trained staff voluntarily moved to positions with higher compensation. The turnover and lack of utility-specific performance incentives caused implementation delays.

6.17 Overall Borrower performance is *moderately unsatisfactory*.⁴

Monitoring and Evaluation

6.18 **M&E Design.** The project's results framework broadly supported the measurement of the achievement of objectives. The key PDO indicators were linked to the objectives, and several supporting intermediate outcome indicators were aligned with each of the components. Overall coordination of monitoring and submission for reports was the responsibility of the FMWR, while State-level monitoring was the responsibility of the SWAs. The project also commissioned a beneficiary assessment

6.19 A number of shortcomings, which were in part due to limitations on data availability and reliability that still existed at the time of this assessment, affected the M&E system. These included the lack of baseline and targets for several indicators, some of which were corrected during the restructuring. In addition, the extent to which the financial viability and reliable indicators where adequate measure of progress was limited, especially given the lack of baselines.

6.20 **M&E Implementation.** The FMWR compiled regular progress reports, but there were gaps, especially related to lack of reliable data on financial performance and Enugu's contract management. This was in part due to the SWA's remaining as State-level departments and the FMWR's limited span of control.

6.21 Some data was the result of estimates, due to the lack of measurement technologies such as bulk meters. IEG found that State agencies continued to lack robust monitoring systems, and in some cases still struggle to produce data, particularly regarding reliability

and financial performance. Several of the project indicators covering these areas could not be readily updated.

6.22 **M&E Utilization.** The M&E systems were primarily used for Bank reporting. The experience informed M&E in subsequent operations, including the need for early establishment of targets and indicators and the use of technical audits.

6.23 The project's beneficiary assessment provided snapshot into areas such as customer satisfaction, but the assessment's application potential was limited due to the lack of information on sample sizes and sampling, as well as comparable beneficiary perceptions on performance before and after the project.

6.24 The project's experience has been taken into account in follow-on operations, particularly the Third Urban Water Reform Project, which as introduced performance incentives in Ekiti, Bauchi, and Rivers States. While subsequent operations have provided some national reform support, measures do not exist to apply incentives to performance in other States including in Kaduna, Ogon, and Enugu given that they are linked to investment funding.

6.25 **Overall, M&E is modest.** The weaknesses in M&E were taken into account in the determination of the ratings for each of the objectives, and the overall outcome rating.

7. Lessons

- **In implementing reforms among multiple state and national stakeholders, necessary institutional restructuring and incentive mechanisms should be addressed upfront.** Some of the gains made by the project in terms of service expansion, reliability, and financial sustainability were lost in the three years since the project closed, largely because of the slow pace of reforms. For example, attempts to make quick gains in cost recovery and efficiency through private sector involvement did not yield significant results. Given the longer than anticipated timeframe to implement reforms among multiple stakeholders, the initial focus could have been on restructuring existing institutions and incentives. These changes, in turn, could have contributed to reducing the political and market risks in preparation for longer term reforms.
- **In a federal system, greater and sustained engagement at State executive levels is needed to advance reforms.** The project and subsequent operations were designed for in-depth engagement in selected states, with limited broader support to the sector. This allowed for focused operations and some substantial progress toward tangible objectives. However, it is beneficial to complement such operations within a programmatic engagement. This would allow the World Bank to build experience with State-level processes and political economies, which could provide a supporting platform and help balance the need to offer services with cost recovery efforts and political outreach, leading to reliable services and investment planning.
- **Incentives and accountability can help underpin performance improvements.** In Kaduna State, where a water sector law has been recently enacted, staff in the Kaduna State Water Corporation report improved motivation from empowerment and

accountability for water service provision. The effect of the new law on staff compensation, retention, and skills mix not yet known; early successes in empowerment, accountability, and professionalization within a project could reduce high turnover and accelerate progress and capacity-building.

- **Reliable and valid monitoring is crucial to improve utility performance and accountability to customers.** Data collection across the States is still largely inadequate and often focuses on water points and connections, rather than on the quality and viability of service provision. Collecting and sharing data on quality and viability, using internationally comparable indicators routinely, would enable Federal and State governments to manage public discourse on sustainability, costs and performance.
- **Prior analytical work helps to formulate a feasible mix of reform and infrastructure investment cycles.** Feedback from customers and utility staff suggests that when a new service is provided, acceptance of a short-term price increase is low. Lessons from similar projects, and best practices need to inform the mix and sequencing of infrastructure investments and reforms.

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¹ Nigeria: Performance Assessment of the State Water Agencies (2015).

² Unicef: https://www.unicef.org/infobycountry/nigeria_statistics.html

³ Drinking water from an “improved” source: piped water into dwelling, piped water to yard/plot, public tap or standpipe, tubewell or borehole, protected dug well, protected spring, or rainwater (www.wssinfo.org).

⁴ According to the IEG-OPCS harmonized evaluation guidelines, if one of government performance or implementing agency performance is rated less than moderately satisfactory, overall borrower performance is given the lower rating, if development outcome rating is moderately unsatisfactory or lower.

Appendix A. Basic Data Sheet

National Water Sector Reform Project (IDA-39240 AND IDA-47840)

Key Project Data (amounts in US\$, millions)

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of appraisal estimate</i>
Total project costs	140	202.4	145
Loan amount	120	200	167
Cofinancing	20	2.4	12

Cumulative Estimated and Actual Disbursements

	<i>FY 2005</i>	<i>FY2006</i>	<i>FY2007</i>	<i>FY2008</i>	<i>FY2009</i>	<i>FY2010</i>	<i>FY2011</i>	<i>FY2012</i>	<i>FY2013</i>
Appraisal estimate (US\$, millions)		30	65	105	170	200	200	200	200
Actual (US\$, millions)	4.88	9.91	20.66	40.74	75.12	109.33	124.02	151.59	202.43
Actual as % of appraisal	0	0	66	61	71	64	62	75	100
Date of final disbursement: 12/15/2013									

Project Dates

	<i>Original</i>	<i>Actual</i>
Board approval		6/15/2004
Effectiveness	12/14/2010	12/14/2004
Closing date	9/30/2010	9/30/2013

Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of staff weeks	US\$, thousands (Including Travel and Consultant Costs)
Lending		
FY01	19.49	153.48
FY02	13.54	174.37
FY03	33.23	179.19

FY04	40.50	317.64
Total:	106.76	824.68
Supervision/ICR		
FY05	35.73	207.17
FY06	46.62	191.73
FY07	38.42	123.76
FY08	32.72	95.41
FY09	36.30	139.85
FY10	17.97	77.53
FY11	19.16	102.76
FY12	19.97	104.66
FY13	20.43	97.20
FY14	15.21	86.67
Total:	282.53	1,226.74

Borrower/Executing Agency:

- **Follow-on Operations**

<i>Operation</i>	<i>Credit no.</i>	<i>Amount (US\$, millions)</i>	<i>Board date</i>
Nigeria: Second National Urban Water sector reform project	5129-NG 4086 UNI	204.95	6/19/2012
Nigeria: Third National Urban Water sector reform project	5416-NG	250	3/26/2014

Task Team Members

Names	Title	Unit	Responsibility/ Specialty
Lending			
Alex McPhail	Team Leader	AFTU2	Team Leader
Hassan Kida	Sanitary Engineer	AFTU2	Sanitary Engineer
David Henley	Sr. Sanitary Engineer (Consultant)	AFTU2	Consultant
Pinki Chaudhuri	Sr. Regulatory Specialist (Consultant)	AFTU2	Regulatory Specialist
Wole Afolabi	Financial Analyst (Consultant)	AFTU2	Financial Analyst
Chau-Ching Shen	Sr. Finance Officer	LOAG2	Finance
Ernestina Attafuah	Sr. Program Assistant	AFTU2	Program Assistant
Edward Olowo-Okere	Sr. Financial Management Specialist	AFTFM	Financial Management Specialist
Adenike Sherifat Mustafa	Financial Management Specialist	AFTFM	Financial Management Specialist

Bayo Awosemusi	Procurement Specialist	AFTPC	Procurement Specialist
Comfort Ede	Program Assistant	AFC12	Program Assistant
Serigne Omar Fye	Sr. Environmental Specialist	AFTS 1	Environmental Specialist
Sameena Dost	Counsel	LEGAF	Counsel
Eric Haythorne	Senior Counsel	LEGPS	Senior Counsel
Supervision/ICR			
Amos Abu	Senior Environmental Specialist	AFTN1	Environmental Safeguards
Ruth Adetola Adeleru	Team Assistant	AFCW2	Team Assistant
Oluwole Temiloluwa Afolabi	Consultant	AFTME	Consultant
Akinrinmola Oyenuga Akinyele	Senior Financial Management Specialist	AFTMW	Financial Management
Macmillan Ikemefule Anyanwu	Senior Operations Officer	AFMLS	Senior Operations Officer
Mary Asanato-Adiwu	Senior Procurement Specialist	AFTPW	Procurement
John A. Boyle	Consultant	AFTWR-HIS	Consultant
Maya El-Azzazi	Program Assistant	MNSSU	Program Assistant
Jan Franck	Consultant	MNSSD	Consultant
Saidu Dani Goje	Consultant	AFTMW	Consultant
Esther Illouz Loening	Infrastructure Specialist	GPOBA	Infrastructure Specialist
Jan G. Janssens	Consultant	WBIUR	Consultant
Hassan Madu Kida	Lead Water and Sanitation Specialist	AFTU2	Task Team Leader
Alexander A. McPhail	Lead Water and Sanitation Specialist	MNSWA	Task Team Leader
Paul D. Mitchell	Consultant	EASPS	Consultant
Masud Mozammel	Senior Communications Officer	ECROC	Communications
Fumiko Nagano	Consultant	ECROC	Consultant
Chukwudi H. Okafor	Senior Social Development Specialist	AFTCS	Social Development
Africa Eshogba Olojoba	Senior Environmental Specialist	MNSEE	Environmental Safeguards
Adetunji A. Oredipe	Senior Operations Officer	AFCW2	Senior Operations Officer
Lars A. V. Rasmusson	Consultant	AFTG1	Consultant
Obadiah Tohomdet	Senior Communications Officer	AFRSC	Communications
Armele Vilceus	Senior Program Assistant	LCC3C	Senior Program Assistant
Mary Oluseyi Zackius-Shittu	Human Resources Associate	HRSEP	Human Resources

Appendix B: Project Performance Assessment Report Workshop Highlights

Background

A PPAR Workshop of the NUWSRP1 was held at Abuja Nigeria, on 9th November 2016.

The objective of the workshop was to review the sustainability of project outcomes, the risks and the service delivery model. The workshop discussions also provided contributions to a case study on the World Bank Group's support to water and sanitation in Nigeria, as part of IEG's global assessment of Bank support to sustainable water and sanitation services.

The workshop hosted a total of 16 participants comprising officials of FMWR, Ogun State Water Corporation, Kaduna State Water Corporation, Enugu State Water Corporation and the WB/IEG Group.

Sector Introduction

The FMWR provided an overview and history which of the evolving water supply and sanitation sector in Nigeria

The current level of access:

- Access to Water Supply Service – 69 percent
- Access to Sanitation Service – 25 percent
- Open defecation – still not abating

Timeline over the last 30 years:

1988- Nationwide (Sector Assessment Study) was conducted. The key conclusions were that level of service was very low and the water institutions, were very weak.

1991- A nationwide project (NWRP) became effective with approximately \$10 million was allocated to each state. On completion, the project was assessed to be partially satisfactory. However, the low sustainability of infrastructure led to Federal recognition for sector institutional reform.

2004– 2013 - The first reform project (NUWSRP1) was implemented. The focus was on a few states to deepen engagement and impact (Ogun, Kaduna and Enugu). On completion, there was improvement in KPIs, but these were not sustainable. Several factors responsible for non-sustainability including poor and erratic power supply, and limited distribution network.

2005– 2016 -NUWSRP2 was implemented in cross rivers in Lagos State.

2015 -NUWSRP3 became effective and covered Ekiti, Bauchi, Rivers with potentially 9 other states in the pipeline.

Outlook and key challenges

- Despite investments leading to improved water production and distribution, several issues need to be addressed, especially on regarding utility management related to billing and collection and non-sustainable tariffs.
- The main sector reform challenges, from perspective of technical level government and WBG staff concern political leadership and the lack of autonomy of SWAs. The politicization of water supply service has prevented authorities from allowing appropriate tariff structures to be implemented by the SWAs. Leaders sometimes do not have a deep appreciation of the sector challenges and the supporting policies and laws. They have promised free water supply service without considering the financial implications and sustainability of their promises. At the same time, authorities do not provide adequate subsidies to make up for shortfalls in revenues.

Challenges Encountered During Implementation of NUWSRP1

- Escalation of prices of waterworks components, spare parts and consumables. Most were externally sourced affected by foreign exchange fluctuations as Nigeria currency was undergoing gradual devaluation. This led to additional financing under the project, and remains a challenge.
- Sustainability of Investment. Low cost recovery and the inability to formulate sound maintenance plans, backed up by state-of-the art knowledge and tools, have denied SWAs of infrastructure sustainability over the years. In some states, key assets had to be rehabilitated under consecutive project interventions.

Way Forward

- Improve on the collection of operational performance data and commutate these to leaders and other stakeholders. FMWR should provide awards for best performing states.
- Direct engagement with political leaders – perhaps through annual workshops with governors to discuss on the sector challenges and sustainability issues.
- Encourage local manufacturing of equipment to reduce exchange rate risks

Appendix C: List of Persons Met

Federal Government

Engr. B.A. Ajesehiri, Director, WS & PPP, Federal Ministry of Water Resources
Abdulfatah Abdulsalam, Assistant Director (Infrastructure), IERD, Federal Ministry of Finance
Fashoyi O. Adewale, Ag NPC, FPIU/Federal Ministry of Water Resources
Engr. Udoka Ejike, Project Engineer, FPIU
Dahiru Abdulkareem, Federal Ministry of Water Resources

Enugu State

Barr. Egumbe COC, Commissioner, MINISTRY OF WATER, ENUGU
Eze Chidozie Managing Director, Enugu State Water Corporation
Eze Charles, Project Coordinator, Enugu State Water Corporation

Kaduna State

Engr. Kabiru Ahmed Rufai, Former Project Coordinator/ICSWB, Kaduna State Water Board
Eutychnus John, M&E Officer, Kaduna State Water Corporation
Engr. Musa S.B., Ag MD. Kaduna State Water Corporation
Emmanuel J. Saliynk, Director (Comm), Kaduna State Water Corporation
Nasirudeen M. Zubair, Ag. CIA, Kaduna State Water Corporation
Dauda Y. Bello, Ag. Chief Com. Officer, Kaduna State Water Corporation
Gidado Suleman, Kaduna State Water Corporation
Amin S. Soka, Kaduna State Water Corporation
Liberty Tanko, Kaduna State Water Corporation
Nasiru Saleh, Kaduna State Water Corporation
Abubakar A. Sadiq, Kaduna State Water Corporation

Ogun State

Engr. (Mrs.) M.O. Agboola, General Manager, Ogun State Water Corporation
Engr. Maku. O.O., HPIU, Ogun State Water Corporation
Oluwagbenro T.O., Project Accountant, Ogun State Water Corporation

World Bank

Mr. Rachid Benmessaoud, Country Director, World Bank
Mr. Pier Montovani, Lead Specialist, World Bank
Mr. Hassan Kida, Senior Water and Sanitation Specialist and Task Team Leader (Retired), World Bank
Mr. Khairy Al-Jamal, Senior Water and Sanitation Specialist and Task Team Leader, World Bank
Mr. Michel Duret, Senior Water and Sanitation Specialist, World Bank

Note: During the assessment, IEG mission members met with several customers of the Kaduna State Water Corporation.