



# IDEV

Independent Development Evaluation  
African Development Bank

*From experience to knowledge...  
From knowledge to action...  
From action to **impact***



## Evaluation of the AfDB's Support to the Water Sector (2005-2016)

### Beyond Infrastructure Development: Toward Service Delivery and Behavioral Change

Summary Report



AFRICAN DEVELOPMENT BANK GROUP

January 2020

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AFRICAN DEVELOPMENT BANK GROUP

January 2020

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**Evaluation of the AfDB's Support to the Water Sector (2005-2016)**  
**Beyond Infrastructure Development: Toward Service Delivery and Behavioral Change – Summary Report**  
An IDEV Sector Evaluation, January 2020

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## Abbreviations and Acronyms

<b>AfDB</b>	African Development Bank	<b>NGO</b>	Non-governmental Organization
<b>AMCOW</b>	African Ministers' Council on Water	<b>NRW</b>	Non-revenue water
<b>AWM</b>	Agricultural Water Management	<b>OWAS</b>	Water Supply and Sanitation Department
<b>AWV</b>	Africa Water Vision	<b>PAR</b>	Project Appraisal Report
<b>CCS</b>	Country Case Study	<b>PER</b>	Project Evaluation Report
<b>CSO</b>	Civil Society Organization	<b>PPP</b>	Public-Private Partnership
<b>CSP</b>	Country Strategy Paper	<b>RMC</b>	Regional Member Country
<b>DBDM</b>	Development and Business Delivery Model	<b>RWSS</b>	Rural Water Supply and Sanitation
<b>DER</b>	Development Effectiveness Report	<b>SDG</b>	Sustainable Development Goal
<b>EIRR</b>	Economic Internal Rate of Return	<b>UA</b>	Unit of Account
<b>ESW</b>	Economic and Sector Work	<b>UN</b>	United Nations
<b>FY</b>	Financial Year	<b>USD</b>	United States Dollar
<b>GDP</b>	Gross Domestic Product	<b>UWSS</b>	Urban Water Supply and Sanitation
<b>IDEV</b>	Independent Development Evaluation	<b>WASH</b>	Water Sanitation and Hygiene Promotion
<b>IWRM</b>	Integrated Water Resources Management	<b>WHO</b>	World Health Organization
<b>M&amp;E</b>	Monitoring and Evaluation	<b>WSS</b>	Water Supply and Sanitation
<b>MDGs</b>	Millennium Development Goals	<b>WUA</b>	Water Users' Association





# Executive Summary

## Background

This report summarizes the evidence, findings and lessons learned from an independent evaluation of support provided by the African Development Bank Group (AfDB, or “the Bank”) to the water sector for the period 2005-2016. In this evaluation, the water sector consists of water supply and sanitation (WSS) in both rural and urban contexts, and agricultural water management (AWM). Thus, other water-related activities (water for electricity, transport, industry, tourism, etc.) are excluded. The evaluation covers a period of 12 years, from 2005 to 2016.

This evaluation aims to inform the Bank’s strategies and operational approach to water sector assistance by taking stock of the results of the Bank’s assistance and drawing lessons for future work. It is intended to help the Bank’s Management to: (i) account for the development results of the Bank’s investment in the water sector, by determining the extent to which the Bank has contributed to the development of the water sector in Regional Member Countries (RMCs); and (ii) learn from its operational experience by identifying lessons on how the Bank can contribute most effectively to improving the performance of the water sector in RMCs.

## Scope of the Evaluation

The report focuses on two broad areas including (i) results achieved; and (ii) how the Bank manages performance and the factors that influence performance.

## Methodology

The evaluation used a Theory of Change (ToC) approach, combined with the standard OECD-DAC evaluation criteria: relevance, effectiveness and

efficiency of the Bank’s assistance to the water sector, and the sustainability of the benefits. In the absence of an explicit ToC in the Bank’s policy, strategy and appraisal reports guiding many of the operations reviewed in the evaluation, the evaluation team reconstructed a WSS and AWM ToC. The four OECD-DAC evaluation criteria provide the basis for the evaluation questions.

The evaluation used multiple sources of evidence including: (i) policy and literature review; (ii) portfolio review; (iii) 10 country case studies; and (iv) 41 project evaluation reports (PERs) comprising 16 rural WSS, 15 urban WSS and 9 AWM projects, and a Water Sector Adjustment program. All projects (except for the Morocco Water Sector Adjustment Loan) were clustered into three stand-alone thematic evaluations: (i) [Rural Water Supply and Sanitation \(RWSS\)](#); (ii) [Urban Water Supply and Sanitation \(UWSS\)](#); and (iii) [Agricultural Water Management \(AWM\)](#). The selected country case studies comprise Cameroon, Kenya, Mali, Morocco, Mozambique, Nigeria, Rwanda, Senegal, Uganda and Zambia. In addition to the stakeholder meetings conducted during the project site visits, almost 200 individuals were interviewed through the country case studies. Software for analysis of qualitative data (Atlas.ti) and matrix tables were used in synthesizing the evidence. Further information about the methodology and the rating scale applied can be found in Annexes 2, 3 and 5.

The main limitations faced by the evaluation include: (i) the challenge of capturing the large inventory of contexts with the aim of explaining how the Bank’s interventions performed; and (ii) limited (clusters’ size) and inadequate program/project performance data (in terms of quantity and quality) especially at outcome level, which may have an impact on the comprehensiveness of judgements made. This latter limitation was addressed through the triangulation of evidence from multiple sources and by using mixed methods.

## Achievement of the Bank's Objectives

The Bank's 2005-2016 water sector interventions are relevant. They delivered substantial outputs, although the output levels fell below what was anticipated for the sample of 41 PERs. The achievement of outcomes is however moderate, leading to overall effectiveness being rated as unsatisfactory. The results achieved are unlikely to be sustained. Multiple factors, both internal and external, account for this results performance.

### Relevance

**The relevance of the Bank's support to the water sector was examined at three levels: strategic objectives, the objectives of projects, and the design of projects.** The objectives of the Bank's water sector strategic documents (policies, strategies and initiatives) and water interventions were found to be aligned to its corporate policies and strategies, the priorities of RMCs, and international goals.

The objectives of projects supported by the Bank were aligned with beneficiary needs. However, project design often did not adequately reflect those needs. Thus, despite the Bank-supported water interventions being based on a demand-driven approach with clear objectives, most of their designs were inadequate<sup>1</sup>. Only 44 percent of the sample of 41 projects were rated as satisfactory or higher in terms of the relevance of design (47% for UWSS, 38% for RWSS and 44% for AWM). This may be due to the observation that feasibility studies that normally provide the basis for the Bank's water projects were sometimes not updated, rushed or skipped important steps, thus contributing to design quality deficiencies. Nonetheless, some innovations in designing Bank projects were identified in the case of Zimbabwe (implementation arrangement) and Rwanda (introduction of public-private partnership, or PPP).

In responding to the RMCs' Water Sanitation and Hygiene Promotion (WASH) needs, the Bank's support tended to focus more on water supply, and less on sanitation. This could be due to tight government budget constraints relative to the huge public funding gap. It could also be attributed to the way the demand-driven approach was operationalized, and to the shortcomings of approaches used for sanitation in RMCs. In particular, in line with national policies, support for rural sanitation focused mainly on public toilets and promotional activities and campaigns, with the construction of household latrines being the responsibility of households. This approach led to the construction of a limited number of household latrines compared with the beneficiaries' needs. This, therefore, affected the achievement of intermediate outcomes, especially in reflecting the fundamental importance of sanitation in addressing the issue of waterborne diseases, a key target of the Bank's support for the water sector. In addition, although examples of Bank projects specifically targeting private sector development were cited in Morocco, Mali and Nigeria, the support provided to the private sector was insufficient, especially in the area of project design. The policy and literature review revealed that, within the water sector, helping to develop and supporting small and medium-sized enterprises (SMEs) enhances local entrepreneurship for, among others, well and latrine building, repair services, and supply of spare parts. In fact, while the private sector has taken on an increasingly important role in water infrastructure operation and maintenance, more capacity needs to be built. Finally, project design was also found to be weak in terms of beneficiary engagement and risk assessment.

**Overall, the relevance of the Bank's support to the water sector was rated satisfactory.**

### Effectiveness

**The effectiveness of the Bank's support to the water sector (WSS and AWM) was assessed along three dimensions: achievement of high-level objectives, achievement of outputs, and achievement of outcomes.**

Furthermore, in the areas of UWSS and RWSS, a distinction was made between the water and the sanitation components. The assessment of achievement of outcomes was made by investigating change factors related to outcomes. For WSS interventions, the outcomes include: (i) increased access to and use of improved water sources; (ii) improved water services delivery; (iii) increased access to improved sanitation services; and (iv) increased adoption of key hygiene behaviors/practices. Regarding AWM interventions, the outcomes include: (i) increased access to water for irrigation; (ii) improved AWM services delivery; (iii) increased agricultural production and productivity; and (iv) increased income generation for project beneficiaries.

#### *What worked well*

**The Bank's UWSS and RWSS support was deemed satisfactory at the output level for the construction of water infrastructure, capacity development and awareness promotion.**

- UWSS projects delivered a significant number of water supply infrastructure outputs. All the projects, except for Kenya and Senegal, achieved more than 75% of their expected physical infrastructure outputs. The Bank also provided institutional strengthening, although with limited capacity building activities, for improved service delivery, and better operations and maintenance.
- RWSS projects also delivered the essential physical infrastructure for improving access to reliable and affordable water supply in rural areas.
- The RWSS projects also produced substantial outputs in terms of capacity development and awareness. These exceeded their targets (by 12% on average) in the number of people trained on the management of WSS systems and facilities (around 11,600) and masons (more than 3,000).

**The achievement of the Bank's UWSS support for water was similarly satisfactory at the outcome level.**

- UWSS projects' performance in terms of improved access to potable water is satisfactory. The project cluster evaluation estimated the UWSS support to have provided potable water to about 6 million people, about 79% of the target of around 8 million people, in the project areas. This performance was spatially uneven in terms of distribution, and challenged by the failure to deliver uninterrupted potable water supply. Only four of the 11 projects (36%) in the UWSS cluster met or exceeded their anticipated beneficiary targets, while 72% of the cluster projects met at least 75% of their anticipated beneficiaries.

**Increased access to improved water sources helped to reduce the drudgery of fetching water in rural areas.**

- Regarding access to safe drinking water, the RWSS project cluster provided an estimated coverage of 14 million people (83%) out of a target population of 17 million. Around nine of the 15 projects (60%) in the RWSS cluster met or exceeded their expected beneficiaries. In addition, 80% of the cluster projects met at least 75% of expected beneficiaries.
- In terms of the drudgery of water transportation, all 16 RWSS projects, except Zimbabwe, reduced the time required for fetching water.

#### *What did not work well*

**The contribution of the Bank's WSS support was unsatisfactory at the output level for both urban and rural sanitation components.**

- Urban WSS projects delivered low levels of sanitation outputs (including wastewater treatment plants, sewerage networks, sewer pumping stations, public toilets, households'

latrines and hand-washing facilities, etc.) compared with targets. Only 42% (five out of 12 projects) of the UWSS cluster projects achieved more than 75% of the expected sanitation physical outputs.

- The physical outputs of RWSS projects' sanitation components (including public toilets and households' latrines) were of moderate quantity. Around 64% (nine out of 14 projects) of the RWSS cluster projects achieved more than 75% of the expected sanitation facilities.

**The Bank's RWSS interventions did not significantly increase the number of household latrines for the rural population.** The number of household latrines effectively constructed through the RWSS cluster projects was relatively low (90,910 latrines) compared with the real needs and below the target (70% achievement).

The limited number of household latrines could partly be attributed to the approaches used in the Bank-funded sanitation interventions in rural and urban areas, given the relatively small budget allocations of RMCs for sanitation. These different strands of approaches are as follows:

- Community-based behavior change approaches used by six of 17 rural and urban cluster projects (35%), which create demand for sanitation and hygiene behavior. In this case, the Bank financed only hygiene education and sanitation improvement promotion activities to support the construction of improved facilities by households.
- Financing approaches that use specific financing mechanisms (targeting hardware subsidies, loan schemes, etc.) to increase uptake of sanitation mainly among unserved or vulnerable populations. In this group, eight of 17 WSS cluster projects (47%) were concerned.
- Market-based approaches that develop or strengthen the market and supply chain for sanitation products and services (6% of WSS cluster projects).

- Some of the Bank's rural sanitation interventions (12%) combined more than one of the three approaches.

**The achievement of the Bank's AWM support was unsatisfactory at the output level.** The overall project cluster delivered 68% of the target outputs (including rural infrastructure such as feeder roads, wells, toilets, storage and drying facilities, rural markets, etc.). This overall AWM output level achievement was adversely affected by incomplete (46% achievement) land development (including irrigation schemes, drainage and flood control and water storage facilities) for water for irrigation.

**The overall achievement of the Bank's support was unsatisfactory at the outcome level for RWSS, AWM and Urban Sanitation.** Despite supporting substantial capacity development and awareness campaigns, project service delivery and beneficiary behavior change remained limited, thus contributing to the non-achievement of the expected intermediate outcomes.

- Performance of RWSS interventions in providing effective and sustained access to improved water sources was adversely affected by poor service delivery (on average, around one-third of facilities used to be non-functional, poor water quality, etc.).
- RWSS intermediate outcomes were limited by: (i) insufficient access to sanitation services including insufficient number of household latrines, limited maintenance of institutional latrines; and (ii) poor adoption of hygiene practices, that is modest progress in minimizing open defecation, improving hand-washing, and ensuring the safe storage of water.
- The participatory methods used in RWSS interventions were not as effective as had been expected in fostering the desired behavior change and in sustaining good sanitation and hygiene practices. In addition, the poor sanitary and hygiene state of some facilities posed health

hazards and often led to their abandonment, a situation that could result in a re-emergence of open defecation.

- Urban sanitation intermediate outcomes were adversely affected by limited access to sewerage, and limited treatment capacity of wastewater in urban areas.
- AWM interventions achieved limited outcomes in terms of improved access to water for irrigation, and increased agricultural production and productivity. This was mainly due to: (i) insufficient development of tertiary irrigation canals; (ii) inadequate complementary inputs, such as fertilizer and improved seed and plant; (iii) limited irrigated/developed farm areas (66% of the planned irrigated area was achieved); and (iv) a lack of capacity of water-users' associations (WUAs) to manage the resources optimally. None of the AWM cluster projects, aiming at increasing farmers' access to water, achieved its planned targets; around 35% of the targeted smallholder farmers gained access to water for irrigation or livestock.
- In addition, the case studies highlighted country context factors beyond the Bank's control as hindering results, especially at the outcome level. These include: (i) weak institutional, regulatory and policy frameworks; (ii) inadequate preparatory studies to support project design (37% of the cluster projects); (iii) a lack of adequate human capacity (due to high staff turnover and brain drain); and (iv) low counterpart funding (e.g., Zambia, Mali, Nigeria at all levels of government, and limited district level human resources in the cases of Rwanda and Senegal). Specifically, limited capacities within NGOs and the private sector also undermined the achievement of outcomes, as identified by water specialists and confirmed by country case studies.
- While the physical outputs of UWSS helped meet outcome expectations, the results were

negatively affected by poor quality of aging urban water-distribution networks, financial losses of water utilities, and limited wastewater treatment and fecal sludge management.

**Taking all of the above performance results into consideration, the effectiveness of the Bank's support to the water sector (WSS and AWM) was rated unsatisfactory.**

### *Efficiency*

**The efficiency of the Bank's support to the water sector was assessed along three dimensions: economic performance, financial performance and timeliness.** Twenty four projects examined as part of the PERs had complete economic internal rates of return (EIRR) assessments. All of these 24 projects, except two (Mauritius and Tanzania Dar es Salaam), were deemed economically viable, and all have EIRRs higher than their respective opportunity costs of capital ranging from 10% to 12%. However, from the perspective of water utility agencies, UWSS projects were not generating sufficient revenue to cover their investment and operating costs. In addition, the sanitation and rural water interventions are not generally not financially profitable. The WSS and AWM projects also experienced, during implementation, significant delivery delays and procurement challenges. Project implementation (from approval to completion) ranged from 49 to 141 months. On average, projects had a delay of around 18 months compared with planned schedules.

Implementation delays were mainly due to: (i) slow loan ratification; (ii) slow payment of government counterpart funds; (iii) poor quality at entry; (iv) procurement procedure issues; and (v) capacity constraints of contractors.

**Overall, the efficiency of the Bank's support to the water sector was deemed unsatisfactory.**

## ***Sustainability***

**To assess the sustainability of Bank support, the evaluation examined four aspects: technical soundness, financial sustainability, institution and capacity strengthening, and beneficiary ownership and participation in maintenance.** Performance was found to be positive on the technical soundness and beneficiary ownership dimensions. At the same time, the evaluation found substantial deficiencies in the financial and institutional aspects of the projects supported.

The evaluation found a number of factors that could contribute to sustainability, including:

- Projects across all subsectors were generally strong in terms of using cutting-edge technologies, although some were less appropriate for the local context.
- Responding to the need for technical support, projects provided capacity building and ensured the connections between relevant groups. While these interventions were not always effective, to some extent they provided the foundation for ensuring sustainability.
- Projects across all subsectors created the conditions to build sustained partnerships and a sense of ownership among beneficiaries and stakeholders.

On the other hand, the findings of the evaluation highlight the following impediments for the sustainability of the outcomes achieved:

- Procurement of equipment and spare-parts remain a challenge to water sector operations, thereby impeding regular and timely repair and maintenance.
- Insufficient human capacity, especially at the local government and communities levels, to ensure the maintenance of water infrastructure was found to be a major factor threatening the sustainability of water projects.

- Financial sustainability poses the greatest threat to overall sustainability in the sector. A host of factors, including poor cost-recovery mechanisms, perennial wastage, and a general lack of appropriate legislative reforms to regulate tariffs, undermined the long-term sustainability of WSS and AWM infrastructure benefits.
- Similarly, the need for institutional and capacity strengthening, and the choice of appropriate low cost/maintenance technology are paramount issues for the sustainability of sanitation facilities.

**Overall, the sustainability of the results of Bank support was deemed unlikely.**

Lessons learned in the cases where projects were deemed sustainable (Morocco Urban WSS projects, Mauritius Urban Sanitation project, Rwanda WSS projects, Rwanda Bugesera Agricultural Rural Development Project, Mauritania WSS project) are as follows:

- Cost recovery remains a key issue that must be strategically and systematically addressed to ensure the financial viability of any intervention. This has become more relevant in the context of the negative impact from climate change on water resource availability.
- Improving the performance of UWSS utilities as a whole is critical for the water sector, if it is to maintain the equalization mechanisms between subsectors (water and sanitation) and between areas (urban and rural).
- Critical sanitation technology choices should be scrutinized carefully, if they are to deliver sustained results.

In summary, the table below provides an overview of the performance ratings (on a four-point scale) of the Bank's 2005-2016 support for water and sanitation.

## Overview of ratings

Evaluation criteria	HU	U	S	HS
<b>Relevance</b>			X	
1. Strategic objectives			X	
2. Objectives of interventions			X	
3. Design of interventions		X		
<b>Effectiveness</b>		X		
1. Achievement of high-level objectives		X		
2. Achievement of outputs			X	
3. Achievement of outcomes		X		
<b>Efficiency</b>		X		
1. Economic performance -EIRR			X	
2. Financial performance -FIRR		X		
3. Timeliness		X		
<b>Sustainability</b>		X		
1. Technical soundness			X	
2. Financial sustainability		X		
3. Institution & capacity strengthening		X		
4. Beneficiary ownership & participation in maintenance			X	

HU=Highly Unsatisfactory, U= Unsatisfactory, S=Satisfactory, HS=Highly Satisfactory

## Contributing Factors in Achieving Development Results

**The Bank was active in development-partner coordination groups within the water sector.** The Bank engaged in development-partner coordination mainly through the participation of water specialists in RMCs' development-partner fora and joint-sector working groups. Coordination was effective where it was anchored on a country's water sector master plan, and where the government played a leading role. It is estimated that this occurred in the majority of RMCs. At the same time, the Bank's role in building broader partnerships with the private sector and

non-governmental entities was limited, partly because RMCs preferred the Bank to deal directly with them.

**Additional funds leveraged by the Bank to support ongoing WSS activities were limited.** In terms of co-financing, for each dollar invested by the Bank, less than a dollar (on average USD0.89 for WSS and USD0.50 for AWM) was invested by partners, including country counterparts and development partners. Development partners and the Bank's country office staff described working together as useful, but overall most partners tended to work in silos.

**Knowledge work produced by the Bank in the water sector was described as useful in some cases (Senegal, Cameroon, Mali), while some stakeholders in RMCs questioned the adequacy of the Bank's investment in knowledge and knowledge products.** Supporting reforms in the water sector will require further development and promotion of knowledge. Although the WSS Department provided support to RMCs to advance their knowledge on available water sources and to complete needs assessments (through feasibility studies), this was not sufficient to support reforms and policy dialogue, as revealed by the review of the Bank's economic and sector work (2005-10) and country case studies. The perception of the usefulness of the knowledge products varies across RMCs and there was limited awareness of the Bank's water sector knowledge products. There is scope for the Bank to do more in this area, because demand for knowledge is strong.

**The evaluation noted positive steps taken toward gender mainstreaming in 80% of the case-study countries.** Positive steps ranged from integrating gender-specific targets and activities at the project level, to advocating for greater consideration of gender issues at working group meetings. Action on gender mainstreaming stemmed from the Bank's operational guidelines, including its gender strategy and requirements, such as the involvement of a gender expert on supervision missions. Interviewees pointed out that the Bank's gender-related indicators tended to focus more on monitoring physical infrastructure output, and less on behavioral change.

**Managing for development results, monitoring and data availability were identified as challenges.** Project baseline data were insufficient for adequate performance monitoring and evaluation (M&E). Supervision missions were cited as a key approach for project-level M&E.

The effectiveness of supervision missions was affected by budget constraints, and the focus on physical infrastructure, while capturing few 'soft' components such as behavior change.

## Issues and Recommendations

### *Policy and Strategic Issues*

#### ■ Water resources development and management

**Recommendation 1:** The Bank should continue to enhance its engagement with RMCs on an integrated approach to Water Resources Development and Management. Such an integrated approach should go beyond WSS and AWM.

#### *Findings and Issues:*

1. The benefits of UWSS were more clearly manifested in Morocco and Mauritius, where the governments integrated UWSS with tourism and small- and medium-sized business opportunities within their integrated development strategy and plans. This approach optimized UWSS use, business development and expansion, and helped to raise living standards.
2. Critical risks concerning the reliability and quality of water resources were not always adequately addressed during the Bank-supported water sector project designs. In addition, the independent evaluation of Integrated Water Resources Management (IWRM) implementation between 2000 and 2010 found that only five out of 40 of the projects that were reviewed explicitly addressed water resources management and conservation, a critical aspect for sustained water sector results.



3. Literature review, country case studies and PERs found that water security is one of the greatest challenges resulting from climate change and its economic fallout. Impacts are already being felt in African countries in all regions, and also on selected trans-boundary water resources, for example in Lake Chad and Lake Victoria. The case of Kenya Green Zones provides a good example of how the Bank's water sector interventions can advance water conservation issues. Such practices should be further developed.

#### ■ Low access to improved sanitation

**Recommendation 2:** The Bank should prioritize sanitation by focusing on the required policy shifts, introducing new models with sustainable technologies, partnerships, and scale-up mechanisms.

#### *Findings and Issues:*

1. The two main approaches (financing and community-based behavior change approaches) used for the Bank-financed sanitation interventions within the challenging RMC contexts (country sanitation policies and a widening financing gap in the WSS sector) contributed to the relatively low levels of sanitation outputs, including household latrines. The financing approaches were mostly used in the cluster projects (six of 11 projects). They have some limitations in terms of funds required for targets in hardware subsidies or loan schemes. In addition, the cost of latrines proposed in the Bank-funded interventions was seen as high by beneficiaries in some cases (Rwanda RWSS, Congo Urban sanitation), making them difficult to scale up.
2. The Bank, through policy dialogue, has been advocating for and financing investments in sanitation with limited results, as sanitation remained a major challenge in Africa. Limited financing and performance of the sanitation and

hygiene component does not bode well for achieving development results of RWSS interventions.

#### ■ Toward sustained service delivery and fostering development impact

**Recommendation 3:** The Bank should deepen ongoing efforts to support increased innovative financing mechanisms (including private sector participation) to accelerate water and sanitation infrastructure development and management in RMCs.

#### *Findings and Issues:*

1. The landscape of donors is changing in Africa, with an increasing amount of official development assistance and concessional loans coming from non-traditional donors, such as Brazil, China, India, Saudi Arabia, Kuwait, Turkey and the United Arab Emirates. The private sector is also playing an increasingly important role in the development finance landscape. These actors have the potential to provide financial resources, as well as knowledge and skills, that can lead to more sustainable and effective infrastructure development and services. Countries require sound policy, governance and regulatory frameworks to attract finance from these actors for infrastructure development and to deliver effective services.
2. Specific challenges in engaging the private sector were raised in the country case studies, including:
  - Only one-third of countries have sector financing plans that are defined, agreed upon and consistently followed, and there are still significant gaps between needs, plans and financing;
  - Insufficient access to credit for private companies to invest in the water sector;

- In rural areas, a lack of presence and capacity of the private sector, as well as the cost associated with dealing with dispersed populations, make securing the private sector's engagement more challenging; and
- The lack of an appropriate legislative framework in many countries, to provide private operators with confidence, as well as monitoring their involvement and progress.

**Recommendation 4:** The Bank should continue to explore innovative ways to strengthen RMCs' institutional capacity and the performance of service providers toward sustained service delivery of water sector interventions to attract funding and foster development impact.

#### *Findings and Issues:*

1. Poor service delivery (water quality, quantity, reliability, accessibility and affordability) and performance of service providers (limited functionality of infrastructure) affected the main outcomes related to sustainable access to safe drinking water. Users of water and sanitation services seek to hold service providers to account over the services received. In addition, the sustainable development goals (SDGs) propose new definitions of success in the water sector, which go beyond access to an improved drinking water source, with a changing focus on monitoring service delivery. This should be incorporated in the Bank's interventions.
2. For AWM, the limited results in terms of improving access to water for irrigation are due to limited water-related outputs achieved and challenges in the capacity of WUAs to manage resources optimally.
3. The performance of UWSS was uneven in terms of providing sustained access to water and sanitation services. This was largely

due to the poor quality of the aging urban water-distribution networks for some projects, limited wastewater management and lack of capacity.

4. Available evidence suggests that, while capacity development has always been an integral component of the Bank's water sector projects, there were limitations in terms of sustaining and enhancing the support. Evidence also indicates that countries with improved institutions were better equipped to make use of additional capacity support relative to those RMCs with weak governance and high staff turnover.

## Participatory Approach

**Recommendation 5:** The Bank should continue to adopt appropriate participatory practices through effective collaboration with stakeholders at all stages of the project cycle (identification and design, implementation, completion and exit) for its water sector interventions.

#### *Findings and Issues:*

1. While projects were 'demand-driven', and thus responded to the RMCs' needs, the level of collaboration with beneficiaries and the private sector was weak in some RWSS projects and AWM interventions. In some of the cases, the main technologies used were not in line with beneficiary habits and practices.
2. Evidence from the 10 country case studies shows that the appropriate inclusion of stakeholders during project design, including experts on the ground, can contribute to sustaining water and sanitation facilities. Such stakeholders possess direct cultural understanding and affinity for the challenges that communities are facing.

## Results Measurement

**Recommendation 6:** The Bank should improve its measurement and reporting of development results. Specifically, the M&E system at project, country, and Bank levels should be strengthened to provide the requisite range of results data (baseline, targets and actual) for design, during implementation, at completion and post-completion. Results data should cover outputs and outcomes (for both hard and soft infrastructure) of its water interventions.

### *Findings and Issues:*

1. The key reporting tool used by the Bank - the annual development effectiveness report (ADER) - is based on data from project reports (including approved PCRs) that assume access rates in terms of people living in the vicinity of the infrastructure. This tool does not take into account water infrastructure that ceases to function shortly after project completion, or issues of quality and reliability.
2. Furthermore, the Bank's efforts to track performance toward development outcomes do not provide sufficient guidance and appropriate resources for project M&E systems to track key outcomes of its interventions throughout the project lifespan, including post-completion. Lack of appropriate M&E systems and missing baselines were reported in 88% of the cluster projects. New information and communication technology (ICT) offers opportunities for more cost-effective M&E.
3. The Bank's new Development and Business Delivery Model (DBDM) does not clearly include, within the decentralized structure, a role for M&E and demonstration of outcome sustainability after project funding ends.

## Knowledge Sharing

**Recommendation 7:** The Bank should continue its promotion of platforms, networks and knowledge products to enhance the transfer of experience and knowledge among development partners, governments, end beneficiaries, sector experts and evaluators for improved performance of its RMCs.

### *Findings and Issues:*

1. Some stakeholders, especially in RMCs, have questioned the adequacy of the Bank's investment in knowledge and knowledge products. It is argued that the scale of knowledge work produced by the Bank in the water sector was limited and not strategically disseminated compared with other MDBs, such as the World Bank. However, the knowledge work that has been produced was described in some cases (Senegal, Cameroon, Mali) as helping staff to influence the discourse on the reform of national strategies for water management and rural sanitation. There is, therefore, scope for the Bank to do more in this area.
2. The assessment also noted that the usefulness of knowledge products varies across RMCs and depends on the level of awareness and accessibility. The use of ex-post evaluations conducted 2 to 3 years after project completion was viewed as good practice, not only among Bank staff interviewed in the context of the policy and the literature review but also by stakeholders interviewed during case studies in Cameroon, Kenya, Rwanda and Morocco. This helps to reduce the tendency of development partners to neglect the 'long-term' view of projects, which is essential for attaining sustainability of the benefits of completed projects.



# Management Response

Management welcomes IDEV's evaluation of the AfDB's Support to the Water Sector (2005-2016). It provides a useful perspective on the Bank's strategies and operational approach in supporting RMCs' development of the water sector; and offers some interesting lessons on how the Bank can further sharpen its support to the water sector in Africa. While Management has reservations with some aspects of the methodology used by IDEV in assessing the Bank's performance, it does, however, broadly agree with its key recommendations. Management has in recent years made several operational changes, policy improvements and reforms to improve inclusive and sustainable water and sanitation delivery to our client countries. These are discussed below.

## Introduction

Water supply and access to sanitation is one of the key drivers of human and economic development. Today, about 2.2 billion people lack access to safely managed water supply; and most of these are in Africa's poorest regions. In addition, over 750 million Africans lack access to improved sanitation. And these water and sanitation challenges are likely to be further compounded by Africa's looming climate crisis.

To address these challenges, the Bank invested UA 4,5 billion between 2009 and 2019 towards promoting universal and equitable access to safe and affordable drinking water and adequate and equitable sanitation - One of the key Sustainable Development Goals (SDG 6).

IDEV's evaluation assesses the Bank's progress in achieving these goals. And the extent to which the Bank has contributed to the development of the water sector in its Regional Member Countries (RMCs). The evaluation provides a useful perspective on the Bank's strategies and operational approach in supporting RMCs' development of the water sector; and offers some interesting lessons on how the Bank can further sharpen its support to the water sector in Africa.

The criteria adopted by IDEV to assess the Bank's performance draws on standard evaluation criteria - relevance, effectiveness, efficiency and

sustainability of the Bank's interventions. While Management understands the challenges of assessing performance on the basis of large and sometimes incomplete datasets, it has reservations with some aspects of the methodology used by IDEV in assessing project performance and impact. The reasons are summarised in Annex A of this management response and in the evaluation report (Annex 6 Table 14). Some important lessons have also been learnt by management and IDEV in resolving these issues and are presented in Annex D of this management response.

Notwithstanding, Management broadly agrees with the key recommendations made by IDEV. And sets out in a detailed Management Action Record (below) the initiatives it is taking to address these recommendations. Management has in recent years made several operational changes, policy improvements and reforms to improve inclusive and sustainable water and sanitation delivery to our client countries. These are discussed below.

## Salient Issues

The evaluation provides an accurate picture of the many challenges Africa is confronted with in meeting the goals of universal and equitable provision of water supply and sanitation services. Reaching this goal requires that the Bank's client countries bridge their existing gaps in access to improved WSS and significantly improve their

service delivery. This is an enormous challenge for most RMCs given the sector's poor levels of cost recovery and continuing rural-urban migration.

The evaluation rightly points out areas where the Bank needs to step up its efforts. These include for example:

- *The challenge of financial viability and tariff reforms.* Many RMCs have been unwilling to promote cost-recovery and in many cases, rural communities and the urban poor are unable to pay the true cost of water services. This has been a key constraint to sustainability and financial viability.
- *Creating a robust evidence base for service delivery.* The lack or paucity of data on WSS service delivery in RMCs is widespread and makes it difficult to assess performance accurately.
- *Addressing disparities in access especially between urban, peri-urban and rural areas.* Continuing urban-rural migration further deepens current disparities in terms of access and quality of services.

### **Policy and strategy**

The Evaluation found that Bank-supported water sector project designs do not always adequately address the reliability and quality of water services. Management feels that in the poorest communities it is not realistic to expect 24-hour water supply because most communities have insufficient financial resources and rapidly increasing demand. To address this challenge, the Bank will continue to work with its partners to better support governments in attaining water security and re-engaging with client governments on tariff reforms to strengthen the foundations of financial sustainability.

The Bank has also stepped up its efforts in developing, implementing and mainstreaming an Integrated Water Resources Management

(IWRM) approach. The IWRM approach - if fully adopted by governments - will help in addressing some of the water quality and reliability challenges. In the upcoming Water Policy and Water Strategy, the Bank will further promote the integrated development and management of Africa's water sector.

The Evaluation further points out that the financing and community-based behaviour change approaches contributed to the relatively low levels of sanitation outputs. And calls for increased financing and improved performance to achieve better development results in RWSS interventions.

With only 38% coverage across the continent, low household access to improved sanitation is an Africa-wide issue. In many countries, national policy requires, for example, households to build their own latrines. These measures remain, however, ineffective because of high poverty levels and limited enforcement by governments. As a result, unimproved facilities and open defecation remain prevalent in many places. To enhance access to sustainable sanitation in Africa, Management is increasing capacity development and advocacy for more innovative, holistic and affordable technological options and service delivery business models along the sanitation value chain. For example, the Bank is helping countries assess/prepare and implement their sanitation strategies. And through the new AUSIF programme, the Bank facilitates the preparation of citywide inclusive sanitation projects.

The evaluation also notes the important role of the private sector in providing financial resources, knowledge and skills for sustainable and effective infrastructure development and services. It mentions the lack of an appropriate legislative framework in many countries and insufficient private sector presence and capacity in rural areas. In this regard, the Bank is working to generate non-sovereign operations and public-private partnership business opportunities in the water sector, reaching out to private investors/sponsors

and professional associations for new business development opportunities. To this end, the Water Department has increased its competences to include staff to promote support for private sector engagement in the water sector.

### ***Participatory approach***

The evaluation found that partnerships and direct interactions with non-governmental organisations are uncommon or weak. Management acknowledges this and attributes it to the fact that to-date, nearly all Bank support to the water sector has been through sovereign operations. The Bank, through policy dialogue and support for better sector systems and processes, will continue lobbying governments to put in place the enabling environment for effective partnerships with beneficiaries and NGOs. During project preparation, the Bank endeavours to verify the extent of stakeholder participation in project design and to promote meaningful engagement throughout the project cycle. Nonetheless, Management recognises the need for greater inclusion of stakeholders and experts on the ground in project design and implementation. A division in the Water Department has the mandate for Water Coordination and Partnerships and will work with other units of the Bank to deepen support in this area.

### ***Results measurement***

The evaluation notes deficiencies in the sample of water projects in terms of M&E. Given the evaluation included projects designed 20 years ago, it is not surprising that the issue should be also raised in this evaluation, as it has been in other IDEV evaluations including, for example, the Comprehensive Evaluation on Development Results (CEDR).

Since 2011, a number of changes have been made to improve M&E in Bank projects. These have been detailed in other management responses including for example management's response to the CEDR

and the evaluation of quality assurance across the project cycle. That said, Management does acknowledge a need for further improvements in its project level M&E. This is why commitments have already been made in relation to revisions to the standard RBLF, to quality at entry tools, and indeed also to monitoring and completion tools. This is detailed in particular in the Integrated Quality Assurance Plan. What remains is to ensure that the M&E function within the Bank is appropriately resourced so that new tools can be correctly implemented, and compliance monitored.

More broadly, the evaluation raises issues regarding the strength of RMC's own M&E capacity and statistical collection systems. This affects many sectors in which the Bank and other MDBs work. Specifically, in relation to M&E in the WASH sector, the Water Department has in place a concept note guiding support to strengthen national WASH M&E systems in RMCs, many of which face difficulties in data collection and reporting as discussed above.

There is also ongoing work to support the M&E systems of project implementation units (PIUs) in newly approved water and sanitation sector projects, which has started with the Gambia and Ghana. This work is expected to strengthen the PIUs in adopting appropriate results-based approaches to better manage and report results.

With regards to demonstration of outcome and sustainability after project funding ends, this is a challenge for all MDBs in all sectors. This is one reason why it is useful that independent evaluators are able to come in at a later stage, in terms of examining sustainability which can only be predicted at completion. In addition, for operations teams, lessons from past operations are important to inform design and implementation of new ones, so the information is valuable. In a situation where the resource envelope is finite, the focus in operations necessarily remains on improving M&E from design to completion. This does however mean ensuring at design that projects are fully "evaluatable" at a later date whether by operations teams or by IDEV.

### ***Knowledge sharing***

The Evaluation recognises the quality of Bank's knowledge work in shaping policy dialogue on water in Senegal, Cameroon and Mali. It also notes that the volume and implementation of knowledge work in the water sector are often limited.

Management is encouraged by the evidence that the Bank's knowledge work on the water sector was found to influence the discourse around development effectiveness, and to spur reforms on national strategies for water management and rural sanitation. The volume of knowledge products on water and sanitation has been increasing in the Bank. In 2017 alone, the Water Department's communication outputs such as press releases and AWF electronic newsletters were shared with over 3040 subscribers from various RMCs, in addition to brochures and flyers on AWF Strategy (2017-2025) in both French and English. Lessons of an external review of the RWSSI were also documented, packaged and shared on the RWSSI and external webpages for access by a wider group of stakeholders. That being said, Management acknowledges that there is a need to improve the quality of communication and increase its outreach.

### **Key Achievements**

In assessing the Bank's achievements in the water sector, the evaluation considered the relevance of Bank interventions, their effectiveness and efficiency and the sustainability of the benefits.

### ***Relevance***

The evaluation assessed satisfactorily the overall relevance of Bank-supported water sector activities. Bank-supported activities in the water sector were aligned with corporate policies and strategies, RMCs' priorities, and international targets. The design of Bank's interventions was found to be aligned with but not adequately reflecting beneficiaries needs.

The Bank is committed to enhancing the quality at entry of the interventions, as elaborated in the Bank's Quality Assurance Implementation Plan and in particular, through stronger feasibility studies, engaging beneficiaries and partners throughout the project cycle.

### ***Effectiveness***

While the evaluation expressed reservations on the effectiveness of Bank support to the water sector (Annex A), it did however report significant outputs were delivered with respect to water supply and in terms of capacity development and awareness. At outcome level, the Bank's UWSS support was also found to be satisfactory. In rural communities, access to rural water supply was rated satisfactory. The Bank achieved 83% of its targets and time spent in fetching water was reduced. For rural interventions, the Bank support did not significantly increase the number of household latrines compared to needs. However, the evaluation also recognises that most national policies require households to finance their own latrines.

Management appreciates the evaluation's highlighting various country-specific factors that are beyond the Bank's control and that hinder achieving results, especially at outcome level: weak institutional, regulatory and policy frameworks, lack of adequate preparatory studies to support project design, inadequate human capacity, and insufficient counterpart funding.

### ***Efficiency***

Bank's supported activities were assessed as economically viable with higher economic internal rate of return than their respective opportunity costs of capital. However, the main cause of unsatisfactory financial performance is related to low revenue generation relative to investment and operating costs.



The Bank is implementing projects with strong components to enhance the financial performance of urban utilities and is committed to increasing its support for water utility reforms. Management also recognises the implementation delays and procurement challenges affecting timely delivery of its water sector operations. Beyond the water sector, Management is ensuring that Bank's task managers are not overly loaded and can deliver efficiently.

### ***Sustainability***

Bank's performance was found to be adequate in relation to technical soundness, beneficiary ownership and participation in maintenance, whereas financial sustainability and institutional and capacity strengthening remained a challenge. The inadequate financial sustainability was mostly due to the poor revenue-generating capacity of service providers and partly because of the poor maintenance of systems and high investment costs for utilities.

Management agrees with the evaluation findings that to a large extent, the impediments to sustainability - procurement of equipment for the operation and maintenance of facilities, human and institutional capacity, appropriate technology, and financial sustainability - are not under the direct

control of the Bank. However, specific measures promoting good water sector governance and institutional capacity development of RMCs and utilities will be elaborated in the Water Strategy that is under preparation.

### **Conclusion**

In conclusion, the evaluation provides a useful perspective on the Bank's strategies and operational approach in supporting RMCs' development of the water sector; and offers some interesting lessons on how the Bank can further sharpen its support to the water sector in Africa. Overall, Management agrees with the evaluation's findings and recommendation with a reservation regarding its assessment of the Bank's performance (discussed in Annex A).

The lessons drawn from the evaluation will inform future strategies and Bank operations within a framework of greater collaboration among Bank units for improved achievement of development results. The findings will add to the pool of evidence on the development achievements of the Bank's operations in the water and sanitation sector. Management has taken note of the areas requiring improvement and in the medium to long term will intensify efforts to address these areas, as the Management Action Record summarises.

Summary of Management actions	
Recommendation	Management's Response
<p><b>Recommendation 1</b> - The Bank should continue to enhance its engagement with RMCs on an integrated approach to Water Resources Development and Management (IWRMD). Such an integrated approach should go beyond WSS and AWM.</p>	<p><b>AGREED</b> - Management recognises the importance of comprehensive water sector support and integration of IWRMD in sector operations for efficient and sustainable development. These call for effective collaboration amongst <b>all water user units</b> of the Bank and enhanced strategic partnerships with other stakeholders. This is the mandate of the Bank's newly created Water Coordination and Partnerships Division, under the DBDM.</p> <p><b>ACTIONS</b> - In the new Water Sector Strategy, the Bank will enshrine approaches for increased IWRMD and development of multipurpose infrastructure to guide sector operations to enhance the economic benefits of water investments <b>[AHWS, Q4, 2020]</b>.</p> <p>Using guidance to be elaborated in the new Water Strategy, during project preparation the Bank will systematically assess the feasibility of, and aim to include, integrated approaches in all new water-related project designs to ensure holistic, innovative and sustainable water infrastructure. The target is to assess all Project Appraisal Reports starting in 2020. Progress will be reported in Annual Sector Activities Reports <b>[AHWS, in collaboration with other Departments and Regional Directorates; December 2021]</b>.</p>
<p><b>Recommendation 2</b> - The Bank should prioritize sanitation by focusing on the needed policy shifts, introducing new models with sustainable technologies, partnerships, and scale-up mechanisms.</p>	<p><b>AGREED</b> - Management has already stepped up capacity development, advocacy and support for more innovative, holistic and affordable technological options and service delivery business models along the sanitation value chain to enhance access to sustainable sanitation. The Bank is also enhancing engagements with the private sector on sanitation and developing partnerships for financing and knowledge management as required in the Bank's AUSIF. The Africa Sanitation and Wastewater Atlas, under preparation, will be used for advocacy and to further inform our interventions.</p> <p><b>ACTION</b> - From the country profiles in the upcoming Africa Sanitation and Wastewater Atlas, systematically map out the sanitation situation and prepare a knowledge product proposing strategic intervention opportunities for selected countries in Africa as basis for targeting collaborations and operations. Annual Sector Activities Reports will serve as the accountability mechanism on enhanced sanitation operations starting end of 2020 <b>[AHWS with Regional Directorates, March 2021]</b>.</p>
<p><b>Recommendation 3</b> - The Bank should deepen ongoing efforts to support increased innovative financing mechanisms (including private sector participation) to accelerate water and sanitation infrastructure development and management in RMCs.</p>	<p><b>AGREED</b> - All relevant units at the Bank should collaborate to support governments in strengthening mechanisms for innovative financing and for enabling private sector participation in infrastructure development and service delivery. The Bank is already enhancing private sector engagement in the water sector. Wherever feasible, the Bank will increase its efforts to directly engage with beneficiaries, non-government partners and, especially, the private sector.</p> <p><b>ACTION</b> - In the new Water Sector Strategy, the Bank will entrench mechanisms for helping governments institute innovative financing mechanisms and strong financial management systems to scale up resource mobilisation for increased investments <b>[AHWS, Q4 2020]</b>.</p>
<p><b>Recommendation 4</b> - The Bank should continue to explore innovative ways to strengthen RMCs' institutional capacity and the performance of service providers toward sustained service delivery of water sector interventions to attract funding and foster development impact.</p>	<p><b>AGREED</b> - Building institutional and human resources capacity for sustainable water sector services delivery remains a challenge. Management has already stepped up its capacity development support and advocacy for more innovative, holistic and affordable technological service delivery business models. Greater efforts will be directed at institutional strengthening, strategic planning and monitoring, project preparation and implementation capacity.</p> <p><b>ACTION</b> - The upcoming Water Sector Strategy will contain an action plan to guide enhanced capacity-strengthening efforts in new Bank projects and as stand-alone activities <b>[AHWS, beginning Q4 2020]</b>.</p>

Summary of Management actions	
Recommendation	Management's Response
<p><b>Recommendation 5</b> - The Bank should continue to adopt appropriate participatory practices through effective collaboration with stakeholders at all stages of the project cycle (identification and design, implementation, completion and exit) for its water sector interventions.</p>	<p><b>AGREED</b> - Management appreciates the importance of meaningful stakeholder participation in the delivery of Bank-funded development interventions. The Bank will continue to advocate for national governments to deepen stakeholder participation at all stages of the project cycle, including during design. Where feasible, the Bank will increase its efforts to directly engage with beneficiaries, non-government partners and the private sector.</p> <p><b>ACTIONS</b> - The new Water Sector Strategy will detail guidance to task managers on effective stakeholder participation throughout the project cycle, including during supervision missions <b>[AHWS, in collaboration with regional hubs and AHGC, Q4 2020]</b>.</p> <p>Regular monitoring and reporting on stakeholder engagement and participation activities in Annual Sector Activities Reports <b>[AHWS, Q1 2022]</b>.</p>
<p><b>Recommendation 6</b> - The Bank should improve its measurement and reporting of development results. Specifically, the M&amp;E system at project, country, and Bank levels should be strengthened to provide the requisite range of results data (baseline, targets and actual) for design, during implementation, at completion and post-completion. Results data should cover outputs and outcomes (for both hard and soft infrastructure) of its water interventions.</p>	<p><b>AGREED</b> - Work is under way to strengthen Project Logical Frameworks, including by revamping the Readiness Review at preparation stage as described in the Quality Assurance Implementation Plan. The Bank is working to strengthen national WASH M&amp;E systems in RMCs and to support the M&amp;E units of PIUs in all newly approved Bank projects in the water and sanitation sector. For this purpose, AHWS has proposed to recruit an M&amp;E Expert for the sector. In addition, the Bank is going to revise its Result Measurement Framework in 2020 in line with the GCI and ADF commitments. In that process, indicators for the Water and sanitation sector might be reviewed.</p> <p><b>ACTION</b> - Revamp the Readiness Review process during preparation, including emphasis on the project's results-based logical framework [Q3 2020, SNOQ], and provide adequate implementation support as committed to in the Quality Assurance Implementation Plan <b>[AHWS/RDVP, Q3 2020]</b>. One area of reform of the Quality Assurance Implementation Plan is to sharpen the focus on delivery and results, with the objective of nurturing an organisational culture centred on quality, implementation and results.</p>
<p><b>Recommendation 7</b> - The Bank should continue its promotion of platforms, networks and knowledge products to enhance the transfer of experience and knowledge among development partners, governments, end beneficiaries, sector experts and evaluators for improved performance of its RMCs.</p>	<p><b>PARTIALLY AGREED</b> - This is already happening. The development and management of <b>knowledge products</b> on water and sanitation is an important activity of the Bank. AHWS developed and published a series of three knowledge products in the past years on climate change, partnerships and gender, in addition to other communication outputs. The Bank will strengthen networking opportunities and continue to generate more knowledge items to add to a pool of knowledge products in the water sector in Africa.</p> <p><b>ACTION</b> - AHWS will finalise preparation of a framework for enhancing intra-Bank collaboration and strategic engagements with external stakeholders to enhance the generation and utilisation of knowledge on key topical and thematic issues in the sector <b>[AHWS, Q1 2021]</b>.</p>

## Annex A: Summary of Data Disagreements Between Management and IDEV (Additional analysis is provided in Annex B and C)

<p><b>Targets used to benchmark project performance</b> (Example: Zambia National RWSS project).</p> <p><b>Management</b> - Management contends that performance of the Zambia RWSS project should be measured against the targets set in the PAR. According to the PAR, the project aimed to provide access to water supply to 269,000 beneficiaries. According to the 2014 PCR, the project exceeded this target and provided access to 643,000 beneficiaries. IDEV used a different target to assess performance: rather than using the 2010 program target in the PAR, IDEV used the 2015 sector goal of 871,000 people.</p> <p><b>IDEV</b> - IDEV used its evaluation (PER) of the Zambia RWSS in 2015 as a source of evidence. The PCR (ADF/BD/IF/2018/66) for the Zambia RWSS was also prepared in 2015. According to the PCR, the program was substantially complete at the end of 2014. The Zambia RWSS's actual implementation period was 2006-2014 as against a planned implementation period of 2006-2010. For more information, referred to point 1 in Table 14 of Annex 6.</p>
<p><b>Data for assessing project performance</b> (Example: Uganda RWSS Programs).</p> <p><b>Management</b> - Management contends that performance of the Uganda RWSS project should be measured using data included in the Annual Sector Performance Reports (SPR) - A government source jointly reviewed by all stakeholders. The SPR was validated by an independent joint EU-World Bank evaluation of the Sector Budget Support to Uganda. According to the SPRs, for example, the number of beneficiaries of the sanitation project were 5.1 million against IDEV's estimation of 1.9 million people.</p> <p><b>IDEV</b> - IDEV relied on its estimations of the program beneficiaries: point 1 of table 14 of Annex 6 provides the details.</p>
<p><b>Data for assessing project performance</b> (Example: Dar-es-Salaam UWSS Project)</p> <p><b>Management</b> - The 2001 Dar-es-Salaam UWSS Project aimed to improve sanitation and service delivery. At the time (2001), the PAR provided targets on outputs and not the number of beneficiaries. The size of the project (\$22m) suggests that the project was limited in scope. In the absence of information on the number of beneficiaries, IDEV used the total population of Dar es Salaam of 3.4 million (2009). This project accounts for more than 60% of the urban component of the evaluation and considerably skews how IDEV measures performance. This is why Management proposed to remove this project from the UWSS beneficiaries data series as there was no target data. Removing this data from the series would change the overall achievement on sanitation beneficiaries from 42% to 83%.</p> <p><b>IDEV</b> - AHWS was proposing to remove the Dar-es-Salaam Urban WSS Project in the beneficiary's analysis since no target was indicated in the PAR. As IDEV had no acceptable reason to exclude this project, it presented in its Evaluation Synthesis Report data both with and without the Tanzania Dar es Salaam Project as Footnotes 27 and 34. IDEV estimated the planned beneficiaries based on available information gathered from the Bank's documents and those from other project's co-financiers such as the World Bank. The Project's co-financiers and external partners include the Government of Tanzania (\$12m); World Bank (\$ 61.5m); European Investment Bank (\$34m); Private Operator Equity (\$8.5m). The number of estimated project beneficiaries is for the entire co-financed outputs.</p>

**Annex B: Example of Data On Beneficiaries for RWSS – Influencing Outcomes and Effectiveness**

Project	Unit	Access to Water Supply		Improved Sanitation Services		Reasons for Disagreement		
		Planned	Actual	% achieved	Planned		Actual	% achieved
Zambia National RWSS Program	IDEV	871,877	643,450	74%	945,660	243,309	26%	<p><b>Disagreements on planned/target beneficiaries.</b> Planned project/program duration was 2006-2010. Bank funding of UA 15m specifically targeted activities in 15 districts in two provinces with an estimated population of <b>1,494,926</b>. Using projected % increases for the Program in the log frame, additional beneficiaries of safe water in target year of 2010 project are <b>269,087</b> (that is, an increase of 18 percentage points from 37% in 2006 to 55% by 2010). For sanitation, additional beneficiaries are <b>298,985</b> (that is, an increase of 20 percentage points from 13% in 2006 to 33% by 2010). But IDEV applied beneficiary targets corresponding to the 2015 Sector Goal; reflecting target numbers beyond what was designed for and beyond what the budget could achieve.</p>
	AHWS	269,087	643,450	239%	298,985	243,309	81%	
Uganda RWSS Program	IDEV	3,900,000	3,165,182	81%	5,800,000	1,917,000	33%	<p><b>Disagreements on actual beneficiaries for improved sanitation</b> — For this program-based operation, within the framework of a programmatic sector wide approach (SWAP), achievements are from national data. Both IDEV and AHWS had agreed that Uganda's annual Sector Performance Reports (SPRs) would be the source of information. From the SPR of 2010 - or from the EU WB Independent Evaluation increase in population with access to sanitation is 5,116,825 as shown herein. IDEV however, used different sources of data.</p>
	AHWS	3,900,000	3,165,182	81%	5,800,000	5,116,825	88%	

Rural sanitation coverage in Uganda		
Year	Total rural pop	Pop with access
2005	24,388,205	14,145,159
2009	27,517,120	19,261,984
Increase in population with access		5,116,825

Project	Unit	Access to Water Supply		Improved Sanitation Services		Reasons for Disagreement																											
		Planned	Actual	% achieved	Planned		Actual	% achieved																									
Uganda WSS Program	IDEV	2,400,000	1,578,847	66%	2,400,000	1,249,445	52%	<p><b>Disagreements on water and sanitation beneficiary achievements</b> — This is also a programmatic SWAP whose Achievements are picked from the SPRs and either consolidated annually or calculated from population and coverage data for SPR 2010 and SPR 2015. As shown in this table, data from the SPRs gives 2,312,678 and 4,782,921 beneficiaries for WS and san, resp.</p> <table border="1"> <thead> <tr> <th rowspan="2">Year</th> <th colspan="2">Sanitation access</th> <th colspan="2">Water access</th> </tr> <tr> <th>Rural population</th> <th>%</th> <th>Population</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>2011</td> <td>29,189,813</td> <td>70</td> <td>20,432,869</td> <td>65</td> </tr> <tr> <td>2015</td> <td>32,747,780</td> <td>77</td> <td>25,215,791</td> <td>65</td> </tr> <tr> <td><b>New population covered</b></td> <td></td> <td></td> <td><b>4,782,922</b></td> <td></td> <td><b>2,312,678</b></td> </tr> </tbody> </table>	Year	Sanitation access		Water access		Rural population	%	Population	%	2011	29,189,813	70	20,432,869	65	2015	32,747,780	77	25,215,791	65	<b>New population covered</b>			<b>4,782,922</b>		<b>2,312,678</b>
	Year	Sanitation access		Water access																													
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	AHWS	2,400,000	2,312,678	96%	2,400,000	4,782,921	199%																										
<b>Summary: Impact of disagreements on numbers in Annex 6 Table 4 of Evaluation, RWSS Projects beneficiaries (and Outcomes and Effectiveness Assessments)</b>																																	
<b>Evaluation Total</b>	IDEV	17,313,779	14,323,021	83%	14,852,140	6,795,518	46%	<p>As shown, there are significant differences in IDEV's total beneficiaries (outcomes) and those from AHWS, especially with respect to sanitation. These also affect both the narrative in the triangulation matrix and the overall assessment, especially with respect to outcomes and, therefore, effectiveness.</p>																									
<b>Revised Total</b>	AHWS	16,710,989	15,056,852	90%	14,205,465	14,778,264	104%																										

## Annex C: Sanitation Data for the Tanzania, Dar es Salaam UWSS Project

**SUMMARY:** (i) IDEV used a target population of 3.4 million which was the total population of Dar es Salaam in 2009, rather than the project's *planned outputs*. Realistically, the Bank's investment of USD 22.4 million could never meet sewerage needs for 3.4 million people (would suggest unit costs of a paltry USD 6.6 per capita - much less than the conservative US\$100 that is sometimes used!). (ii) Indeed, as data in Table 7 of the Annex shows, the project achieved 92% of its planned sanitation outputs; while the PCR reports 96% achievement.

Logically, such a high performance at output level could not have translated into the reported very low 14% achievement at outcome level.

As observed from Table A6.6 in Annex 6 of the Evaluation report, the 3.4 million people that IDEV uses as planned beneficiaries accounts for over 60% of the beneficiaries for the UWSS cluster projects (and the reported 14% achievement). This influences the sanitation outcomes and narrative. Removing this data from the series would change the overall achievement for sanitation beneficiaries from the reported 42% to 83%.

Project	People Having Gained Access to Improved Sanitation		
	Planned	Actual	Achievement
1. Morocco Eighth Drinking WSS Project	30,000	30,000	100%
5. Ghana Improved Sanitation and Water Supply Services	27,900	19,300	69%
<b>6. Tanzania Dar es Salaam WSS</b>	<b>3,400,000</b>	<b>476,000</b>	<b>14%</b>
9. Cameroon Yaoundé Sanitation Project	517,372	510,900	99%
10. Morocco Ninth Drinking WSS Project	300,000	350,000	117%
11. Senegal Dakar City Sanitation Project	542,500	205,960	38%
12. Congo Brazzaville and Pointe Noire Sanitation Project	800,000	743,000	93%
13. Mauritius Plaines Willems Sewerage Project - Stage 1	15,828	13,556	86%
15. The Comoros WSS Project	20,000	7,041	35%
<b>TOTAL, as presented in Evaluation Report</b>	<b>5,653,600</b>	<b>2,355,757</b>	<b>42%</b>
<b>TOTAL, without the Tanzania Dar es Salaam project</b>	<b>2,253,600</b>	<b>1,879,757</b>	<b>83%</b>

Tanzania Dar es Salaam WSS Output Description	Expected Outputs	Actual Outputs	% Outputs Achievement
Sewers extended/cleaned/rehabilitated (Km)	124	107	86%
Pumping stations	15	15	100%
Stabilization ponds facilities rehabilitated	9	9	100%
New sewer connections made	500	500	100%
Community sanitation activities implemented in low income neighborhoods where piped water in installed	10	10	100%
<b>Total</b>	<b>658</b>	<b>633</b>	<b>96%</b>

Sanitation data for the Dar-es-Salaam Project was the most significant disagreement under the UWSS cluster of projects. **The program, approved in 2001 -which is well outside the evaluation period-** was supported in parallel by the AfDB, the World Bank and the EU, among others. The AfDB targeted specific deliverables and program components (see table), as did the World Bank.

In designing the project in 2001, both Banks focused on physical outputs and capacity development and did not include the target number of beneficiaries in their appraisal reports. Even the WB's Implementation Completion report (ICR) noted the lack of baseline data (Para 27 on page 7, pages 71-72). Annex 2 on pages 30-31 clearly shows that the number of beneficiaries was "not included in the PAD," and there was no target. Nonetheless, IDEV uses the entire Dar-es-Salaam population of 2009 as the targeted beneficiaries for the project.

Management recommended that IDEV remove the beneficiary data from the project and maintain focus on the outputs – which are well elaborated by both the World Bank ICR and the PCR. Yet IDEV maintained the beneficiary data.

At completion, the Bank's PCR reported a satisfactory delivery of outputs as per the table above. The Evaluation confirmed this with a 92% achievement in Table 7 in the Annex of the Evaluation report.

As Table A6.6 in Annex 6 of the Evaluation shows, this inaccurate "target beneficiary" data of 3.4 million people for the Dar-es-Salaam project accounts for 60.1% of all target beneficiaries for urban sanitation, and the reported very low 14% achievement (compared to 96% achievement on outputs) distorts the sanitation outcomes narrative.

## Annex D: Lessons Learnt by IDEV and Management

Following IDEV's evaluation of the Bank's support to the Water sector and Management's response, this note highlights the key lessons, IDEV and Management learnt from this exercise and actions previously committed to in the joint response to the independent peer review of IDEV Management and IDEV have started to put the lessons into practice in IDEV's forthcoming evaluation of the African Water Facility and in a strengthened engagement process during the development of AfDB's water sector strategy.

### *Lesson 1 - Improve Engagement Throughout the Evaluation*

**Lesson** - There was not an adequate participatory process and communication between IDEV and Management early in the evaluation. This resulted in misunderstandings and disagreements later in the process.

**Way forward** - Management will ensure that reference group members have the appropriate expertise and time to engage substantively and will better explain to reference group members what is expected of them. IDEV will ensure that key reference group meetings take place, including at least for the concept note/ approach paper/inception report, technical report and final summary report (including recommendations). Reference group members will provide timely input and IDEV will take these comments into account and explain how and why they have or have not been considered. When applicable, Management and IDEV will organise joint field missions and engage relevant project stakeholders.



### ***Lesson 2 - Agree From the Outset on the Evaluation Methodology and Scope***

**Lesson** - Management and IDEV did not engage sufficiently beforehand on the methodology to be used in the evaluation to develop a shared understanding, including on how the ratings were established, the evidence-base and the source of data to be used. This was the main source of disagreement on subsequent evaluation findings.

**Way forward** - Upfront, IDEV and Management will invest time in discussing the methodology at the stage of the concept note/ approach paper / inception report, to identify the best approach and limitations of the methodology, to address misunderstandings before work is undertaken and agree to the extent possible on the methodology. Subsequent changes to the original planned methodology or scope will then be transparently acknowledged, the reasons explained, and findings presented in that context.

### ***Lesson 3 - Consult when Designing Recommendations***

**Lesson** - With insufficient engagement throughout the evaluation process, Management found the initial recommendations too general and with limited utility to the sector department.

**Way forward** - IDEV and Management will work together to ensure that there is adequate consultation on the proposed recommendations during the reference group meetings. While both IDEV and Management recognise that the final recommendations are IDEV's independent view, IDEV will involve Management in the design of action-oriented, practical, and specific recommendations and consider Management's views on the practicalities of applying the proposed recommendations.



# Introduction

This report synthesizes the results of the independent evaluation of the support of the African Development Bank Group (AfDB, or “the Bank”) to the water sector during the period 2005-2016. The evaluation covers the assistance provided by the Bank in the form of infrastructure, knowledge and analytical work for water supply and sanitation (WSS), and for agricultural water management (AWM).

The evaluation was undertaken in response to a request by the Bank’s Board of Directors for information on the results of the Bank’s support for WSS (UA 3.7 billion) and AWM (UA 2.2 billion<sup>2</sup>) during the evaluation period. Given the importance of the water sector to the Bank’s Ten-Year Strategy and the High 5s, the evaluation is also forward-looking.

The document presents the context, including the challenges, evaluation purpose and scope, and the methodology and limitations. This is followed by a description of the Bank’s engagement in the water sector, as well as a presentation of responses to the key evaluation questions and the recommendations.

## Context

This section sets out the context for the Bank’s interventions in WSS and AWM. It briefly describes the situation in the two areas, highlighting some of the guiding frameworks that shape the Bank’s work, and the key challenges the Bank seeks to address in the water sector.

## Overview

Poor access to quality water for households and industry is a major constraint to economic growth, poverty reduction, and development in

Africa. Providing safe drinking water and improved sanitation (Water for Health) is one of the major challenges facing many African countries. While progress has been made in improving access through Water Sanitation and Hygiene Promotion (WASH), the situation remains dire in several countries. National, regional, continental, and international policy documents, strategy papers, declarations and conventions all clearly lay out the issues and call for action. For the Bank, as with many other development partners, supporting the provision of clean water and improved sanitation in Africa is a priority.

In addition, agricultural water (Water for Food) is concerned with making water available and accessible for agricultural purposes. The measures taken in this respect involve irrigation, drainage and flood control, water conservation and storage, on-farm water management, and institutional support to improve sustainability, user operation and management. Collectively, these interventions are called Agricultural Water Management (AfDB, 2011 a). As noted in the draft AfDB Group Water Policy, agriculture is the largest water consumer in Africa, with an annual usage of about 86% of the total water withdrawal (FAO, 2016). Hence, the strategic agricultural use and management of water<sup>3</sup> are key to both water and food security, particularly in pursuance of SDG Goal 2, which seeks to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture. It also contributes to Goal 11, which is to make cities inclusive, safe, resilient and sustainable (UN, 2018). Current trends toward agricultural modernization and intensification are expected to have significant impacts on the volume of ground and surface water utilization. Attaining water security will, therefore, be a necessary condition for food security and sustainable agricultural growth.

### **Guiding Frameworks**

The Bank's approach to water has been shaped in recent years by an evolving international, and increasingly African, consensus that recognizes the importance of water in achieving wider development objectives, particularly the Millennium Development Goals (MDGs) and now the Sustainable Development Goals (SDGs). The main guiding instruments for the Bank's water activities are *The Africa Water Vision (AWV) for 2025* and political commitments made over the years by the African Ministers' Council on Water (AMCOW).

*The Africa Water Vision 2025*, launched in 2000 at the Second World Water Forum in The Hague, advanced the following vision for Africa: "where the use and management of water resources are equitable and sustainable and contribute to poverty alleviation, socio-economic development, regional cooperation, and the environment". This clearly places water at the center of wider development objectives in Africa. Within this vision, the Framework for Action identifies key milestones and targets, along with sets of actions and mechanisms for translating investments into action. The vision and the framework orient the objectives and priorities of action founded on the Dublin-Rio Principles. The vision also sets out milestones for 2005, 2015 and 2025. These targets concern four broad categories of action areas, including: (i) strengthening governance of water resources; (ii) improving water wisdom; (iii) meeting urgent water needs; and (iv) strengthening the financial base for the desired water future. These action areas are expected to contribute to: (i) new policy, strategy and legislative frameworks; (ii) bottom-up institutional arrangements; (iii) adherence to demand-responsive approaches while meeting the basic needs of the poor; and (iv) food self-sufficiency (UN-Water/Africa, 2009).

To ensure leadership and sufficient political support for the AWV, the African Union set up the AMCOW in 2002 with responsibility for the implementation of the AWV's objectives. AMCOW established

the African Water Facility in 2004, hosted and managed by the Bank. Other relevant overarching African policy frameworks and commitments include: (i) the New Partnership for Africa's Development (NEPAD); (ii) the Comprehensive African Agriculture Development Program; (iii) the L'Aquila Declaration consisting of a Joint Statement on Global Food Security; (iv) the Partnership for Agricultural Water for Africa; (v) the eThekweni Declaration on Sanitation in Africa, which committed countries to allocate at least 0.5% of GDP to sanitation and hygiene; (vi) the Sharm El-Sheikh commitments on Water and Sanitation; and (vii) the Sanitation and Water for All Partnership High-Level Meeting Commitments.

### **Key Challenges in the African Water Sector**

Although the water sector is experiencing various challenges that differ across countries, some of these challenges are common to all. The African Water Vision for 2025 identifies 10 key challenges for the water sector (Box 1).

**Water security as a climate change-related challenge.** Water security is one of the greatest challenges from climate change and its economic fallout (ECG, 2011). For instance, both the 2015 and 2016 World Economic Forum's Global Risk Reports identified water shortages and overuse as the greatest societal and economic risks for the next 10 years, highlighting the need for greater and more concerted efforts in addressing this challenge (AfDB, 2016a). Water scarcity - broadly understood as the lack of access to adequate quantities of water for human and environmental uses - is increasingly being recognized in many countries as a serious and growing concern.

A recent report (World Bank, 2016a) finds that unless action is taken soon, water will become scarce in regions where it is currently abundant, such as Central Africa. Scarcity will worsen the situation in regions where water is already in short supply, for example in the Middle East and the Sahel in Africa.

**Box 1:** Ten key challenges for the water sector

1. Ensuring that all have sustainable access to safe and adequate water supply and sanitation services to meet basic needs;
2. Ensuring that water does not become the limiting factor in food and energy security;
3. Ensuring that water for sustaining the environment and life-supporting ecosystems is adequate in quantity and quality;
4. Reforming water-resources institutions to establish good governance and an enabling environment for sustainable management of national and trans-boundary water basins and for securing regional cooperation on water quantity and water quality issues;
5. Securing and retaining skilled and motivated water professionals;
6. Developing effective systems and capacity for research and development in water and for the collection, assessment and dissemination of data and information on water resources;
7. Developing effective and reliable strategies for coping with climate variability and change, growing water scarcity, and the disappearance of water bodies;
8. Reversing growing man-made water-quantity and quality problems, such as overexploitation of renewable and non-renewable water resources, and the pollution and degradation of watersheds and ecosystems;
9. Achieving sustainable financing for investments in water supply, sanitation, irrigation, hydropower and other uses, and for the development, protection and restoration of national and trans-boundary water resources; and
10. Mobilizing political will, creating awareness and securing commitment among all with regard to water issues, including appropriate gender and youth involvement.

*Source: African Water Vision for 2025.*

The 2012 report on water scarcity (White, 2012) identified the projected level of water scarcity and stress in some African countries<sup>4</sup>. It concludes that countries such as Morocco, Tunisia, Algeria, Libya, Egypt, Ethiopia, Kenya, Somalia, Rwanda, Burundi, Malawi and South Africa will experience water scarcity by 2025. Moreover, the combined effects of growing populations, rising incomes and expanding cities will impose exponential water demand increases, while supply will become more erratic and uncertain.

Currently, water stress affects more than 2 billion people around the world and is projected to rise. Already, water stress<sup>5</sup> affects countries on every continent and hinders the sustainability of natural resources, as well as economic and social development. In 2011, 41 countries experienced water stress - an increase from 36 countries in 1998. Of those, 10 countries on the Arabian Peninsula, in Central Asia and Northern Africa drew more than 100% of their renewable fresh water resources (UN, 2016).

As a result, the Bank's long-term strategy, At the Center of Africa's Transformation, which sees Africa as the next global emerging market, makes water security a core driver of Africa's transformation. With only 5% of Africa's unevenly distributed water resources developed, massive investments in integrated water development and management are critical for sustainable water, food and energy security, and for green and inclusive growth.

Climate change will affect the supply of, and demand for, water infrastructure services. Water is predicted to be the main channel through which the impacts of climate change will be felt by people, eco-systems and economies (ODI, 2014). Climate change is having a multitude of immediate and long-term impacts on water resources in African countries. These include flooding, drought, sea-level rise in estuaries, drying up of rivers, poor water quality in surface and groundwater systems, precipitation and water vapor pattern distortions, and snow and land ice mal-distribution (Chika Urama and Ozor, 2010). Impacts are already being felt in African countries in all regions (Nigeria, Cameroon, Kenya, Swaziland,

Egypt) and also on selected trans-boundary water resources, for example in Lake Chad and Lake Victoria. Table 1 summarizes the vulnerability of water services to climate change.

**Water policy challenges.** In terms of policy challenges, as urbanization increases, so does the demand for better services, including clean water, basic sanitation services and food security. These demands increase pressure on local and regional water supplies.

Moreover, inadequate water supplies leave communities vulnerable to a broad range of risks and significantly affect economic progress.

The current nature and structure of the water, sanitation and hygiene (WASH) sector, for instance, creates common challenges across countries for funding and service delivery. While those challenges may differ across countries in Africa, ones in common are presented in Box 2.

**Table 1:** Summary of water services' vulnerability to climate change

Type of water services	Changes in climate	Possible impact	Example of resilience-building measures
Municipal and industrial water supply	Changes in precipitation patterns and quantities	Reduction in water availability, quality and security	Implement water use efficiency measures
Wastewater and urban storm water	More frequent heavy rainfall	Overload capacity of sewer systems and water and wastewater treatment plants	Increase capacity of drainage channels
	Periods of lower rainfall	Resulting lower flows lead to higher pollutant concentrations	Implement pollution warning system
Irrigation	Higher temperatures and levels of evapotranspiration	Greater demand for irrigation	Expand use of drip irrigation systems
	Increased variability in rainfall leading to reduced water availability	Increased pressure on existing sources of water for irrigation e.g., rivers and aquifers	Improve water efficiency

Source: World Bank 2016b.

**Box 2:** Some common structural policy issues in the WASH sector

- Poor coordination among institutions with overlapping mandates for service delivery.
- Low budget allocations from governments, and reliance on donor funds and household expenditure.
- Inequities in service delivery based on location (rural versus urban areas) and wealth (the poor often have less access and pay more per liter for their services, especially in urban areas).
- Value for money poorly understood in most subsectors and often linked to local government and municipality performance.

Source: CABRI 2017.

## Evaluation Purpose and Scope

This evaluation aims to inform the Bank's strategies and operational approach to water sector assistance by taking stock of the results of the Bank's assistance over the period 2005-2016 and drawing lessons for future work. It is intended to help the Bank's Management to: (i) account for the development results of the Bank's investment in the water sector, by determining the extent to which the Bank has contributed to the development of the water sector in RMCs; and (ii) learn from its operational experience by identifying lessons learned on how the Bank can contribute most effectively to improving the water sector performance of its RMCs.

The evaluation covers a period of 12 years, from 2005 to 2016. In this evaluation, the water sector consists of water supply and sanitation (WSS, or WASH) in both rural and urban contexts, and agricultural water management (AWM<sup>6</sup>). Thus, other water-related activities (water for electricity, transport, industry and tourism, etc.) are excluded.

All public and private sector operations in WSS and AWM, and other activities related to institutional strengthening and capacity building approved during the evaluation period are included in this evaluation. Thus, the evaluation covers 274 Bank-funded WSS operations and 144 AWM operations<sup>7</sup>.

## Methodology

The evaluation used a Theory of Change (ToC) approach, combined with the standard OECD-DAC evaluation criteria: relevance, effectiveness and efficiency of the Bank's assistance to the water sector, and the sustainability of the benefits. In the absence of an explicit Theory of Change in the Bank's policy, strategy, and appraisal reports guiding many of the operations reviewed in the evaluation, the evaluation team reconstructed a WSS and AWM Theory of Change (see Annex 1, Figures A1.1, A1.2 and A1.3; Annex 1, Box A1.1). These OECD-DAC criteria provide the basis for the evaluation questions.

The evaluation questions are:

- i. To what extent are the Bank's policies and activities in the water sector relevant to the priorities, policies and development needs of the target groups, recipient countries and in coordination and synergy with other development partners?
- ii. To what extent have the Bank's activities (lending and non-lending) been effective?
- iii. To what extent has the Bank's assistance been delivered efficiently?
- iv. To what extent are the results of the Bank's assistance sustainable?
- v. What factors enable or hinder the achievement of the results of the Bank's assistance?

Annex 3 provides the evaluation matrix, which details the evaluation questions on the basis of the four criteria. The evaluation uses a four-point rating scale as defined in Annex 5: highly satisfactory, satisfactory, unsatisfactory, and highly unsatisfactory.

The evaluation is based on multiple lines of evidence, mainly from: (i) a policy and literature review; (ii) a portfolio review; (iii) 41 project evaluation report (PER) assessments; and (iv) 10 country case studies (see Annex 1, Figure A1.4). In all, the evaluation studied 41 projects, covered 23 countries (visited during the field data collection) in depth, and conducted a desk review of the broader portfolio. The selected 41 projects cover the following subsectors: RWSS (16),<sup>8</sup> UWSS (15), AWM (9) and water sector adjustment (1).

The 41 projects were part of a purposive sample (see the sampling strategy in Annex 2) consisting of 33 completed projects (24 WSS and nine AWM) out of the total 112 investment projects (80 for WSS and 32 for AWM) approved during the period 2005-2016, plus eight projects approved in the period 2000-2004, implemented during the evaluation period, and with independent evaluation reports. Annex 4 provides the list of the sample of 41 project-level evaluations.

Ten countries were selected for the country case studies on a purposive basis (see the selection criteria in Annex 2). These selected countries were: Cameroon, Kenya, Mali, Morocco, Mozambique, Nigeria, Rwanda, Senegal, Uganda and Zambia. A total of 193 individuals were interviewed during the country cases. Data from the different sources were synthesized using software for analysis of qualitative data (Atlas.ti), and a matrix table. For more information, a **methodological note** is presented in **Annex 2**.

## Limitations

This is a very large sector evaluation, with field evidence from 41 of the Bank's water projects across a total of 23 RMCs, in addition to extensive desk review and analysis. Capturing such a large inventory of contexts with the aim of explaining how projects performed across broad contextual variations is challenging. This challenge was compounded by the evidence base, which was not of equal depth for each RMC, and the limited overlap between country case studies and project-level evidence. Nonetheless, this approach gave the evaluation geographical breadth. The challenge was addressed by approaching data analysis with the specific questions and indicators found in the evaluation matrix. As much as possible, evidence demonstrating how

circumstances across RMCs influenced the results for an indicator was provided.

Due to the fact that the Bank's database system does not clearly identify agricultural water management projects, the evaluation team applied a manual screening process to identify those projects. Through this process, it is likely some agriculture projects with water management components may have been missed.

Limited (clusters' size) and inadequacy of data also had an impact on the quality and comprehensiveness of the project evaluations themselves, and the findings in this report are based on the available evidence. The reconstructed project results logical framework was helpful in mitigating this limitation by ensuring the identification of relevant and measurable outcome indicators (see Annex 2, Table A2.1 and A2.2). Greater consistency with indicators planned at project appraisal was possible at the output level.

Another limitation concerns the quality and consistency of the data from the PERs, notwithstanding the use of a common framework. To address this limitation, a rigorous data quality assurance was put in place and effectively implemented, and evidence was triangulated from multiple sources and methods.





6500 LITRES

WMA

SEA-BASED SUB-OFFICE

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# The Bank's Engagement in the Water Sector

Over the period 2005-2016, the Bank not only had policy frameworks but also fully supported the development of WSS and AWM in Africa.

## Bank Policies and Strategies for the Water Sector

The Bank's involvement in WSS and AWM over the period 2005-2016 was guided by a number of corporate and sectoral policies and strategy documents. These included the following, whereby the more recent documents consequently apply to fewer approved interventions:

- i. **The 2000 Agriculture and Rural Development Bank Group Policy.** The specific objectives of this policy are to: (i) identify major binding constraints to growth in the agricultural sector and the rural economy; (ii) provide a strategy for the Bank's agricultural lending program; (iii) provide a strategic framework for dialogue with RMCs, regional organizations, and other development partners on agricultural rural development policy issues and country development programming; and (iv) support more effective investments for agricultural and rural development (AfDB, 2016b).
- ii. **The Bank's 2000 Policy for Integrated Water Resources Management (IWRM).** This policy calls for a new approach to water resources development and management based on recognizing competing needs and understanding the connections of the sector with socioeconomic development, water security, energy, food production, public health, the environment and other public policy objectives.
- iii. **Agricultural Sector Strategy 2010-2014.** This strategy aimed at contributing to greater agricultural productivity, food security and poverty reduction. The Bank's interventions under this strategy focused on two pillars: (i) agricultural infrastructure; and (ii) natural resources management.
- iv. **African Development Bank Group's Ten-Year Strategy (TYS 2013-2022).** This highlights the critical role the water sector plays in Africa's transformation and states prominently that "Africa must develop and manage its vast natural resources sustainably, with water central to agriculture, energy, health, and industry and mining". The strategy emphasizes that "massive investments in integrated water development and management are central to sustainable water, food and energy security for green and inclusive growth" (AfDB, 2012a).
- v. **The 2016 Draft Water Policy.** The overarching objective of the new policy is to enhance Africa's water security and transform its water assets to foster sustainable, green and inclusive socioeconomic growth and development.
- vi. **Strategy for Agricultural Transformation in Africa 2016-2025.** This multi-actor strategy to transform agriculture in Africa focuses on seven enablers: (i) increasing realized productivity; (ii) realizing the value of increased production; (iii) increasing investment in hard and soft infrastructure; (iv) expanding agricultural finance; (v) improving the agribusiness environment; (vi) increasing inclusivity, sustainability and nutrition; and (vii) developing a partnership for agricultural transformation in Africa. Within this framework, AWM plays a key role in the transformation process (AfDB, 2016b).

### Overall Bank Engagement in WSS, 2005-2016<sup>9</sup>

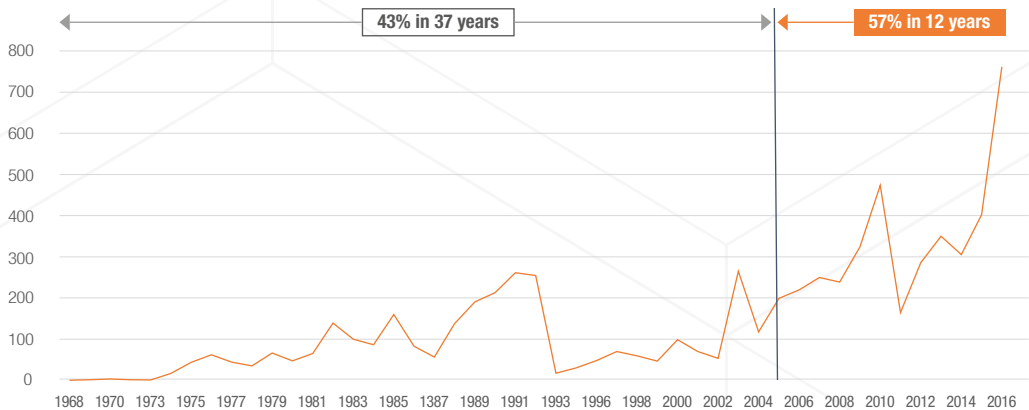
**Almost 60% of the Bank’s historical commitment to WSS was in the 12-year period 2005-2016** (Figure 1). During 2005-2016, the Bank approved a total of UA 3.97 billion for WSS services interventions. Out of the total WSS approvals during this period, 61% financed investments in urban areas, including: improving the lives of the urban poor, serving industries and businesses, and enhancing resilience to climate change risks. The remaining 39% provided WSS services to communities in rural areas (AfDB, 2016b).

**A larger-than-average amount of financial support was seen in 2016, with the Bank policy opening up AfDB funding to qualifying African**

**Development Fund (ADF) countries.** Although the amounts approved to fund the Bank’s interventions in WSS have fluctuated over the period 2005-2016, 2016 marked a peak in approvals. For example, the Kenya Towns Sustainable WSS Program was approved in November 2016 for an amount of UA 282.4 million. This amount for a single program was very close to the yearly average of approvals over the period 2005-15 for the water sector (Figure 2).

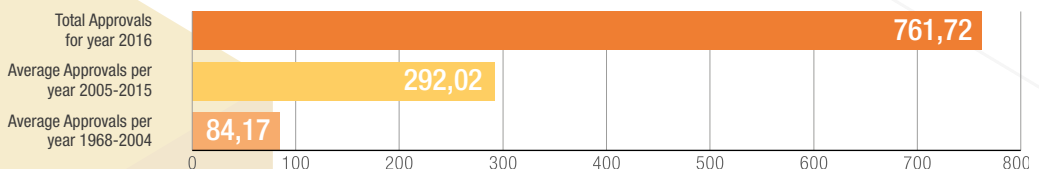
**During the evaluation period (2005-2016), the Bank approved (net) UA 3.71 billion** (157 investment projects and 66 studies), representing 70% and 30% in number of the total Bank’s WSS funded projects over this period, respectively. Of the 223 interventions, 109 are completed<sup>10</sup> and the rest are either ongoing (90), recently approved (20), or terminated (4). The

**Figure 1:** WSS sector loans and grants approvals by year (UA million)



Source: Calculated by IDEV, based on AfDB’s ERP Database (SAP).

**Figure 2:** Total and average approvals (UA million)



Source: Calculated by IDEV, based on AfDB’s ERP Database (SAP).

ADB and ADF windows<sup>11</sup> represent 86% of the net loans over the period. The Rural Water Supply and Sanitation Initiative and the African Water Facility each provided 3% of the Bank's net loans over this period, i.e., roughly UA 100 million each (Figure 3).

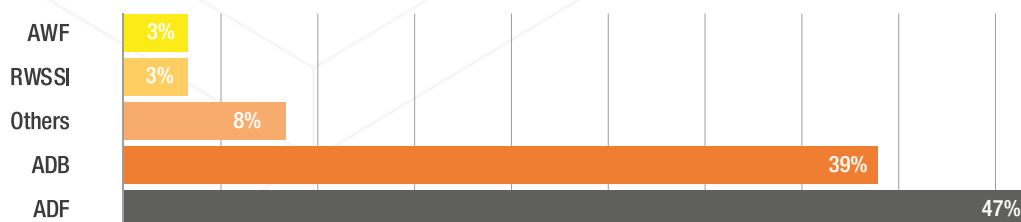
**Seven countries received 56% of the Bank's support to the WSS sector:** Kenya (13%), Morocco (11%), Nigeria and Tanzania (9% each), Zambia, and Uganda and the Democratic Republic of Congo (5 percent each). East Africa received 34% (UA 1.3 billion) of net loans and grants approved (see Annex 6, Table A6.1). This was mainly led by lending to Kenya, Tanzania, Uganda and Ethiopia, which together received around UA 1.2 billion. This was followed by West Africa, with Nigeria as the top beneficiary receiving UA 314 million, and North Africa, led by Morocco, which received about UA 416 million. Southern and Central African regions trailed with 14% and 10% of total net approvals, respectively. Multi-national operations represented only 3% of the total net amount approved in the same period.

### Overall Bank Engagement in AWM, 2005-2016<sup>12</sup>

In the period 2005-2016, the Bank approved 353 loans and grants in the agriculture sector, amounting to about UA 4 billion and representing more than 13% of Bank-wide approvals. **Of these approvals, more than 40% had water management components, amounting to UA 2.2 billion.** These components mainly comprised drilling boreholes, the construction of water control schemes, watershed management, and irrigation and drainage (Figure 4).

**During the period, almost 60% of the Bank's operations in AWM, both in terms of net loan volume and the number of operations, were funded by the ADF,** followed by the Bank's ADB window with 12% of the operations and 24% of net loan volume. The financing instruments that were used to fund AWM operations in 2005-2016 were: project loans representing 62%; project cycle grants representing 20%; and sector adjustment funding representing 10%.

**Figure 3:** Net loans and grants by funding window (2005-2016)



Source: Calculated by IDEV, based on AfDB's ERP database (SAP).

**Figure 4:** Bank-funded agriculture loans and grants, 2005-2016 (percent)



Source: Calculated by IDEV, based on AfDB's ERP database (SAP).



# Extent of the Achievement of Development Results and Sustainability

The Bank's 2005-2016 water sector interventions are relevant and in general delivered their outputs, but their achievement of outcomes falls short of expectations, and they are unlikely to be sustained (see Annex 7). Multiple factors, both internal and external, account for this performance.

## Relevance

*The relevance of the Bank's support to the water sector was examined at three levels: strategic objectives, the objectives of projects, and the design of projects. The objectives of the Bank's water sector strategic documents (policies, strategies and initiatives) and water projects were found to be aligned to its corporate policies and strategies, the RMCs' priorities, and international targets. The projects' objectives were aligned with beneficiaries' needs, but project design was often flawed or did not adequately consider those needs. The Bank's interventions also showed other design weaknesses, including gaps in risk assessment. More positively, some innovations in designing Bank's interventions were identified in terms of implementation arrangements and the introduction of public-private partnerships (PPPs). Overall, the relevance of the Bank's support was assessed as satisfactory.*

**The objectives of the Bank's water sector strategic documents (policies, strategies and initiatives) mainly focus on enhancing water security for sustainable, green and inclusive socioeconomic growth and development in Africa.** These objectives are aligned to those of the:

- i. *Bank's Ten-Year Strategy (TYS 2013-2022), Integrated Water Resources Management Policy (IWRM) and relevant sector policy and strategy documents including those for agriculture and rural development (see the Bank Policies and Strategies for the Water Sector in the previous section*
- ii. *Africa Water Vision for 2025, which aims for "an Africa where the use and management of water resources are equitable and sustainable and contribute to poverty alleviation, socio-economic development, regional cooperation, and the environment" (AfDB, 2016d).*
- iii. *Millennium Development Goals (MDGs), World Water Vision 2025, and most recently the Sustainable Development Goals (SDGs).*

In addition, RMCs' national plans and targets were often conceived with the MDGs in mind, specifically, Goal 1 (to eradicate poverty and hunger) and Goal 7 (to ensure environmental sustainability). From the project cluster analyses, 71 percent of the 41 project appraisal reports (PARs) reviewed explicitly reference the MDGs in terms of alignment with the intervention objectives.

**The relevance of the objectives of the Bank's water sector interventions to the RMCs' needs was rated as satisfactory.** From the PERs, the objectives of the Bank's interventions were generally aligned to the RMCs' priorities. All 41 PERs cited at least one of the key Bank policy documents as a basis for guiding project objectives. Similarly, the Bank's overarching approach to water - improved access to and use of safe water as a means to achieve poverty reduction and socioeconomic

development - was reflected in the objectives of all water projects examined in the cluster analyses. The relevance of the Bank's water sector objectives was also confirmed by the country case-study interviewees, who largely perceived the Bank's policies and projects as being relevant to the RMCs' water development challenges. This was attributed to the Bank's close working relationship with RMC governments and the participatory process through which the Bank's country strategy papers were developed to ensure that they reflected the RMCs' water development needs.

**The Bank's water interventions have relevant and clear development objectives and were based on a demand-driven approach. Nonetheless, their design was largely unsatisfactory.** Only 44 percent (18<sup>13</sup> out of 41 projects) was rated satisfactory in terms of the relevance of design. Furthermore, all 41 projects presented a weakness in at least one specific aspect of their design (47% for UWSS, 38% for RWSS and 44% for GEA)<sup>14</sup>. These weaknesses mainly reflect shortcomings in the strategy for achieving water interventions' results as per the sectoral Theory of Change, the way the demand driven-approach was operationalized, and in risk assessment.

**The strategy used in pursuit of the water interventions' objectives was limited.** The Bank, through policy dialogue, has been advocating for and financing investments in sanitation, but sanitation remained a major challenge. Furthermore, the water sector interventions in RMCs supported by government and development partners focused their efforts more on water supply than on improved sanitation, notwithstanding the fundamental importance of improved sanitation in preventing waterborne illnesses. This could be due to the tight government budget constraints relative to the huge public funding gap. It could also be attributed to the shortcoming of approaches used in Bank-funded sanitation interventions in RMCs.

In addition, while examples of Bank projects specifically targeting private sector development

were cited in Morocco, Mali AWM and Nigeria, stakeholders in six of the 10 case studies (Senegal WSS, Zambia WSS, Mozambique WSS, Mali WSS, Kenya AWM, and Cameroon WSS) noted insufficient support to private sector actors as a common shortcoming. The policy and literature review revealed that, within the water sector, developing and supporting SMEs enhances local entrepreneurship for, among others, well and latrine building, repair services, and supply of spare parts. In fact, while the private sector has taken on an increasingly important role in water infrastructure operation and maintenance, more capacity needs to be built.

**Key lesson 1:** The adoption of approaches driven by the beneficiaries is relevant when applied in a coherent manner. The extent and quality of collaboration with local stakeholders matter.

**The demand-driven approach was largely in use, although it was not always effective in capturing beneficiary needs.** The demand-driven approach was used in nine of the 16 RWSS Initiative projects, and six of the nine AWM projects. Evidence from the country case studies points to progress over time in the use of the demand-driven approach in project designs. This approach was effective in the Chad, Ghana, Mali and Rwanda RWSS projects. In Ghana, for instance, active participation by community members throughout project implementation was noted. This was made possible due to over 600,000 community members being involved in the various activities related to raising awareness and understanding of the demand-driven approach. In addition, for Rwanda, the programs used a local community demand-driven approach that increased beneficiary involvement in defining the WSS sub-projects, and in the construction and management of facilities through decentralized authorities established by the government, including the community development committees (CDCs), and the Local Development Support Fund. In contrast, the approach was not effective in the cases of other projects funded



within the RWSS Initiative (Tanzania<sup>15</sup>, Mauritania, Senegal, and Uganda), and those not funded by the RWSS Initiative (Burundi, Burkina Faso, and both Zambia projects). Closely associated with the limited use of the demand-driven approach was inappropriate technology choice noted in these projects. This shortcoming is indicative of limited community participation in project design, especially in reflecting community needs. The cases of Burundi, Burkina Faso, Mauritania, and Zambia Central Provinces RWSS show very low participation by the population in the choice of WSS technology. In Burundi for instance, the Ministry of Public Health selected the Ecological Sanitation (Ecosan) latrine type instead of the improved ventilated improved pit (VIP) latrines. As the Ecosan latrine type was not compatible with the habits and practices of the school population, they were not effectively used and managed. In Burkina Faso, the project beneficiaries complained about the boreholes equipped with Vergnet brand pumps because of the difficulties in operating and maintaining them, and the inappropriate design of equipment for use by pregnant women and elderly people. In addition, the overhead water tanks of the same brand were difficult to maintain, as they were not easily accessible.

In the AWM interventions, the demand-driven approach was effective for the Gambia Farmer-Managed Rice Irrigation Project<sup>16</sup>. This project used an appropriate mechanism for effective participation of the local community to ensure ownership and sustainability. In contrast, beneficiary needs were not adequately considered during the design stage in the Madagascar, Nigeria and Mali<sup>17</sup> projects. The evaluation of the IWRM policy (AfDB, 2013a) produced a similar finding. It noted, “The involvement of local communities and agencies was essential, and while a participatory approach was often recommended in the project appraisal document, this was not sufficiently detailed”. The policy and literature review, and key informant interviews, also point to the importance of appropriate stakeholder engagement for quality project design, and support the statement: “having

local partners engaged in all phases of the project is key as they have a better understanding of the local context, processes and procedures” (AfDB, 2015). Beneficiaries’ engagement in the design stage increases contextual relevance of interventions, and can positively affect both effectiveness and efficiency.

**Key lesson 2:** Applying design-based standards to the detriment of flexibility of service delivery could be a risk factor for the system. For instance, proper control of the activated sludge process is essential in ensuring the production of good

**Regarding UWSS, the project designs in Senegal, Mauritius, Ghana, and Mauritania were mainly driven by the selected technology rather than considerations of technical and financial appropriateness.** Inadequacies were associated with the technological options for the Bank-funded WSS interventions in the Senegal, Mauritius, Ghana, and Mauritania projects. For instance, the use of a tertiary treatment system of domestic wastewater (e.g., activated sludge process) with complicated and energy-intensive technologies necessitates capacity building to ensure that the skills to operate the system efficiently are available locally, both now and in the future. This was problematic in Mauritius and Senegal. Technologies used were not fully appropriate and they reduced the functionality of the systems. This was the case for the Senegal<sup>18</sup>, Ethiopia, Mauritania<sup>19</sup>, Kenya<sup>20</sup> and Mozambique Niassa projects. This resulted in a number of failures and reduced project benefits.

**Key lesson 3:** Lack of appropriate assessment of critical water sector risks, such as tariff adjustment, water resource management and conservation, maintenance of facilities, and institutional capacities can undermine the achievements.

**Critical risks were not adequately addressed.** Although water sector reforms and continued government commitment were clearly identified

as risks in all of the 41 projects reviewed, tariff adjustment was not given adequate consideration in seven out of the 15 UWSS projects<sup>21</sup>. Critical risks concerning the reliability and quality of water resources<sup>22</sup> were also not adequately addressed. Water resources management and conservation risks were only covered in five projects (in Morocco [2], Kenya [1] and Tanzania [2]) out of the 15 UWSS projects. The evaluation of the IWRM policy (2013) had a similar finding: only five out of its sample of 40 projects explicitly addressed water resources management and conservation risks. In addition, the maintenance and sustainability of facilities were not adequately addressed in nine out of the 15 UWSS projects. Furthermore, only two of the 15 UWSS projects raised risks concerning energy costs, institutional capacity, private operator failure, population and livestock growth, complementary programs and the quality of distribution networks.

For RWSS, institutional capacities were the most common risk noted in 11 of the 16 projects reviewed. Communities' and beneficiaries' contributions were only present in seven of the 16 RWSS projects<sup>23</sup>. Other critical risks linked to the Theory of Change were not appropriately presented in the project appraisal reports (PARs). For instance, those concerning maintenance and sustainability of rural WSS facilities were addressed only in four out of the 16 projects. In addition, risks related to behavior change were only raised in the Zambia National Rural WSS and Mali projects.

With regard to AWM, neither the beneficiaries' needs nor the risks associated with the multiple users were adequately considered during the

project design stage in the Madagascar<sup>24</sup> and Nigeria projects.

**Project design was also adversely affected by political interference.** From the Ghana and Kenya case studies and the Comoros project assessment, the location and management of water supply and sanitation services were politically determined without due consideration for technical and social issues. This adversely affected the quality of water and sanitation project design, and the operation and management of water supply and sanitation services.

Private-sector engagement in operating and managing water and sanitation facilities was seen to be a useful approach in all the project countries. Private-sector performance was weakened by political interference in project design and management, and a weak regulatory environment. The Tanzania project was a case in point (Box 3). The PPP, a central pillar of the initial project design, collapsed mainly because of design shortcomings (including insufficient stakeholder participation) resulting from political interference.

**The quality of the project feasibility studies was also an issue.** Such studies were meant, inter alia, to identify the needs of beneficiaries, and the expected project costs and benefits. They were carried out by governments, with Bank support from various trust funds and project preparation instruments (e.g., African Water Facility). In the past, preparatory studies were carried out following project approval, which sometimes led to lengthy delays in project execution. Feasibility studies are now being conducted prior to project approval.

### Box 3: The failure of a PPP in Tanzania

The leasing contract was awarded in a single-bidder process to City Water Services Limited (CWS) after three rounds of bidding that took five years. Other bidders who were not selected raised issues of risks and baseline data. The government did not consider these two issues in contracting CWS. After two years of operation, CWS ceased to operate or maintain the system due to increasing costs and unpaid bills. As a result, the PPP collapsed, and the government had to establish a state-owned utility to take over and manage, operate and maintain the system.

**Source:** Tanzania Dar es Salaam WSS PER.

**Box 4:** Toward a PPP in Rwanda's rural water supply

Community management of rural water supply was implemented in Rwanda from 1987-94 when community water management boards were established in all districts. Standpipe users were grouped into committees whose members were elected by the users. The model very quickly showed the following limits: (i) volunteering among water point committee members; (ii) lack of technical skills (i.e., professionalism); (iii) absence of user responsibility, reflecting non-ownership of facilities; (iv) failure of users to pay fees on a regular basis; and (v) poor financial management (including embezzlement of funds). These elements along with the lack of skills, accountability, and funds led to poorly maintained water systems.

A 2004 evaluation of RWSS infrastructure management concluded that the community management model had failed, leading to Rwanda essentially abandoning the method and adopting a private-operator management method through a PPP. Under this system, local authorities (districts) own the system by virtue of a decentralization process. In 2010, government support of the World Bank's Water Supply Program updated the WSS Policy, emphasizing sustainability and improving WSS via established the Rwandan Energy, Water and Sanitation Authority (EWSA) to operate in urban areas and oversee water and sanitation service provision in rural areas. EWSA supports the district-based transparent procurement of private operators to operate and maintain WS infrastructure. The government is now considering water sector restructuring, capitalizing on EWSA's experience in utility management to extend its mandate to engage the private sector directly to manage rural water infrastructure and big PPP projects where feasible. The role of the private sector in WSS will still include delegated management and be extended to models such as the Independent Water Producer and thereby attract big investors into the sector.

**Source:** Rwanda 1 PER.

**Key lesson 4:** Poor quality feasibility studies lead to poor quality of project design and subsequent implementation challenges.

According to interviews with Bank staff, conducting feasibility studies prior to approval represents an improvement over the previous approach. The one-size-fits-all approach of the pre-approval process, regardless of country capacity, presents challenges. The time required from submission to approval by the committee may also impose pressures that can adversely affect the scope of the feasibility studies. The country case studies and PERs show that feasibility studies were sometimes rushed, or skipped important steps in compliance with urgent political demands for the project. The policy and literature review found the short turnaround of feasibility studies to be detrimental to their scope. This situation has contributed to poor project design, and subsequent problems in project execution, as was the case for the following projects: Senegal Sanitation project, Rwanda PADAB, Cameroon Semi-Urban WSS, Madagascar, etc. For example, the Cameroon Water Supply and Sanitation Project for Semi-Urban Areas could only complete the construction of 40% of its target household latrines because the costs were

higher than anticipated. The costs for this project were underestimated because of the failure to undertake a proper assessment at the feasibility stage. Feasibility studies thoroughly carried out prior to project approval by governments and supported by various Bank initiatives, improved not only the quality of the project design but also the efficiency of project implementation. From the literature review and Bank staff interviews, properly conducted feasibility studies and regular supervision missions were essential, not only to ensure the efficient implementation of projects but also to ensure their sustainability.

**Some innovations in designing the Bank's interventions were identified (implementation arrangements and introduction of a PPP).** Given the political situation of Zimbabwe, which was facing economic sanctions that could not allow project financing to be channeled through the government system, the Bank innovatively designed the implementation arrangements to suit the given circumstances. This is particularly important when supporting countries in fragile situations whereby normal arrangements are difficult to apply. In Rwanda, the introduction of a PPP provided an innovative aspect to the Bank's actions in the area of rural

water supply following the failure of the community management model (Box 4). In addition, the Kigali Bulk Water Supply presents an innovative case where under the PPP arrangement, Kigali Water Limited (a private entity) will supply bulk water to the Water and Sanitation Corporation (WASAC), the government water utility company, which WASAC then sells to the local consumers.

The relevance ratings are summarized as follows:

Assessment criteria	Rating
Extent to which the objectives of the Bank's water sector strategies, policies and initiatives are aligned with the Bank's corporate policies, RMCs' development priorities, and international targets.	Satisfactory
Extent to which the objectives of Bank water interventions are aligned with RMCs' development strategies, Bank strategies, and beneficiaries' needs.	Satisfactory
Extent to which the design of water Bank interventions is conducive to achieving results.	Unsatisfactory
<b>Relevance</b>	<b>Satisfactory</b>

## Effectiveness

*The effectiveness of the Bank's support to the water sector was rated at three levels: achievement of high-level objectives, achievement of outputs, and achievement of outcomes. In the areas of WSS (UWSS and RWSS), a distinction was made between the water and the sanitation components. The evaluation found that there has been progress over the MDG period (2000-2015) in terms of access to water in RMCs, and there is scope to do more, particularly in terms of sanitation. While the water component of the WSS interventions examined delivered the essential physical outputs for improving access to reliable and affordable water services, the same cannot be said of the sanitation and AWM outputs. The Bank delivered substantial capacity development and awareness campaigns, but project service delivery and beneficiary behavior change remained limited, which contributed to the non-achievement of the expected intermediate*

*outcomes. The extent of achievement of these outcomes varied across the subsectors. The RMC context was one of the driving factors hampering performance at the outcome level. Overall, effectiveness is rated as unsatisfactory.*

## WSS Effectiveness

Africa-wide progress in the WSS sector is marked by a more positive story for access to water than for sanitation. In the 10 country case studies, eight met clean water supply targets, but only one - Morocco - met the sanitation targets. Rural areas lag behind urban areas for both water and sanitation. Box 5 provides additional data regarding sanitation and hygiene progress from the 10 case-study countries and illustrates the high level of variation in progress made by countries.

The assessment of outcomes achievement was done by investigating subsector change factors related to outcomes in the context of the anticipated Theory of Change. For WSS interventions, the outcomes include: (i) increased access to and use of improved water sources; (ii) improved water services delivery; (iii) increased access to improved sanitation services; and (iv) increased adoption of key hygiene behaviors/practices. Regarding AWM interventions, the outcomes include: (i) increased access to water for irrigation; (ii) improved AWM services delivery; (iii) increased agricultural production and productivity; and (iv) increased income generation for project beneficiaries.

### Urban Water Supply and Sanitation

#### UWSS Outputs Achievement

**The Bank's UWSS projects produced satisfactory physical infrastructure outputs for water supply, but less so for sanitation facilities and services.** The Bank's support delivered a significant number of water supply infrastructure outputs. All the 15 UWSS projects, except Kenya and Senegal, achieved more than 75% of their

**Box 5:** Selected sanitation indicators from the 10 case-study countries

Improvements in access to sanitation during the period 1990-2015 ranged from a low of 9% to 49% in Nigeria, and 52% to 77% in Morocco. In Rwanda, access to improved sanitation increased from 33% to 62% in the same period. Among the 10 countries, only Morocco met the MDG target on sanitation. Cameroon, Kenya, Mali, Mozambique, Nigeria, Uganda and Zambia made limited or no progress on sanitation goals. Senegal made moderate progress and Rwanda made good progress.

Open defecation in rural areas across the 10 countries improved from 27.2% in 2005 to 20.6% in 2015. From 2005 to 2015, Morocco decreased the proportion of rural open defecation by 16%, followed by Senegal (13%). Nigeria made no progress, with a 1% increase. In 2015, Rwanda and Uganda had the lowest prevalence of open defecation in rural areas, at 1.9% and 8.1%, respectively. Rural open defecation was highest in Mozambique (52%) and Nigeria (34%). In urban areas, the proportion of the population defecating openly dropped from 5.0% to 3.9% between 2005 and 2015.

The scant data available on handwashing facilities with soap and water suggest that it is low, averaging 20.7% in urban areas and 7.3% in rural. In 2017, five of the 10 countries had included community-led total sanitation in national policy or plan: Kenya, Mali, Nigeria, Uganda and Zambia.

**Source:** WHO/UNICEF Joint Monitoring Program (JMP) for Water Supply and Sanitation ([wssinfo.org](http://wssinfo.org)) and WHO/UNICEF (2015) Progress on Sanitation and Drinking Water: 2015 Update.

expected physical infrastructure outputs. The undelivered water supply infrastructure outputs were mainly due to the tight financial constraints, which led to the scaling-down of projects. This was the case in nine of the 15 urban WSS projects (Senegal, Mauritania, Kenya, Tanzania Monduli, Mozambique Niassa, Mozambique UWSS, Congo, the Comoros, and Ethiopia). The main physical water supply outputs included water intake, boreholes, treatment plants, transmission lines, reservoirs of tanker water, distribution networks, kiosks and boreholes, meters and lab facilities.

**The level of sanitation outputs achieved was low.** These outputs included: wastewater treatment plants, sewerage networks, sewer pumping stations, reservoirs, pipelines to transport raw water and treated water, remote management systems; households' latrines and public toilets; and hand-washing facilities. Only 42% of the UWSS cluster projects achieved more than 75% of the expected sanitation physical outputs (Annex 6 Table A6.7).

**Under-utilization of water infrastructure.** Some of the water supply systems that were installed, rehabilitated or extended under the cluster projects, were not optimally used or were not functioning at the time of the evaluation. The under-utilization

of the water infrastructure was mainly due to: (i) insufficient water availability at source (Mtoni for Tanzania DWSSP); (ii) lack of appropriate distribution network (Tanzania Monduli, Mauritania<sup>25</sup>); (iii) design shortcomings (Kenya); (iv) lack of a stable power supply (electricity) to pump the water (Tanzania DWSSP); and (v) lack of an appropriate structure to manage the facilities, thus leading to their non-use for a long period following their delivery (the Comoros<sup>26</sup>).

**The Bank also provided institutional strengthening and capacity-building activities for improved service delivery, and better operation and maintenance,** including billing efficiency, metering ratios, and logistical support. The support activities were focused on providing equipment and studies. Outputs were mainly in terms of office rehabilitation (the Comoros and Kenya) and provision of equipment (the Comoros, Ghana, Kenya, Mozambique, and Tanzania MoWSS). In addition, studies were delivered in support of: (i) water utilities (Mauritania and Senegal); (ii) urban WSS sector strategy and water resources plan (Tanzania); (iii) sanitation strategy and planning (Congo and Tanzania DWWP); (iv) strategic institutional framework (the Comoros); and (v) a gender mainstreaming strategy (Kenya). The Bank also provided

technical assistance for the UWSS in Ethiopia, Ghana and Mozambique.

### UWSS Outcomes Achievement

**The UWSS interventions achieved satisfactory water outcomes**, notwithstanding the challenges in sustaining access to potable water and improved sanitation services. Thirteen of the 15 UWSS cluster projects achieved significant outcomes in terms of: (i) access to potable water; (ii) access to improved sanitation services; and (iii) operational capacities. The benefits of UWSS were most clearly manifested in Morocco and Mauritius, where the governments integrated UWSS with tourism and small- and medium-sized business opportunities within their integrated development strategy and plans. This approach optimized UWSS use, business development and expansion, and helped to raise living standards.

**Key lesson 5:** The capacity and capabilities of service providers to deliver services that are long-lasting are critical in maximizing the impacts of water interventions.

**Improved access to potable water.** The 15 UWSS project support provided potable water to about 6 million (79%<sup>27</sup>) of the target of around 8 million people in the project areas. This performance was variable, spatially uneven in terms of distribution, and challenged by failure to deliver uninterrupted potable water supply. Only four (36%) out of 11 of the cluster UWSS projects with complete dataset met their anticipated number of beneficiaries, while 72% of projects met at least 75% of anticipated beneficiaries (Annex 6, Table A6.6). In fact, none of the UWSS projects achieved the objective of potable water supply for 24 hours per day to all customers. The number of hours of water service per day varied between localities within the same project<sup>28</sup> and across projects (e.g., on average 17 hours for Kenya and Mozambique Nassia, 12 hours for Mozambique Urban WSS and Institutional Support, and 9 hours for Tanzania Monduli District WSS). For the Tanzania Dar es Salam WSS project, only 25%

of customers obtained 24 hours of water supply service at the standard pressure level, compared with the planned rate of 70%. For the Ethiopia Harar project, customers received water for only 14 hours per day. In Ghana Huni Valley, users reported an effective water flow of just 2 hours a day. In the case of Isiolo<sup>29</sup> (Kenya) the level of potable water supply declined after the intervention.

**Key lesson 6:** Balanced investment between water production, distribution and sanitation is critical in maximizing the impact of UWSS interventions.

The main reasons for this are the following:

- i. Failure to adequately incorporate the effect of population increase in project design.
- ii. The under-utilization of water production capacity (Tanzania DWSSP, Mauritania). In addition to the unrealized water production capacity (about 25%), the available water production capacity was not optimally used because of the multiple factors already highlighted under the output section above.
- iii. The low quality of the water distribution network resulting from limited investment and inadequate performance of the water utilities (with the exception of Morocco), leading to high levels of non-revenue water (NRW) and water contamination. Some of the urban water distribution networks were aging and of inadequate quality (Mauritania and Kenya). They adversely impacted on the project benefits because of water leakages and contamination from wastewater. In the case of the Mauritania project, for example, water leakage from the old system was 58%. In addition to the water loss, the wastewater leaking from septic tanks and the sewage network was a source of contamination in the water supply network. This exposed the beneficiaries to health hazards, including waterborne diseases. Furthermore, the capacity of the water utilities was inadequate in almost all

of the 10 case-study countries, and also in the countries visited for the project cluster evaluation. According to a recent World Bank study (2017a), water utilities in Africa are generally underperforming, with relatively weak customer performance. At the same time, it is important to mention the cases of Burkina Faso's National Office of drinking water (ONEA) and Uganda's National Water and Sewerage Corporation (NWSC), which became well-performing entities thanks to reforms supported by the Bank.

- iv. In some cases, the project delivered to customers water that was not tested (e.g., Ethiopia and Mozambique Niassa in Lichinga) or not sufficiently tested<sup>30</sup> (e.g., Mozambique Niassa, Kenya).
- v. Investment imbalance regarding water production, distribution, and sanitation, with the Bank's projects being focused on water production capacity. Three of the 15 UWSS cluster projects with no sanitation components were associated with negative environmental impacts.

**Wastewater management.** This can affect the beneficiaries' health if the wastewater is not properly treated and discharged. In addition, and in the absence of a complete and controlled proper sewerage system, dumping the wastewater can negatively impact the groundwater aquifers and water supply quality. Leaking supply pipes was also another source of potable water contamination. In the presence of heavy rainfall, as is the case in Mauritania, this can also result in flooding outside the system. Wastewater management was successful in Morocco and Mauritius, but not

in the rest of the case-study countries. In general terms, the Mauritius and Morocco projects made good progress toward the development objective of environmentally appropriate collection and treatment of sewage and disposal of effluent and sludge. For Mauritius, the St Martin plant is treating sewerage to a level higher than targeted at appraisal<sup>31</sup>. The lack of baseline information, in general, and the lack of M&E mechanisms for the project's environmental and social aspects, in particular, make it difficult to accurately report on progress toward the project's development objectives, at least against the targets identified at appraisal. In Morocco, the lagoon technology was well tested and adapted to the size of the two cities (Boujaâd and Oued Zem) and their climatic environments. While this technology is land-intensive, it has two major advantages: the purification process is natural and does not require energy, and the quantity of sludge produced is low compared with the "activated sludge" process. This latter advantage is crucial, as sludge management is currently a major concern for the country.

In the case of Senegal, the UWSS project delivered an incomplete wastewater treatment plan. This led to inadequate treatment capacity of the plant in relation to the volume of wastewater entering, where part of the pre-treated effluent was rerouted (by-pass). Much of the excess sludge was discharged with the purified effluent because it could not be treated. ONAS's sea discharge objective for 2009 was 85%, which it failed to achieve. In fact, the specific average treatment output (sea discharge) for the last year of operation with data (2009)<sup>32</sup> was about 75%, with a minimum of 56% and a maximum of 81%.

**Box 6:** Some emerging good practices in wastewater management in Mauritius and Senegal

- **Mauritius:** The volume of treated effluent used for irrigation is 4.7 million m<sup>3</sup> in 2015. The plant could generate 91,913 kWh of electricity in December 2016. The sludge disposal reached 300.2 tons in December 2016. About 25% of the plant's energy needs are generated through methane gas.
- **Senegal:** Methane gas production saved 30-35% of operating expenses and electricity bills.

**Source:** Mauritius and Senegal PERs.





**Figure 5:** Typical Uganda WSSP mini solar-powered pumping scheme



With the exception of Mauritius and Senegal (Box 6), the commercialization and use of sanitation by-products (treated water, sludge, and biogas) remained weak in all the project countries. For Senegal, the volume of purified water sold was about 3,000 m<sup>3</sup>/month in 2010. This dropped to 574 m<sup>3</sup>/month in 2011 due to the suspension of distribution to the Dakar-Technopole Golf Club in 2010, the only remaining consumers being market gardeners<sup>33</sup>.

#### **Challenging sanitation intervention outcomes.**

The performance of the urban sanitation interventions was a challenge for all project countries (with the exception of Morocco). Regarding improved sanitation services, the UWSS project cluster was expected to cover around 6 million people in the projects' areas but only provided access to about 2 million people (42%<sup>34</sup>). Only two of the nine cluster Urban Sanitation projects (22%) met their anticipated number of beneficiaries, while 56% of projects met at least 75% of anticipated beneficiaries (Annex 6 Table A6.6). The UWSS sanitation performance was weakened by the low level of sanitation outputs, some of which, particularly the latrines, were not fully functional. Table 2 below shows the variable levels of sanitation results of three of the UWSS projects.

The uneven UWSS sanitation results are further illustrated below:

- i. In Ethiopia, the UWSS project delivered the sanitation study in full, but only half of the expected hygiene education and awareness creation activities and works. In addition, none of the other sanitation arrangements, including construction of public and communal latrines, was effective.
- ii. The Ghana, Mozambique Niassa, Mozambique UWSS and Tanzania Monduli projects focused on creating awareness on the need for improved sanitation and hygiene at the community level to facilitate the construction of household toilets. In this respect, the projects only constructed demonstration latrines. This strategy proved successful where ownership was effective (Mozambique and Tanzania). In contrast, household latrine uptake was very low in Ghana<sup>35</sup>. Two other projects partially accomplished the required sanitation components, namely Kenya and the Comoros.
- iii. Although public latrines were built, they were not working properly or were not used in nine out of 15 UWSS cluster projects. This was mainly due to: (i) technical challenges (Ghana); (ii) lack of ownership (Ghana, Congo); (iii) inappropriate setting (Ghana, the Comoros); and (iv) a lack, remoteness or deterioration of piped water connections (Mozambique Niassa, Congo, the Comoros).

**Table 2:** Sanitation results in selected AfDB-funded projects

Project	Expected	Realized
1. Senegal Dakar City Sanitation Project	Two new treatment units, each with a capacity of 10,000 m <sup>3</sup> /day, put in place.	The project was able to build only one incomplete unit (without a sludge treatment process) with a capacity of 11,300 m <sup>3</sup> /d, falling short of the target due to a drastic reduction in the volume of work initially planned for this component. Overall, the project has helped to increase the secondary treatment capacity of the Cambéréne Wastewater Treatment Plant from 5,700 m <sup>3</sup> /d to 17,000 m <sup>3</sup> /d.
2. Congo Brazzaville and Pointe Noire Sanitation Project	Four excreta treatment plants built in Brazzaville and Pointe Noire.	Four excreta treatment plants built in Brazzaville and Pointe-Noire. However, the plants are still struggling to work well due to construction faults, theft of equipment and operating budget shortfalls.
3. Morocco Nine Drinking WSS	Volume of treated water: 20,000 m <sup>3</sup> /day	26 % of target achieved.

### Limited capacity to ensure adequate service delivery.

Capacity issues also constrained the performance of the UWSS sanitation interventions. For example, in the Dakar City Sanitation Project in Senegal, efforts to build capacity within the national authority in charge of sanitation were hindered by the lack of infrastructure maintenance or a development plan. In Kenya, partly because of capacity constraints, the UWSS project failed to achieve its target of reducing NRW from 60% in 2007 to 30% in 2012. In Isiolo, the water service provider had to decommission some of the new distribution lines due to the high number of leakages and pipe bursts. The Mauritania urban water supply project helped to strengthen the private sector by creating a favorable environment for nurturing small enterprises in WSS (network installation works, plumbing, and various services). The project failed to provide sufficient capacity building to SNDE, a key player in the water sector institutional framework (AfDB, 2015). At the same time, some success stories of Bank's interventions were identified in terms of strengthening the performance of utilities in urban projects in Burkina Faso (ONEA) and Uganda (NWSC), with substantial turnaround effect on the water utilities.

### *Rural Water Supply and Sanitation*

#### **RWSS Outputs Achievement**

**Satisfactory physical outputs of the water components.** The projects delivered the essential

physical infrastructure for improving access to reliable and affordable water supply in rural areas. All of the 16 cluster projects, with the exception of the Uganda WSSP, produced more than 75% of their expected water infrastructure outputs, with six of the projects exceeding their planned physical outputs. Six of the 16 projects (Burundi, Mali, Ghana, Mauritania, Zambia National RWSS, and Zambia Central Provinces RWSS) were scaled-down, mainly due to financial constraints and changes in technology, thus adversely impacting the quantity and quality of their outputs. Also, the rural water supply outputs were challenged by the extent of their functionality and water quality (see details below). Not all the delivered RWSS outputs are functioning at full capacity.

The main physical rural water supply outputs included constructed or rehabilitated boreholes, piped schemes, wells, water supply systems, water points, drilling, and pumping systems. Two main water supply systems that were used are: (i) pumping systems (13 out of the 16 projects); and (ii) gravity systems (seven out of the 16 projects). The most common systems used to extract groundwater included hand pumps (seven out of 16 projects) and diesel/thermal electrified pumps. Solar systems were developed in Burkina Faso, Mauritania and Uganda WSSP (Figure 5).

**The physical outputs of the projects' sanitation components (including public toilets and household latrines) were moderate.**

Around 64% (9) of 14 RWSS cluster projects (with complete data) achieved more than 75% of the expected sanitation facilities (Annex 6, Table A6.4). The remaining five projects (Burkina Faso, Chad, Ghana, Zambia National RWSS<sup>36</sup>, and Uganda WSS) provided less than 65% of their expected sanitation facilities. Furthermore, only the Rwanda phase 2 and Zimbabwe projects made adequate arrangements for fecal sludge management. The rest of the projects did not consider waste management. In Ghana, for instance, the project increased the number of latrines but provided no plans for households to empty their pit toilets. Similarly, pit toilets in Chad were left unattended once they became filled up due to the high cost of emptying them. In the absence of adequate household waste management, some of the project latrines were not used effectively.

**The Bank's RWSS interventions did not significantly increase the number of household latrines for the rural population.**

The number of household latrines constructed through the RWSS cluster projects<sup>37</sup> was relatively low (90,910 latrines) compared with the real needs and below target (70%<sup>38</sup> achievement), with half of projects having achieved more than 75% of expected household latrines (Annex 6, Table A6.5). The limited number of household latrines could be attributed to the approaches used in the Bank-funded sanitation interventions in rural and urban areas, and to government priorities for address the challenge of the overall financing gap in the WSS sector; choice of priorities is the responsibility of national governments<sup>39</sup>. The different approaches that are grouped (Annex 6, Table A6.5) based on their primary focus area are as follows:

i. The first group relates to community-based behavior change approaches that create demand for sanitation and hygiene behavior. In this case, the Bank financed only hygiene education and sanitation improvement promotion activities to

support the construction of improved facilities by households. Approaches from this group were used by three of the 11 rural projects (e.g., Zambia National RWSS, and Uganda RWSS and Uganda WSSP). Within these approaches, targets for latrines to be constructed by households were relatively high (e.g., 440,000 and 950,000 latrines for Zambia National RWSS and Uganda RWSS, respectively), while no target was indicated for the Uganda WSSP (Annex 6, Table A6.5). The monitoring of latrines constructed was not done, leading to difficulties in making sound judgments in terms of performance. Similarly, it is difficult to make appropriate judgments in terms of the effectiveness of the community-based change approaches used to support the construction of latrines by households. Access to sanitation is still inadequate, especially for the rural and poor communities.

- ii. The second group relates to financing approaches that use specific financing mechanisms (target hardware subsidies, loan schemes, etc.) to increase uptake of sanitation facilities mainly among unserved or vulnerable populations. In this group, six of the 11 projects were concerned (e.g., Burkina RWSS, Mali RWSS, Ghana RWSS, Senegal RWSS, Rwanda RWSS 1 and 2). This strategic approach is the most frequently used in the RWSS cluster projects. This group achieved 68% of target.
- iii. The third group relates to market-based approaches that develop or strengthen the market and supply chain for sanitation products and services. These approaches were not used in the RWSS cluster projects<sup>40</sup>.
- iv. The fourth group concerns the Bank's rural sanitation interventions that combined two or three of the approaches above. For example, the Mauritania RWSS and Zambia Central Provinces RWSS combined the community-based behavior and financed approaches.

**The RWSS interventions produced substantial outputs in terms of capacity development and awareness campaigns.**

In addition to the construction of facilities, the Bank also provided information, education and communication (IEC), and awareness actions, as well as capacity building for stakeholders. In this regard, about 10% of the WSS project resources were allocated to soft interventions such as capacity development and awareness creation, while 90% were allocated to infrastructure development. The RWSS project cluster exceeded its targets (by 12% on average) in the number of people trained in the management of WSS systems and facilities (around 11,600) and masons (more than 3,000). About 5,300 people and 5,000 communities/clubs were reached through project activities in community awareness raising and sensitization about improved sanitation and hygiene practices.

RWSS Outcomes Achievement

**Overall, the outcome achievement of the RWSS interventions is rated as unsatisfactory.** The RWSS interventions produced positive outcomes in terms of coverage access to improved water sources and improved sanitation. However, the realized outcomes were undermined by the limited functionality of the rural water schemes and insufficient water quality, and by the poor supply of appropriate and reliable sanitation facilities and services, together with the limited ownership, upkeep and management of sanitation facilities and services.

**The Bank's support increased access coverage<sup>41</sup> to improved water sources and reduced the drudgery of fetching water in rural areas.** The RWSS project cluster provided access coverage to improved water sources to an estimated 14 million people (83%) out of a target population of 17 million<sup>42</sup>. Around nine of 15 cluster RWSS projects (60%) met or exceeded their anticipated potential beneficiaries, while 80% of projects met at least 75% of anticipated potential beneficiaries (Annex 6, Table A6.3). In addition, all 16 RWSS

projects, except Zimbabwe, reduced the time required for fetching water for people that effectively use the improved water sources. The time was reduced by 45%, on average, for the Burkina Faso and Rwanda phase 1 projects, by 82 minutes for the Tanzania project, and by more than four hours in the Rwanda phase 2 project. This was in addition to the benefits of avoiding the rugged terrain, which was a major challenge for women and children fetching water.

**Key lesson 7:** Poor service delivery, including the state of facilities and poor water quality, undermines the achievement of development outcomes of RWSS interventions.

**Effective and sustainable access to, and use of, the RWSS water sources had mixed outcomes, mainly because of the limited functionality of the water supply facilities, and the insufficient quality of water.** On average, about one-third of the rural water supply facilities were reported to be non-functional<sup>43</sup> (see also Table A6.9, Annex 6). For example, the Rwanda and Nigeria country case studies reported hand-pump functionality of less than 50%; in Cameroon, the reported functionality was around 75%. In addition, a field survey conducted for the Malawi National Water Development Program and Zambia CPWSS shows that around 32% of the water facilities were not functional at the time of the survey and at least 46% have experienced at least one breakdown since they were constructed (AfDB, 2016e). This level of functionality of rural water facilities was corroborated by the 2017 World Bank WASH Poverty Diagnostic and other studies (Alejandro et al., 2017). For instance, for Nigeria, in 2016, 40% of water points were reportedly non-functional, with many failing in the first year after construction (World Bank, 2017b). Some of the project cluster water-supply systems and facilities were under-used, not functioning or abandoned because of: (i) water points without water or declining groundwater (e.g., Burkina Faso, Tanzania, Senegal, Zambia CRWSS); (ii) facility breakdowns; (iii) high iron content or

salt in the water (e.g., Uganda RWSS<sup>44</sup>, Zambia Central Provinces RWSS, Zambia National RWSS<sup>45</sup>); (iv) inappropriate design (e.g., Ethiopia, Tanzania); and (v) lack of sufficient sunlight when the facility was powered by solar energy (e.g., Burkina Faso). Positive results were found in some Bank-funding projects (e.g., Mauritania RWSS, Tanzania RWSS<sup>46</sup>, Senegal RWSS<sup>47</sup>) in terms of functionality of the facilities.

**Water quality also remained an important challenge.**

Insufficient water quality, i.e., water not meeting the quality standards that had been set, limited the RWSS project performance, for example in Tanzania, Ethiopia, and Zimbabwe (presence of *E. coli* bacteria), and Zambia Central Provinces RWSS and Zambia National RWSS (high levels of iron). It resulted from contamination at the point of use and/or at source, mainly from fecal matter, fertilizers, pesticides, iron, and salts. For Zambia and Malawi for instance, field survey results show that 98% of the water facilities have never been disinfected or chlorinated since construction. Water samples were tested to detect the presence of total *E. coli* bacteria. The test results revealed that water is safe for human drinking in 49% and 28% of the water sources and points of use, respectively, implying that in a majority of cases, the water is unsafe for drinking. (AfDB, 2016e). Furthermore, water quality monitoring was inadequate in some project areas in Chad<sup>48</sup>, Mauritania, Ethiopia, Senegal, Tanzania<sup>49</sup>, Uganda RWSS<sup>50</sup>, and Zambia National RWSS.

**Key lesson 8:** Insufficient human capacity - in both local governments and communities - to manage and operate rural water infrastructure adversely affects service delivery.

Both management and technical issues constrained the outcome performance of the Bank's support for rural water supply. The management of rural water facilities and supply was of insufficient quality. There was over-use and improper use of water facilities, e.g., in Burkina Faso, Burundi<sup>51</sup>, and Tanzania. In addition, the maintenance of water facilities was

found to be poor in Burundi, Chad, Ethiopia<sup>52</sup>, Ghana<sup>53</sup>, Senegal<sup>54</sup>, Uganda RWSS, Zambia Central Provinces RWSS, and Zambia National RWSS. Contributing factors included insufficient human capacity, particularly within local municipalities (Zambia) and failure of the community-based management model in managing and operating the facilities (Burkina Faso, Burundi, Ethiopia, Tanzania, Uganda, Zambia). In Ethiopia, the RWSS Program was effective in building infrastructure, but less so in building community institutional capacity to maintain it (IDEV AfDB, 2016a/b).

The technical constraints mainly relate to inappropriate design and siting of water points, leading to the production of water unfit for human consumption or no water at all.

**Key lesson 9:** Limited financing and performance of the sanitation and hygiene component hampers the achievement of development results of RWSS interventions.

**The RWSS interventions achieved unsatisfactory sanitation and hygiene outcomes.**

Access to the RWSS sanitation facilities and services was modest, as was the adoption of improved sanitation and hygiene practices, according to the project cluster and case-study countries. In terms of access, around 7 million out of the expected 15 million people (46%) were covered by improved sanitation services through the cluster projects. Only three of 13 cluster rural sanitation projects (23%) met their anticipated beneficiaries, while 31% of projects met at least 75% of anticipated beneficiaries (Annex 6, Table A6.3). The country case studies also found access of the population to RWSS sanitation facilities and services to be low, except for Morocco and Rwanda with coverage rates of 77% and 62% in 2015, respectively. Similar claims are also made by the RWSS Initiative's study on Hygiene and Sanitation Education in the Rural Water Supply and Sanitation Operations of the African Development Bank (AfDB, 2012b), and the Impact Evaluation of Zambia and Malawi WSS Projects (AfDB, 2016e). This modest performance was due, to a certain

extent, to the limited accessibility and usability of RWSS sanitation services and facilities, especially the latrines.

Although the RWSS interventions increased the sanitation services and facilities, their availability was considerably reduced over time, mainly because of inadequate facility maintenance and waste management, and/or non-functionality of the facility. For example, some of the latrines were inappropriate for the needs of the beneficiaries, of poor quality and/or not functioning (Burundi, Chad, Tanzania, Senegal, Zambia RWSS<sup>55</sup>, and Mauritania). The inappropriate use and ineffective management of some of the latrines also rendered them inaccessible, thereby leading to the re-emergence of open defecation. This was the case of the RWSS latrines in Chad, 85% of which were not functional for want of proper hygiene. In effect, improper hygiene kept the latrines out of use.

**The adoption of the expected hygiene and sanitation behaviors/practices among project cluster beneficiaries was limited.** The RWSS project cluster made only modest progress in:

- i. **Minimizing open defecation.** Three RWSS projects (in Burkina Faso, Ghana and Senegal) reported improvements in reducing open defecation but the practice was still common in the project areas, especially in Chad, Ethiopia, Tanzania and Zimbabwe. For instance, Ethiopia RWSS impact evaluation (AfDB, 2016a) found that the program contributed little to the decrease of open defecation - 91% of households that did not own latrines continued the practice.
- ii. **Improving hand-washing.** Hand-washing practices were reported in three projects (Ethiopia, Mauritania, and Rwanda PNEAR II) with the use of soap in the case of Mauritania. These practices were insufficiently developed in other projects (Burkina Faso, Tanzania, Chad, Uganda, Rwanda PNEAR I, Zambia Central Provinces RWSS).

- iii. **Ensuring the safe storage of water.** When described, this practice was found to be adequate across six projects (Burkina Faso, Ethiopia, Senegal, Mauritania, Zimbabwe) but not for the rest of the projects. Unsafe storage of water within households remained a significant challenge in Tanzania according to the Tanzania project impact evaluation study (AfDB, 2016b). This was also the case in Uganda, where the beneficiaries drank untreated water that they perceived to be safe.

The performance of the RWSS sanitation and hygiene interventions was limited by multiple inadequacies, including:

- i. **Supply of facilities and services.** As already highlighted above, the effective supply of RWSS sanitation and hygiene facilities and services was significantly below the desired targets.
- ii. **Participatory methods for fostering behavioral change among project beneficiaries.** The RWSS participatory methods (e.g., SARAR/ PHAST and Community-Led Total Sanitation<sup>56</sup>) were not as effective as desired in fostering the desired behavior change to sustain good sanitation and hygiene practices. According to a Bank study (AfDB, 2012b), “despite the application of participatory methods, coupled with social mobilization and sensitization on the use and maintenance of infrastructure, ownership by beneficiaries in rural populations is often low when it concerns sanitation and hygiene issues”.
- iii. **Ownership, upkeep and management of the facilities and services.** This was a common challenge among the community facilities, including those that were school-based. The poor sanitary and hygiene state of some posed a health hazard, and sometimes led to their abandonment and the re-emergence of open defecation.

**iv. Incentive system for appropriate behavioral change.** Supporting communities to build appropriate incentives was not a focus of the RWSS interventions. According to the evaluation of the Bank's implementation of the IWRM strategy (AfDB, 2013a), the Bank's water operations contributed modestly to institutional capacity building in RMCs, as they focused overly on project management-level capacity.

### ***AWM Effectiveness***

In terms of the broader African context for AWM, it is important to note that the value-added of the agriculture sector, as a percent of GDP, declined in eight of the 10 case-study countries over the period 2002-15, for example, in Nigeria from 49% to 21%, and in Zambia by 9% points over the same period. In Kenya and Mali, however, the agriculture sector's share of GDP increased over the period<sup>57</sup>. It is important to bear in mind that water was only one of several factors contributing to the performance of the agriculture sector over the period.

### *AWM Outputs Achievement*

**The AWM interventions achieved moderate outputs.** The overall project cluster delivered 68% of the target outputs (including rural infrastructure such as feeder roads, wells, toilets, storage and drying facilities, rural market, etc.). The highest AWM output delivery rate was around 80% for the Gambia Farmer Managed Rice Irrigation, Kenya Green Zones and Rwanda Bugesera Agricultural Development (PADAB) projects. The lowest delivery rate of about 51% was associated with the Madagascar Manombo Irrigation Area Rehabilitation and Kenya Kimira Oluch (KOSFIP) projects. The main physical outputs for AWM project clusters comprised: (i) land development (irrigation schemes<sup>58</sup>, drainage and flood control, and water conservation and storage facilities); and (ii) rural infrastructure including social structures and facilities to enhance market opportunities and producer well-being<sup>59</sup>. The essential storage and irrigation canal facilities were supplemented with

credit, marketing, transport, fertilizer, seed supply and similar services to enhance farm productivity and production. The AWM project cluster mainly used three irrigation and drainage technologies: (i) gravity-fed irrigation technology (Kenya KOSFIP and Rwanda LISP); (ii) tidal irrigation (Gambia); and (iii) electricity-powered technology (Rwanda PADAB). None of the AWM projects cluster used solar-powered irrigation systems, considered as good practice.

The overall AWM output level was adversely affected by incomplete land development components (46% of target achieved). For example, in Madagascar and Kenya, the major civil works (main canal/intake, dam rehabilitation, etc.) were constructed, but the secondary and tertiary canals - necessary for better and more efficient access by farmers to water - were incomplete. In the case of Rwanda LISP, only one of the 72 livestock watering systems planned for the Eastern Province site was fully developed and operationalized in Nyagatare District<sup>60</sup>. From the focus group discussions on the Kenya KOSFIP, most sections of the project's tertiary canals were incomplete and not connected to water due to delays in paying contractors. The AWM Nigeria project failed to deliver the rural market structure, one of the critical pathway components for the achievement of the project development objectives.

Additional limits to the delivery of the AWM outputs comprise: (i) financial constraints (Kenya KOSFIP<sup>61</sup>, Madagascar); and (ii) changes in technology choices and site selection to address design shortcomings (Gambia, Rwanda PADAB, Madagascar, Nigeria). Furthermore, corrective actions to address off-track indicators were not always implemented in a timely manner to ensure that the expected outputs were delivered in compliance with good quality standards.

### *AWM Outcomes Achievement*

**The AWM interventions produced unsatisfactory outcomes in terms of improved access to water for irrigation, and increased agricultural production and productivity.** This conclusion is

**Box 7:** Kenya Green Zones Project - A sustainable strategy of mitigating the negative impact of climate change on water availability

The Kenya Green Zones Project sought to promote the conservation of water towers, either directly through forest rehabilitation and participatory forest management, or indirectly through promoting alternative livelihoods that would reduce overreliance on forest-based activities.

The project has led to an increase in forest cover in the five water towers (target areas). Forest regeneration is evident in the Sururu/Likia and Logoman forest blocks of Mau, Gathioro, Kabaru, Kakamega, Penon and Njukiri forests. While there was no indicator to measure water resource conservation through forest regeneration, direct observation in the field found evidence of the recharging of the water. For instance, the Kathithi catchment area had previously dried up but now has more water, allowing it to be used for micro irrigation.

**Source:** Kenya AWM PERs and field visit

similar to that of previous AfDB evaluations (AfDB, 2011a; AfDB, 2013a p15). Although the AWM projects (with the exception of Nigeria<sup>62</sup> and the Kenya Green Zones<sup>63</sup>) improved access to water for domestic and farm use, the improvement was insufficient to be rated satisfactory. The AWM projects reduced the drudgery of fetching water for both domestic and farm use, enabled access to water for agriculture, and an increase in protected and developed land for agricultural activities (Annex 6, Table A6.8). None of the AWM projects aiming to increase access to water for agriculture reached its target. Only 35% of the AWM projects' target number of smallholder farmers gained access to water for irrigation or livestock. With the exception of Mali, the irrigated hectares developed were around 66% of the overall target.

**Limited increase in production and productivity.** The AWM projects increased agricultural production and productivity in terms of agricultural crop diversification, which were also associated with increased income generation of project beneficiaries. These improvements in crop production and productivity fell (far) short of the pre-determined targets.

Regarding water resource and environmental management, one of the nine AWM projects produced **satisfactory outcomes**.

The Kenya Green Zones was a good example of using reforestation to mitigate the negative impact of climate change (Box 7). The project contributed to reduced forest degradation and increased afforestation, enhanced community participation,

strengthened community ownership, and enhanced livelihoods. However, the expected increase in fruit tree plantation was not realized. Tree plantation was common in the Kenya KOSPIF, Mali, Nigeria, Rwanda PADAB and Senegal projects.

The limited AWM outcome achievement was mainly due to the following reasons:

- i. The moderate level of AWM outputs, including insufficient development of irrigation tertiary canals, limited irrigated/developed farm areas, and inadequate complementary inputs such as fertilizer and improved seed and plant.
- ii. Inadequate capacity of water-users' associations (WUAs) to optimally manage water for irrigation. This was mainly due to: (i) lack of a proper financial base to effectively engage in the basic operation and management of the scheme (Kenya KOSFIP, Rwanda PADEB<sup>64</sup>, Gambia, Senegal); and (ii) disorganized and inefficient WUAs (Madagascar, Rwanda LISP) and farmers' associations (Gambia). In Gambia, for instance, the Rice Farmers' Cooperative Society, which was the main conduit of services to farmers, was not effective and efficient in managing the service charges (land preparation, milling) and the revolving loans<sup>65</sup>. For Rwanda LISP, the failure of the WUA to maintain and repair the water infrastructure led the Ministry of Agriculture to hand over the management of the infrastructure to Nyagatare District and the Water and Sanitation Corporation. In addition, poor service provision and the lack of effective management



led some farmers to take irrigation matters into their own hands to increase and better control their water supplies (Madagascar, Kenya KOSFIP, Gambia). For example, in Madagascar a new water management organization emerged that destabilized the system to the point that users were claiming ownership of, and demanding quotas for, access to water points. This was contrary to the project's strategy of achieving the intended outcome of improving access to water.

### ***Factors hindering or enabling the water sector performance results***

Apart from the broader factors discussed in the next section of this report, analysis across the cases highlighted country context factors as hindering or enabling the water sector results, especially at the outcome level. Internal and external factors along the different phases of the project cycle are presented in Annex 6 Table A6.2. Some key findings from this table highlight that preparatory studies are needed to design each project and, while needs assessments are a government responsibility, the required resources and skills are distributed unequally across countries. In this respect, the Bank's support provided to governments for preparatory studies is vital, but not always directly associated with government capacities and resources. These challenges and the strategies to mitigate limited government capacities have been extensively described by the Economic Commission for Africa (ECA, 2003). Limited capacities within NGOs and the private sector could equally compromise outcome achievement, as identified by water specialists and confirmed by country case studies.

### ***Unintended Impacts***

**The water interventions also generated positive and negative unintended consequences.** The most often cited unintended positive consequences of RWSS projects were the effect on local economic development (Burkina Faso) and community

mobilization (Senegal, Zambia, Mali). The positive consequence of AWM projects was the introduction of electrification, which stimulated local economic development either by facilitating village access to resources or by generating income through diversification of business opportunities (Rwanda PADAB, Mali). Innovative approaches to small-scale irrigation schemes also emerged in Rwanda.

The water interventions also had unintended negative effects. The Mali, Nigeria and Senegal country case studies reported human health hazards from the contamination of potable water lines resulting from inadequate use and poor maintenance of sanitation facilities, and bad hygiene practices. This effect was also associated with projects for the delivery of school latrines, with the latrines becoming unhygienic and eventually being abandoned. Some of the project water boreholes/sources fell victim to vandalism, and others became a source of conflict between communities. In the case of the Comoros, community water conflict was reported in the case of the failure of the project to include one of the communities in close proximity to the water source. Another source of water conflict was the use of the water points for crop production and cattle husbandry.

The effectiveness ratings are summarized as follows:

Assessment criteria	Rating
Extent to which the Bank contributed to the achievement of high-level objectives.	<b>Unsatisfactory</b>
Extent to which the water interventions (Combined WSS and AWM) outputs have been achieved.	<b>Satisfactory</b>
Extent to which the water interventions (Combined WSS and AWM) outcomes have been achieved.	<b>Unsatisfactory</b>
■ Extent to which UWSS water outcomes have been achieved	Satisfactory
■ Extent to which UWSS sanitation outcomes have been achieved	Unsatisfactory
■ Extent to which RWSS water outcomes have been achieved	Unsatisfactory
■ Extent to which RWSS sanitation outcomes have been achieved	Unsatisfactory
■ Extent to which AWM interventions' outcomes have been achieved	Unsatisfactory
<b>Effectiveness</b>	<b>Unsatisfactory</b>

## Efficiency

*The efficiency of the Bank's project support to the water sector was assessed along three dimensions: economic performance, financial performance and timeliness. Projects examined as part of the PERs were found to be viable economically, but not financially. Moreover, they experienced significant delays and procurement challenges. Therefore, efficiency was found to be unsatisfactory.*

**Projects are economically viable.** The evaluation found that there was extensive use of economic internal rates of return (EIRR) to measure the economic viability of water projects, more so in the case of AWM than WSS projects. Evidence from the Water Sector Portfolio Review showed an increasing use of rates of return to measure the financial and economic viability of WSS projects, from 52% of projects using such rates between 2005 and 2010, to 77% between 2011 and 2016. Almost all AWM projects (97%) were found to be using such rate-of-return calculations between 2011 and 2016. The cluster project analysis confirmed that the use of EIRR was a common practice (Annex 6, Table A6.10). All projects for which EIRR are available, except Mauritius, have an EIRR higher than the opportunity cost of capital, at 10% to 12%. **Based on post-completion EIRRs, the economic performance is thus rated as satisfactory.**

EIRR calculations appear to have been applied with varying levels of rigor across PARs and PERs. Therefore, the interpretation of results of a cost-benefit analysis undertaken at various project stages should be considered with caution due to, among other things, insufficient data and the use of unrealistic assumptions and risks (e.g., over-/under-estimation of costs and benefits).

**Financial performance was unsatisfactory.** With regard to the financial internal rate of return (FIRR), of 13 out of the 36 projects for which it was calculated, only six projects presented the required weighted average cost of capital for comparison

(Annex 6, Table A6.11). Lack of data limited sound analysis of the projects' financial internal rate of return. This is corroborated by IDEV's evaluation, which recognized that neither the Bank nor RMCs had databases that could be used to compute meaningful statistics on value for money (AfDB, 2014). Sanitation and rural water are generally not intrinsically financially profitable. This is why the majority of countries have equalization mechanisms between subsectors (water and sanitation) and between environments (urban and rural).

The financial performance is rated as unsatisfactory mainly due to low revenue generation relative to investment and operating costs. In the country case studies, it was indicated that the poor revenue-generating capacity of the service provider compromised the operational quality of the system and its maintenance. Poor upkeep of the system further resulted in clients' disinterest in paying for services. Revenues were generated through a tariff system and this system was problematic in each of the RMCs included in the case study, although variations occurred both within and between RMCs. The ability to optimize operating costs, commercialize water to improve revenue, limit the non-revenue water losses, and operate within a sufficient margin to ensure profitability and financing of current/future operations/maintenance are all significant concerns.

**Water projects experienced significant delays and procurement challenges. Projects suffered substantial time overruns** (Table 3). The average project age (from approval to completion) was 83 months (around 7 years), equivalent to an average delay of 23 months relative to the planned duration at appraisal. The project age ranged from 49 months for Zimbabwe's urgent WSS rehabilitation and Ghana Improved Sanitation and Water Supply Services to 141 months (11 years and 9 months) for the Zambia National RWSS Program. Delays in implementation did not significantly vary across the three subsectors, even if they appear relatively higher on average for RWSS.



**Table 3:** Average project duration (months)

	Approval to Signature [ M ]	Signature to Effective [ M ]	Effective to First Disbursement [ M ]	First Disbursement to Completion [ M ]	Approval to First Disbursement [ M ]	Approval to Completion [ M ]
Urban Water Supply and Sanitation (N=16)	3	9	9	63	20	83
Rural Water Supply and Sanitation (N=15)	4	5	6	73	13	87
Agricultural Water Management (N=9)	2	5	10	74	16	90
<b>All Water Sector (N=40)</b>	<b>3</b>	<b>6</b>	<b>8</b>	<b>70</b>	<b>17</b>	<b>83</b>

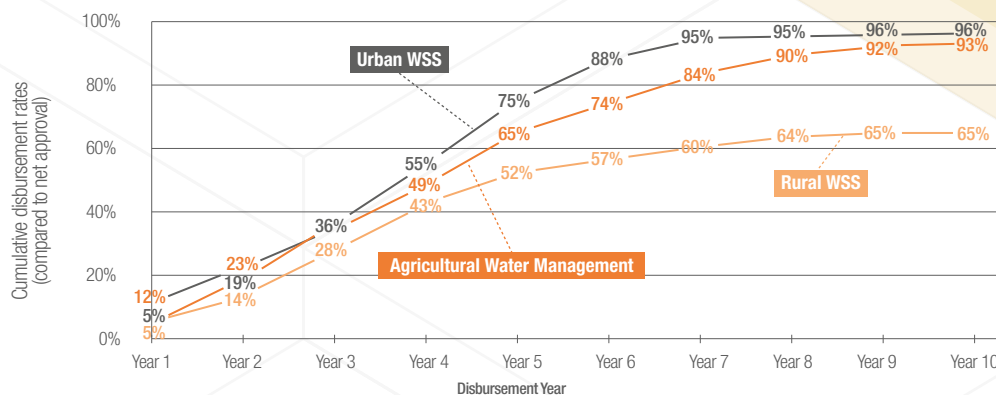
**Challenges in procurement processes** were raised in all the 10 country case studies and in nearly half of the project-level evaluations. The most common complaint among government partners and project implementation organizations was that these processes were too slow, cumbersome or bureaucratic. The efficiency of Bank operations and projects was perceived, across many stakeholders in various countries, to have improved following the opening of country field offices.

In addition, challenges and opportunities around the use of RMCs' systems for procurement were widely raised by case-study interviewees. In countries where the Bank had successfully transitioned to the use of national systems in at least some aspects of procurement practices (Uganda, Morocco, Senegal), this was seen by governments and development partners as a positive step toward improving efficiency and building RMC capacity. Where the Bank had not yet transitioned to using government systems (Mozambique), this was perceived as adding an additional administrative burden onto already overworked government staff and causing bottlenecks in project execution.

Two additional mechanisms were raised by case-study interviewees as having improved procurement processes: (i) an authorized anticipated acquisitions approach; and (ii) the establishment of a group of stakeholders for managing procurement processes. The former, highlighted by stakeholders in Cameroon and Senegal, enables projects to acquire supplies before the loan is in place, leading to faster

project start-up. The second mechanism, also in Cameroon, involved the establishment of a group of stakeholders responsible for managing procurement processes. This group included members of the project supervisory agency, contractors, a representative from the responsible implementation ministry and the Bank's procurement officer. This group managed to reduce the procurement process elapsed time from 6 months to just 1 month.

At the project level, **delays in disbursements** were the most widely cited barrier to efficiency in the country case studies. This is corroborated by data on disbursement rates (see Annex 6, Table A6.12 on disbursement profiles). Low technical and financial capacity of the implementing partners were among the most commonly cited reasons for these delays, including the inability of a government to follow through on its counterpart funding commitments. Underperformance of contracted service providers, failure to meet loan conditions, and changes in the government or project implementation unit were also causes of disbursement delays. Such delays and their causes were also often highlighted in the PERs, which frequently identified changes in the project design and scope as barriers. From the country case studies, the use of project implementation units, with competent staff, was largely seen to improve project efficiency. Interviewees emphasized that this was not the preferred means of implementing project activities, since it failed to build capacity in a sustainable manner. RWSS projects had lower disbursement rates (Figure 6).

**Figure 6:** More disbursement challenges for RWSS projects

In general, WSS and agriculture and rural development interventions tend to have lower start-up disbursement rates (with less than 35% disbursed 3 years after the first disbursement) compared with other sectors. Within 1 year of the first disbursement, respectively, 63%, 65% and 40% of finance, multi-sector and social projects were disbursed (see Annex 6 Table A6.12).

Efficiency ratings are summarized as follows:

Assessment criteria	Rating
Economic performance (EIRR)	Satisfactory
Financial performance (FIRR)	Unsatisfactory
Timeliness	Unsatisfactory
Efficiency	Unsatisfactory

## Sustainability

*The evaluation examined four aspects of sustainability: technical soundness, financial sustainability, institution and capacity strengthening, and beneficiary ownership and participation in maintenance. Although performance was positive on the technical soundness and beneficiary ownership dimensions, this was outweighed by the substantial deficiencies in the financial and institutional aspects. The greatest area of concern was financial sustainability. In addition, institutional and capacity*

*strengthening, together with technical soundness, were issues in the case of sanitation. Technological appropriateness and maintenance costs were also challenging. Overall, the sustainability of the achievements of the water sector interventions was judged to be unlikely.*

### Technical Soundness

*Technology Choices for Sustainability*<sup>66</sup>

**Key lesson 10:** Critical sanitation technology choices should be scrutinized carefully, if they have to deliver sustained results.

Projects across all subsectors were generally strong in terms of using cutting-edge technologies, although some were less appropriate to the local context. The Bank's water components, including urban water, rural water and agricultural water, were assessed as satisfactory in terms of quality of the technologies used (advanced technologies), but they were not always appropriate for the local context. Eleven of the 15 urban water supply projects provided good technical designs and advanced technology for sustaining project benefits. The technical soundness of the sanitation component of WSS projects was unsatisfactory. For instance, the use of biological treatment plants in Senegal did not fit the local

conditions (high cost of energy and limited space availability). Moreover, notwithstanding a modest improvement in the number of latrines, some of the project latrines were inappropriate for the needs of beneficiaries, or of poor quality (Burundi, Tanzania, Mauritania). Handwashing facilities were also found to be inadequate (Senegal, Tanzania, Chad, Zambia Central Province RWSS, Uganda).

Despite an overall positive picture regarding technical soundness for water supply interventions, the evaluation did highlight important issues to bear in mind for future technical design:

- i. Rural cases in Gambia, Uganda and Senegal highlighted the usefulness of renewable energy (including the use of solar and tidal power) to ensure affordability over the medium term. In contrast, the use of diesel generators for powering electric pumps (Tanzania) highlighted both the limited operational life of these generators and the high recurrent costs for users.
- ii. Sustainability of equipment was also an issue where water pump choice failed to take into account the local pH level or iron content of the water source (Uganda, Zambia).
- iii. For AWM in Rwanda, the cost of electricity was a factor that affected the sustainability of some parts of the scheme that required pumping, as dams and gravity schemes could not be applied there.
- iv. For UWSS, complicated designs, advanced technology, and the low availability of expertise and spare-parts undermined sustainability in the cases of Ethiopia, Mauritius and Senegal.

**Inappropriate sanitation infrastructure.** In RWSS projects, sanitation infrastructure was characterized by inadequate technical project design. Sustainability of both household and public latrines was limited, mainly due to inappropriate project design, which relied on waste removal

services that were non-existent in rural areas. Despite the availability of land in rural areas, the rebuilding and relocation of family latrines was not considered to be a component of the project design. For example, in Burkina Faso, although families had invested in household toilets they were not informed that their investments were for a limited time (5 to 7 years), after which they would have to reinvest for the relocation and reconstruction of new latrines. In Ghana, families benefiting from sanitation support had made no plans for desludging.

**Inadequate attention to hygiene issues in sanitation infrastructure.** Project designs did not adequately take into account hygiene considerations due in part to inappropriate choice of technology. As a result, a number of project sanitation facilities were misused leading to their partial use or abandonment, thus undermining the sustainability of their benefits. Maintenance was also challenged because of the technical inappropriateness of the project latrines. In projects in Burkina Faso, Burundi, Ethiopia, Senegal, Tanzania, Chad, Uganda and Zambia, school latrines were not maintained, and hygiene practices were inadequate. In Chad, 85% of the public latrines provided by the project in schools and health centers of the Tandjili and Mayo Kebbi regions were no longer used due to lack of maintenance. One positive exception was in Mauritania, where families participated in selecting and building latrines that were appropriate and in line with their financial capacity. Country case studies confirmed that beneficiaries tended to contribute toward sustaining sanitation facilities where they had been included in the design of the project and had sufficient know-how.

*Procurement of Appropriate Equipment and Spare-Parts*

**Procurement of appropriate equipment and spare-parts remained a challenge in the water sector.** Procurement of appropriate equipment and spare-parts needed to maintain capital assets (e.g., pumps, motors, pipes, etc.), and to address water

infrastructure challenges was not always explicitly addressed in PARs. Although data were often not available, interviews with stakeholders revealed that procurement of appropriate and quality equipment and spare-parts appeared to remain challenging. In Ghana, a spare-parts distribution network for hand pumps was established at the regional level to ensure their availability. The evaluation found that it was not readily available to address breakdowns in a timely manner, contributing to a high percentage of non-functional water point systems. In Rwanda, the availability of spare-parts was a problem mainly with regard to water-pumping systems managed by cooperatives. In Zimbabwe, there was a replacement policy for “various gadgets and equipment”. This policy was no longer in operation due to economic challenges.

Similarly, the AWM projects were challenged by the accessibility of relevant spare-parts. In both Rwanda projects (LISP and PADAB), spare-parts were found in local markets or workshop facilities. Meanwhile, in the Gambia, machinery services and input provisions were no longer feasible, and machines became dysfunctional due to lack of maintenance and spare-parts by the Rice Farmers' Cooperative Society. In Nigeria, frequent breakdowns of tractors were reported, and repairs were not completed due to lack of an agent specific for the tractors in use.

#### *Capacity for Governing the New Water Infrastructure*

**Insufficient human capacity - in both local government and communities - to govern the maintenance of water infrastructure was found to be an important risk for the sustainability of water projects benefits.**

- **On the government side**, while there are some exceptions (county-level in Kenya and in some provinces in Nigeria), human resources were lacking, both in quantity and quality, across almost all RMCs at the decentralized level, within districts and municipalities. Projects across the three subsectors also demonstrated the importance of strong institutional

frameworks, with competent and connected implementing groups across all levels of government. In this respect, the integration of a project's implementation or coordination unit with the executing ministries contributed to its institutionalization.

- **Among communities**, insufficient organizational and management capacities within water-user groups/associations mandated to maintain the operation of the water system limited the likelihood of the sustainability of projects. For example, in Burundi, water-user groups had insufficient means for maintenance due to their limited technical and financial capacity. In Ethiopia, although the project enhanced the capacity of the Water, Sanitation and Hygiene Committees, they remained organizationally, technically and financially too weak to carry out their responsibilities effectively. Capacity in the water-users' association in Kenya and the farmers' association in Gambia were both described as being insufficient. The majority of social infrastructure management committees became non-functional in Mali. In Gambia, weak capacities and political interference caused the availability of funds to provide machinery services and input provisions to become increasingly reduced once project implementation ended. The water-users' associations were also described as being disorganized and with poor management capacity in Madagascar. In this case, a consulting firm was engaged to address the deficiencies in water-system management and improve institutional functionality.

- **Private sector parties** have assumed an increasingly important role in water infrastructure operations and maintenance. For water supply, experience from the projects indicates that sustainability was more favorable with the delegation of management of rural community infrastructure (or mini-networks) to a competent private operator, and the management of hand-pumps to a water-users' association that was contracted by the municipality. The

evaluation found little evidence of the benefits of private sector involvement in sanitation.

### **Financial Sustainability**

**The financial sustainability of the WSS interventions was weak.** Financial viability was the greatest threat to the sustainability of WSS infrastructure, as revealed by the country cases studies, and policy and literature review. This was described in terms of insufficient revenue-generating capacity of service providers, which compromised the operational quality of systems and their maintenance. The poor maintenance of systems and a lack of service standards resulted in a low level of willingness among clients to pay for the services. This was corroborated by PERs, which found UWSS project financial viability to be unsatisfactory from the perspective of utilities, mainly due to low revenue generation relative to the high investment and operating costs, as well as a high level of non-revenue water.

**None of the countries examined established the means to ensure the financial viability of the whole WSS system.** However, four RMCs used creative means to ensure the financial viability of water supply systems:

- Water collection schemes based on a pay-as-you-fetch approach implemented in Ghana and Mauritania helped ensure the financial viability of the supply system.
- In Rwanda, the private sector runs water points and infrastructure that ensure the sustainability of the systems. The profits of the operator depend on the amounts collected, thereby encouraging the efficient and sustainable operation of the systems.
- The water-users' association in Senegal is profitable, with the population contributing toward the maintenance of the water system through the payment of fees.

**Key lesson 11:** Improving the performance of UWSS utilities as a whole is critical for the water sector, if it is to maintain the equalization mechanisms between subsectors (water and sanitation) and between areas (urban and rural).

**Weak financial viability of the UWSS utilities.** UWSS utilities generally underperformed, even if there were some relatively well-performing utilities (Morocco). The challenges limiting the financial viability of UWSS projects include mismanagement, poor coordination, a lack of cost-sharing arrangements, non-revenue water, the failure to collect debts, high operating costs, a lack of staff, low human capacity, poor logistics, and incomplete metering installation. Sustained government subsidies were required in all countries for the continued functioning of WSS utilities.

**Key lesson 12:** Cost recovery remains a key issue that must be strategically and systematically assessed to ensure that an intervention will be financially viable. This becomes all the more relevant with the negative impacts from climate change on water resource availability.

**Sanitation projects suffer from chronic economic and financial problems.** All sanitation projects and those with sanitation components suffered from a lack of appropriate and affordable wastewater tariffs and collection procedures. The responsible agencies were seriously impaired by a lack of technical and managerial capacity in producing and commercializing by-products. Furthermore, they were challenged by the absence of appropriate legislative reforms to regulate tariffs for wastewater collection and the sale of by-products. Such reforms are needed to establish the organizational structure of sanitation services, private sector participation and cost-sharing mechanisms, and also to facilitate the effective implementation of a 'polluter pays' principle.

**Four out of nine AWM projects (Kenya KOSFIP, Kenya Green Zones, Nigeria and Rwanda PADAB)**



**established the means to ensure financial viability of implemented infrastructure.** Rwanda PADAB was considered financially viable. There was almost a complete recovery of water fees, and technical and financial capacity to sustain the gravity feed system. In Mali, the infrastructure costs were also expected to be covered. In other cases, financial viability was a concern. In Nigeria, farmers' groups were charging membership and user fees for all joint group facilities. There were outstanding unpaid loans. There was no clearly defined exit strategy to ensure that farmers and farmers' groups could gradually stand on their own. In Gambia, financial management by the farmers' cooperative society was not sufficient and the services could not be continued. In Madagascar, financial independence was poorly planned, and users refused to pay user fees. In Senegal, the means were assessed as insufficient for the full maintenance of facilities, as local collections were not managed effectively and there was a lack of users' contributions.

**Challenges to long-term financial viability of the water sector remain.** Achieving financial viability of water-supply infrastructure is challenged by the capacity of utility companies to: (i) expand/bill customers (or reduce the number of non-tariff water users); (ii) reduce water leakage; and (iii) collect current and outstanding bills (AfDB, 2015). The IWRM policy suggests that an economic dimension should be used to signal and motivate efficient use and allocation of water. Weak capacity giving rise to low cost-recovery and poor governance, as well as the willingness and ability to pay for services, threaten the successful implementation of this, or any, comprehensive framework aiming to achieve the financial viability and sustainability of water projects (AfDB, 2000).

### *Institutional and Capacity Strengthening<sup>67</sup>*

**Responding to the need for technical support, projects provided capacity building and ensured the connections between relevant**

**groups. This strategy was not effective, nor sufficient to guarantee sustainability.** Findings across all lines of evidence suggest that while capacity development was often an integral component of the Bank's water sector projects, capacity development was limited in sustaining and enhancing the required capacity. The country case studies highlighted RMCs' weak institutional memory, compounded by high government/utility staff turnover. Evidence also indicates that countries with stronger systems were better equipped to make use of capacity support, compared to RMCs with weak governance and high staff turnover.

**Results from the Bank's capacity-building activities in its water sector programs, such as one-off workshops and mentoring over time (AfDB, 2015), have been mixed.** The building up of sustainable technical skills was based upon the various RMC entities or groups having an interest in improving the systems, as well as the presence of policy and legal frameworks. For example, in addition to directly building institutional capacity to support farmers' groups, a sustainable social-infrastructure approach was used in Kenya by legally institutionalizing associations, such as the community forest associations. Results from Madagascar demonstrate the limitations of water policy and law where there are still critical coordination issues. Key entities including the users' groups/associations, decentralized authorities and the central government were not well coordinated.

**In addition to ensuring that expertise is present and will remain available, mechanisms are required to link this expertise to projects' emerging needs.** This was the aim in the Kenya Green Zones AWM project, with the provision of technical support to beneficiaries from relevant line ministries. Some success was achieved in this respect by implementing the project through existing government institutions, building institutional capacity and staff training. A similar approach was taken in the AWM project in Nigeria, where local government councils became better able to perform project coordination roles for

future development projects. The seven other AWM projects examined unfortunately lacked such mechanisms, which hampered their sustainability.

**Some cases of strong institutional frameworks, followed by competent and connected implementing groups, in RWSS projects were found.** In Rwanda, districts assumed an active role in planning, developing, implementing and monitoring water and sanitation service delivery. They were involved in the creation of the water-users' association (i.e., WASAC) mandated to implement the project. Mauritania has a national office uniquely focused on rural water and the integration of the project's implementing or coordinating unit into the executing ministries helped to institutionalize the project. However, these good practices remain exceptions.

**The strength of the institutional frameworks and coordinating mechanisms also varied within the same RMC.** For example, in the RWSS project in Ghana, the Bank was successful in strengthening institutions through capacity building and various types of technical assistance. But it neglected the critical capacity challenges that were present in the District Assemblies (DAs), thus negatively affecting the sustainability of project results. The Rwanda LISP project illustrated strong institutional capacity in both the public and private sectors, with strong coordination at both central and local levels. The project evolved in a politically and economically decentralized system that attributed roles and responsibilities to local officials for project planning and implementation. This coordination in infrastructure management was described as providing the conditions needed for sustaining the project results. However, the conditions in Rwanda's PADAB project were less favorable and the likelihood of sustainability was uncertain. Cooperatives became non-functional after the closure of project activities, and the country system and capacities were said to be weak. Project activities were subsequently described as having been transferred to the Rwanda Development Board and the irrigation task force, which were continuing to maintain project benefits.

**Capacity for the institutional sustainability of UWSS projects varied.** Ten of the 15 projects ensured the effectiveness of the relevant institutions at ex-post assessment. The projects provided capacity building, logistical support and technical assistance that improved the capacity of operational and managerial skills of the involved institutions and staff. In these 10 projects, institutional sustainability was strong, as the roles of the key project stakeholders were well defined and coordinated. Decentralization of services, operations and management was a key success factor in Morocco, Ethiopia, and Tanzania. Moreover, the relevant stakeholders operated vocational training for technicians and managers in various aspects of the WSS business. Weak financial and human capacity for planning, operating and management created challenges in the remaining five projects. Coordination and cooperation among the stakeholders remained challenging in those five other projects, namely Senegal, Mozambique 1 and 2, Mauritania, and the Comoros. Political pressure and improper institutional arrangements also had an adverse impact on sustainability. The focal-point mechanism did not work well because of political interference, especially in the Comoros.

### ***Beneficiary Ownership and Participation in Maintenance***

**In 75% of cases, water sector projects created the conditions to build a sense of ownership among beneficiaries.** Evidence is insufficient to assess the extent to which this sense of ownership was, or will be, maintained over time.

Roles attributed to beneficiaries varied across projects, as did the success of training and capacity building, including for maintenance. Where beneficiaries were responsible for the maintenance of machinery or equipment as part of an organized group, such as the Woreda Water Supply and Sanitation Team in Ethiopia, with technical capacities gained or advanced by training provided in the context of the water project, their contribution

was promising. When beneficiaries were local artisans or masons, results were less favorable where they did not possess the appropriate skills, as noted in Mauritania and Senegal. In some cases, beneficiaries completed maintenance of family or institutional latrines, including the emptying of waste. In Mauritania, where beneficiaries were directly implicated in financing and building their family latrines, they assumed an active role in maintaining these facilities. Meanwhile, in Senegal almost two-thirds of the beneficiaries who participated in the household survey completed regular maintenance and one-half ensured the removal of waste. Other beneficiaries were not able or interested in assuming this role. As a result, when hygiene committees were created, they tended to become dysfunctional after program implementation had ceased.

**The AWM projects also promoted ownership by inviting beneficiaries to manage their own project activities through their own institutional structures.** In Kenya, Madagascar and Rwanda, beneficiaries and local officials were involved in the design and implementation of projects, either directly or through their representative organizations and associations. In addition, the use of local services fostered connectivity between beneficiaries and service providers to reinforce a sense of ownership.

**Projects mobilized community ownership by integrating a broad stakeholder approach from project conceptualization to implementation**

(Kenya Green Zones, Mauritania WSS). This was also the case in the Rwanda projects, which effectively involved both national and local stakeholders, and promoted a sense of ownership among beneficiaries, including farmers and local officials at the district and sector levels (Box 8).

**Effective UWSS stakeholder ownership and partnership.** All the UWSS projects promoted effective ownership and partnership through the participation of the relevant stakeholders at the national, regional and district levels regarding the sources of water, technology choice and service prices. Establishing water users' associations (WUAs) and water boards (WBs) played an important role in beneficiaries' ownership and their willingness to pay for services. Affordable tariffs and the reliability of services promoted a willingness to pay for the services provided among beneficiaries. Coordination among the relevant stakeholders was not effective in Ghana, Kenya, Congo and stakeholders remain challenging in Ethiopia, Senegal, Kenya and Cameroon.

The sustainability ratings are summarized as follows:

Assessment criteria	Rating
Technical soundness	Satisfactory
Financial sustainability	Unsatisfactory
Institutional and capacity strengthening	Unsatisfactory
Beneficiary ownership and participation in maintenance	Satisfactory
<b>Sustainability</b>	<b>Unsatisfactory</b>

**Box 8:** Example of a success story of a users' organization in charge of water infrastructure maintenance

The Bugesera Agricultural Development Support Project has put in place mechanisms that can ensure sustainability of the project intervention outcomes, namely the water users' organization. This organization is in charge of water infrastructure maintenance and the irrigation canals passing through Umuganda. Water fees are charged and paid regularly by marshland beneficiaries, while a contract has been signed between the Ministry of Agriculture and a private operator regarding the maintenance and management of the irrigation infrastructure put in place. The Rwanda Agricultural Board and the Energy Utility Corporation Limited have been recommended to review electricity tariffs, especially the power used as inputs for irrigation. The water users' organization has demonstrated its financial capacity by purchasing a transformer and operator to maintain power stability.

**Source:** Rwanda AWM PER

## Cross-cutting Issues

### *Inclusive Access*

**The extent to which beneficiaries have equitable access to outcomes was addressed in about half of the RWSS projects.** The projects addressing this issue, with the exception of Ethiopia and Mauritania, revealed inequitable access to WSS. In Ethiopia, nearly 55% of the beneficiaries were not charged for water. In the second project, pricing incentives were provided to families to construct their own latrines according to their ability to pay. Inequitable or unharmonized water fees were a concern in Burkina Faso and Burundi. In Burkina Faso, the price of water for rural populations is more than twice that of urban populations. Inequities were also found in Senegal, as drinking water supply and sanitation facilities were inaccessible to most of the population and provided limited improved conditions to cease open defecation practices among school attendees.

**For UWSS, national laws and regulations effectively ensured the inclusion of poor and vulnerable groups to access and benefits from the water supply and sanitation** through a social tariff, stand pipes and public latrines. The existing tariff system starts with a lifeline social tariff for the first 5 m<sup>3</sup>, except in Ghana where the limit is 10 m<sup>3</sup>. This social tariff was considered for the inclusion of poor and vulnerable groups in Tanzania, Ethiopia, Kenya and Mozambique. It represents 3% to 5% of the minimum monthly salary. Above this limit, the tariff escalates as a progressive block scheme. The industrial and commercial activities have special higher tariffs.

### *Gender Mainstreaming*

**The portfolio review found that gender inclusion in WSS PARs improved during the review period.** The number of 'gender' mentions in the documents increased from 88% (2005-2010) to 99% (2011-16). For the latter period, all AWM PARs mentioned gender, suggesting that this topic is now more prevalent than before and is being systematically referenced in key documents. This referencing is not an indicator of the depth of consideration of gender equality. For AWM projects, all the Bank's interventions addressed gender in their design and outcome measures. For RWSS projects, about half adequately addressed gender in both project design and outcome measures.

**The evaluation noted positive steps taken toward gender mainstreaming in 80% the case-study countries, notwithstanding the remaining challenges.** Positive steps ranged from integrating gender-specific targets and activities at the project level, to advocating for greater consideration of gender issues at working group meetings. Action on gender mainstreaming stemmed from the Bank's operational guidelines, including its gender strategy and requirements, such as the involvement of a gender expert in supervision missions. Interviewees pointed out that the Bank's gender-related indicators tended to focus on monitoring physical infrastructure, to the detriment of components such as behavior change.

**Project-level evidence indicated a mixed picture on gender mainstreaming in practice.** Some projects (Gambia AWM, Kenya KOSFIP, Rwanda, Uganda) included women in decision-making roles. For example, in the Gambia AWM project, the National Women Farmers' Association was a stakeholder in project planning. The KOSFIP AWM project in Kenya was designed with the participation of stakeholders, namely youth, women and vulnerable groups. In Rwanda, a community approach was adopted for RWSS program implementation, enabling women to actively participate in decision-making. In Uganda, all the water sources sampled had at least one woman in a key position on the water users' committees (WUC).

Moreover, across both AWM and RWSS projects, positive outcomes for women were identified, notably time-saving in the fetching of water, leading to increased engagement in other activities. In contrast, for Burkina Faso, RWSS outcomes were attenuated by the fact that gender-segregated latrines were not built. In addition, for Ghana, there were no specific gender mainstreaming activities, indicators or strategies captured in the RWSS project log-frame. Finally, the Mali project did not achieve specific anticipated benefits for women related to increased women's access to irrigated land.



# Contributing Factors to Achieving Development Results

The main factors contributing to the achievement of development results from the Bank's support to the water sector include: (i) coordination and partnership; (ii) co-financing and leveraging; (iii) knowledge and analytical work; and (iv) managing for development results.

## Coordination and Partnership

*The Bank has been active in development-partner coordination groups dealing with the water sector. Coordination is facilitated when it is anchored in a country's sector master plan and where government plays a leading role. The Bank often works closely with traditional development partners and national governments. Evidence of the Bank's role in building broader partnerships with the private sector and non-governmental entities is however limited.*

### **Coordination with Government and Development Partners**

**The Bank was active in development-partner coordination groups, and coordination practices were stronger across country offices where water specialists were present and well-positioned.** Case studies show development-partner coordination platforms operating within specific sectors, i.e., sector working groups, providing opportunities for the Bank's water specialists to influence the orientation of the government's sector or subsector development and coordinate with other development partners. Where an inter-ministerial or multi-sector programmatic approach across the RMC government was weak, the water specialist's involvement in a sector working group could be used to build RMC leadership capacity toward a multisector programming approach. This was the

case in Mozambique where, together with other development partners, the Bank used basket funds<sup>68</sup> for this purpose.

**The Bank assumed leadership in cooperation mechanisms in roughly half of the case-study countries. However, the Bank's capacity to effectively lead was questioned by stakeholders in 3 countries.** The Bank's ability to forge and maintain effective partnerships was facilitated by its opening of country offices and posting staff with the requisite skills. In Mali, the Bank was viewed as a successful convener of partners. Questions and concerns were raised by interviewees regarding the Bank's ability to play a leadership role in Cameroon, Mozambique and Senegal. This was because the Bank was already leading in other sectors, or due to lack of resources. For example, in Senegal no water specialist was present to lead the engagement.

**In terms of consideration of coordination during appraisal, the depth of analysis of development-partner coordination activities in the WSS sector decreased between 2005 and 2016.** The portfolio review also found that the practice of analyzing complementarity of the Bank's interventions with other development partners' interventions to ensure sustainability declined in recent years. Over the period 2005-2010, 57% of WSS PARs presented activities of other development partners. This proportion declined to around 30% during the period 2011-2016.

**Achieving and sustaining project outcomes is not guaranteed with development-partner coordination.** Interviewees and project evaluations indicate that project success was associated with the presence of inter-ministerial coordination and coordination between government tiers, as well as a stable project implementation unit capable

of playing a coordinating role. In Mali and Zambia, coordination across all government levels, along with the structural guidelines for this coordination, were explicitly part of the RWSS Initiative conceived by the Bank. Similarly, the presence of a master plan, created and updated by the government, helped coordination by making inputs more selective, with less duplication, by identifying needs and responsibilities, and building on previous achievements.

**Interviewees indicated scope for the Bank to improve its advocacy actions to support strategic planning, programming advancements and sector reforms, particularly for sanitation.**

Attention to sanitation was confirmed as lagging relative to water supply across almost all the countries included in the case studies (except for Morocco and Rwanda). The Bank was also identified as having a key role among development partners in advancing the case for sanitation. Nevertheless, lack of cooperation from the RMCs' ministry responsible for sanitation services undermined development-partner coordination efforts. For example, in Mali, the sanitation directorate did not offer development partners a consultation framework or an inventory of monitored projects, which was described as having a negative impact on their ability to coordinate.

**The Bank's ability to participate effectively in policy dialogue and to play a leadership role in sector partnership groups was largely influenced by its in-country presence, which was facilitated by the implementation of a decentralization policy** (AfDB, 2011). By 2015, half of the 39 professional staff members in the Water and Sanitation Department (OWAS) were decentralized to regional or country offices. These staff members managed 67% of projects in the active water sector portfolio, which represented over 70% of the approved budget. The mid-term evaluation of the Bank's decentralization strategy found that, while in-country presence led to a change in the frequency and responsiveness of

dialogue with the RMC, there had been no clear change in the depth of the dialogue (IDEV AfDB, 2009). The Bank has not engaged strongly in sector-wide approaches in the water sector (except in one of the 10 countries selected for case study). A sector-wide approach has been widely adopted by other development partners and stakeholders aiming to work more effectively together (CoWater International, 2008). A sector-wide approach also encourages a harmonized approach to policy dialogue and, to some extent, gives development partners an entry point for more upstream (rather than project-specific) dialogue.

***Partnership with the Private Sector***

At the strategic level, the Bank has indicated its commitment to enable and build partnerships with the private sector. Several initiatives and strategies are designed to explicitly address the role and opportunities available to the private sector: (i) the 2016 draft Bank Group Policy on Water<sup>69</sup>; (ii) the Bank's At the Center of Africa's Transformation corporate strategy for 2013-2022<sup>70</sup>; (iii) the Scaling Up Urban Sanitation in Africa Initiative (AfDB 2016c)<sup>71</sup>; and (iv) the forthcoming Water Supply and Sanitation Atlas<sup>72</sup>. Nevertheless, in practice, evidence that the Bank is playing a role in establishing partnerships with the private sector is limited. At the same time, the Bank projects specifically targeted private sector development in Morocco, Mali and Nigeria.

**Among the AWM projects, both positive and negative lessons can be drawn from the experience of private sector participation in specific projects.** The careful selection of private entities and investing in capacity building often influenced private sector contributions. However, the private sector partners lacked sufficient capacity. In Gambia, adapting procurement procedures enabled local firms to develop land and establish partnerships between the rice farmers' cooperative and private facilities and equipment suppliers. In Nigeria, private sector partnerships



with farmers' groups were strengthened throughout the project, although linkages with equipment suppliers remained weak.

**The country case studies highlighted different models that countries use for private sector participation in the water sector.** These included: (i) development of explicit policies to delegate WSS services to private companies (Benin, Burkina Faso, Mali, Mauritania, Mozambique, Niger, Rwanda, Senegal, Uganda); (ii) implementation of 'home-grown alternatives' to private sector participation (Burkina Faso, Uganda); and (iii) the use of PPPs with success in Gambia, Chad, but mixed results in Guinea Bissau and São Tomé & Príncipe.

Specific challenges in engaging the private sector were raised in the country case studies, including:

- Only one-third of countries had sector financing plans that were defined, agreed upon and consistently followed, and there were still significant gaps between needs, plans and financing (AfDB, 2010).
- Insufficient access to credit for private companies to invest in the water sector.
- Involving the private sector at the appraisal phase is difficult, since their own engagement may only come much later, during operation and maintenance.
- In rural areas, a lack of presence and capacity of the private sector, as well as the cost associated with dealing with dispersed populations, make securing the private sector's engagement more challenging.
- The lack of an appropriate legislative framework in many countries, to provide private operators with confidence, as well as monitoring their involvement and progress.

### **Partnership with NGOs and CSOs**

**The extent of partnerships with CSOs and NGOs was very limited.** While some examples of project-level interaction with NGOs and CSOs emerged in Mozambique, Uganda and Zambia, interviews suggested that the Bank could be doing more to directly engage with these actors. Indeed, direct cooperation and interaction with non-government partners was less common, with most non-government partners indicating that their involvement with the Bank was limited to executing specific project-level tasks via a government intermediary.

**Overall, CSOs and NGOs had variable views of the Bank's level and quality of engagement with their organizations.** Evidence from country case studies reveals that CSOs or NGOs were not sufficiently involved in formalized cooperation mechanisms, such as sector working groups and thematic groups. The Bank's approach to project selection and design was seen by stakeholders to be demand-driven, but mainly from the perspective of government demand as opposed to demand from specific groups or beneficiaries. Evidence from AWM projects further suggests that the mobilization of NGOs and CSOs for project planning and implementation was inadequate. This was explicit in Kenya, where CSOs were assessed as having been insufficiently mobilized.

### **Co-financing and Leverage**

*In terms of co-financing, for each UA invested by the Bank less than one UA was invested by partners such as country counterparts, development partners and others. Evidence on additional funds leveraged by the Bank is limited. However, leveraging activities were described positively by development partners and the Bank's country office staff.*

### Co-financing

Co-financing is an important aspect of Bank operations, and the water sector is no exception. It is an instrument for leveraging additional financing and sharing inter-agency capacities. The predominant sources of co-finance are governments and other development partners.

- In WSS projects, for every UA 1.0 invested by the Bank, UA 0.9 was provided as co-finance from various stakeholders. Fifty-three percent of total funding was provided by the Bank, with the remaining contributions coming from development partners (27%), country counterparts (19%), and other sources including beneficiaries and the private sector (1%). About half of the projects in the portfolio were funded by the Bank and the country counterpart, without the involvement of other funders. Disbursement challenges regarding timeliness and the completion of governments' financial participations was also noted—in three out of nine country projects in the subsector, the Bank had difficulty mobilizing the government funding portion.
- In AWM projects, for every UA 1.0 invested by the Bank, UA 0.5 was provided as co-finance. More than 80% of projects funded by the Bank did not include other development partners. The Bank provided about 85% of AWM project financing, governments provided anywhere from 10% to 15%, and beneficiaries made up the remainder. Overall, the Bank contributed 66% to AWM projects, 20% came from development partners, 13% from country counterparts, and 1% from other funders.

### Leverage

The evaluation did not find sufficient information to quantify the extent to which the Bank has been able to leverage additional support to the water sector. Some positive qualitative information is

available. Development partners and government officials in case-study countries describe the Bank's participation as essential, as it could positively encourage other development partners to contribute. For example, in countries such as Mali, Nigeria and Senegal, feasibility studies financed by the Bank were identified as being instrumental in successfully leveraging co-financing from other development partners. Similarly, in the case of Senegal leveraging was observed in WSS but not in AWM interventions. The country case studies highlighted some successes in which the RMCs were directly responsible for leveraging, e.g., WSS-focused budget support in Uganda and AWM support in Morocco. In these cases, RMCs sought support from the Bank for strategies, plans and programs, but took responsibility for leveraging funds, signing development-partner agreements and directing development-partner funding, and thus managing the coordination of projects.

In addition, the Rural Water Supply and Sanitation Initiative and the African Water Facility are two initiatives hosted by the Bank that aim to support innovative projects and raise investment for water projects throughout Africa. They provide a demonstration effect and therefore encourage others to invest in their scaling up. In Mali, for example, the RWSS Initiative reportedly attracted additional partners and funding for the WASH sector. It is estimated that each €1 contributed by the African Water Facility has attracted €34 as additional follow-up investments (AfDB, 2016a).

### Knowledge and Analytical Capacity

*The scale of the Bank's knowledge and analytical work in the water sector was deemed limited, but there is scope for it to do more. The Bank's knowledge work was described by water specialists in the Bank and some RMC officials (in Senegal, Cameroon and Mali) as useful. The perceived usefulness of Bank knowledge products varied across the RMCs, as did levels of awareness and accessibility. The stakeholders interviewed expressed a need for better access*

*to knowledge, especially lessons learned. This is an opportunity for the Bank to expand its work in this area, which will help it to fulfill its policy and advocacy role more efficiently.*

**The knowledge work produced by the Bank in the water sector had some influence, but it was limited in scale and not well known. The Bank's knowledge work was described as having influenced the discourse around development effectiveness, and spurred reforms on national strategies for water management and rural sanitation in three countries.** The country case studies point to the positive contribution of the Bank's economic and sector work (ESW) to the advancement of institutional reforms. Specific examples provided by governments or development partners in Senegal, Cameroon and Mali include national strategies for water management, governance and rural sanitation, and national policy on potable water, and water for industry and electricity. In addition, the evaluations and studies completed or commissioned by the Bank (e.g., water supply needs study in urban centers, institutional and organizational strength analyses, and a sanitation tariff study) were cited as having a direct influence on reforms and national strategies by country case-study interviewees.

**The Bank's knowledge and analytical work in water was targeted to support reforms and policy dialogue.** Supporting reforms in the water sector required expanded development and promotion of knowledge. Although the WSS Department provided support to RMCs to advance their knowledge on available water sources and to complete needs assessments (through feasibility studies), this was not sufficient to support reforms and policy dialogue, as revealed by the review of the Bank's ESW (2005-2010) and country case studies. The review of the Bank's ESW over the period 2005-2010 (AfDB, 2013a) shows that between 2005 and 2010, the WSS Department (OWAS) and the Agriculture and Rural Development Department (OSAN) each produced nine pieces

of ESW, representing respectively 5 percent of the total ESW produced by the Bank during this period. During the same period, the Governance, Economic, and Financial Reforms Department (OSGE) accounted for about 17% of all ESW produced by the Bank<sup>73</sup>.

The usefulness of the available Bank knowledge work was perceived to vary by country, and by levels of awareness and accessibility. About 75% of the interviewees during the country case studies were not aware of the Bank's water sector knowledge products. The most important means by which governments, development partners and NGOs became aware of the Bank's knowledge from project-specific analytical work was through informal consultations with the water specialist(s) in the country office. The accessibility of water specialists greatly facilitated knowledge dissemination, where the water specialists provided technical expertise, proposed solutions, connected actors and/or showcased various Bank projects. Development partners from Zambia, Uganda, Mozambique and Rwanda had regular discussions with the resident water specialist and were particularly positive regarding their approachability.

In addition to knowledge sharing via the country office, other informal interpersonal exchanges, for example with a Bank consultant or during a supervision mission, and formal interpersonal exchanges during seminars, roundtables or other forms of meetings, were identified as providing access to project-specific analytical work. For example, an annual roundtable organized by the Bank, in cooperation with the Malian government, mobilized stakeholders from the water sector and was described as the most important meeting in the sector. In Senegal, during workshops with project implementing units, the knowledge shared on themes emerging from specific types of previous projects, for example supporting agri-business and value chains, was integrated into the planning and implementation of current projects.

**Key lesson 13:** The availability of sufficient knowledge that is strategically shared is critical to inform the selection, design and implementation of water sector interventions.

Around 75% of interviewees during the country case studies believed that the Bank did not produce enough knowledge products or, if it did, it failed to effectively disseminate them. Interviewees overwhelmingly described the means used by the Bank to disseminate knowledge as inadequate. Development partners were often unaware of the knowledge products produced by the Bank. In cases where development partners knew about these knowledge products, they acknowledged their importance accordingly. Direct comparisons were made with the World Bank in this respect, whereby the World Bank was described as having a comparative advantage in this area and using deliberate dissemination approaches. The strong demand for knowledge on the part of stakeholders is an opportunity for the Bank to do more in this area.

The perceived usefulness of the Bank website was broadly associated with the type of knowledge sought. NGOs and CSOs sought knowledge products on specific project information and/or lessons learned. For example, knowledge products accessed and found useful on the Bank website included “studies on water user charges, i.e., tariffs, rural water supply, and regulatory environment for water utilities”. They did not always succeed in accessing the Bank’s website for water knowledge products. Certainly, the country office water specialist could assist partners’ use of the Bank website. The more the specialist described the utility of the information, the more partners tended to find it useful.

Access to lessons learned from specific projects was considered useful, but under-utilized. While some knowledge sharing events led by the Bank permitted lessons to be exchanged for the benefit of south-south cooperation and learning, overall this knowledge was described as insufficiently exploited. For example, a missed opportunity was noted in Cameroon, where evidence from local and regional studies was

described as potentially useful to advocate for policy reform but had remained unexploited. In another case, reference was made to the dissemination of documents that highlighted promising practices or lessons learned from specific projects. When mobilized, these documents were described as having had an influence on new projects. For example, in Senegal, a document describing lessons learned from small-scale local irrigation projects was identified by development partners as having been integrated into their agriculture management approach. There is therefore scope for the Bank to share its lessons learned more widely.

These challenges in terms of both producing and effectively disseminating and applying knowledge are not specific to the water sector or to the Bank. A study (Asian Development Bank, 2014) drawing together findings from across MDBs finds this to be a challenging area, identifying some strategies that are applicable to the Bank’s work in the water sector. These included: (i) improving the clarity on knowledge management concepts and roles, and improving coordination of knowledge efforts; (ii) incentivizing staff to enhance knowledge creation and quality; (iii) improving the use of IT infrastructure and social media, and enabling the codifying and sharing of tacit knowledge; and (iv) measuring the use of knowledge for operations.

## Managing for Development Results

*Monitoring and data availability were identified as challenges at the project level and also in the country cases studies. Evidence was found of mechanisms in place for project-level data to feed into higher-level sector monitoring efforts. The effectiveness of these mechanisms varied between RMCs. Insufficient access to baseline data to monitor performance was described as problematic for about 88% of projects examined. Across 80% of country case studies, supervision missions were cited as the key technique for project-level monitoring. Issues were raised regarding budgetary constraints, as well as the focus on physical infrastructure,*

*while capturing fewer 'soft' components such as behavior change.*

**About 88% of the 41 PERs reviewed highlight important shortcomings in M&E systems, particular in relation to the lack of data.**

For example:

- Missing baseline data upon which to measure the extent of progress in service delivery as a result of the provision of WSS facilities.
- Missing project completion reports and financial statements in some specific cases.
- Lack of data with which to measure efficiency.
- High staff turnover in district governments and Bank field offices limited both access to documents and institutional memory.
- While interviewees from countries included as case studies claim that mechanisms were in place for project-level data to feed into higher-level sector monitoring efforts, results from PERs did not confirm this, but rather highlighted a high degree of variation by country.
- Inconsistent choice of indicators or definition of indicators by different development partners and among individual projects.

**Notwithstanding challenges, there is evidence that the Bank sought to work closely with others in developing or aligning M&E frameworks.**

Interviewees in all countries (with the exception of Morocco) noted the consistent use of project-level logical or results frameworks, and that these tended to be developed in collaboration with government (and sometimes other partners) early on in the project and served as a basis for the indicators to be collected during monitoring exercises. The quality of these tools varied across projects. On paper, for example, in the OWAS Three-Year Action Plan 2014-2016, the Bank identified the need to

build capacity in government systems to strengthen results management systems but, as the evidence and issues with data availability demonstrate, this remains a challenge. Deepening the efforts to strengthen country-led M&E frameworks in the water sector is called for.

Supervision missions were perceived by stakeholders as the principal tool for project-level monitoring across nearly all the case-study countries. Supervision missions were carried out regularly, often involving the M&E specialist within the project implementation unit and Bank staff. Challenges were also raised, most notably: (i) budget constraints affecting either the breadth or frequency of monitoring; and (ii) the focus on hard infrastructure and less on softer issues, such as behavior change and capacity.

Another project-level quality assurance tool was the project completion report (PCR). PCRs were prepared over the 2005-2016 period with a substantial backlog. Only 23% and 28%, respectively, of the expected WSS and AWM PCRs were available (see Annex 6, Table A6.13).

**Key lesson 14:** Having a long-term view of water interventions is paramount for post-achievement monitoring of the functionality of facilities and the sustainability of outcomes.

The use of ex-post evaluations conducted 2 to 3 years after project completion was viewed as good practice, not only among Bank staff interviewed in the context of policy and the literature review but also by stakeholders met during case studies in Cameroon, Kenya, Rwanda and Morocco. One of these stakeholders noted that development partners did not take this 'long-term' view of projects, which is essential when monitoring the sustainability of outcomes. Data from the PERs suggest that without an appropriate post-achievement M&E system, the time-lag between the end of the project and the evaluation may negatively influence the quality of the data.

**Key lesson 15:** Monitoring and evaluation of water interventions' soft components, such as capacity and behavior change, is critical to ensure the materialization of the water sector Theory of Change.

**Although in 80 percent of case-study countries the Bank's projects had evolved over time to include a greater emphasis on the social and cross-cutting dimensions (e.g., gender, environment and value chains), the Bank's indicators tend to place strong emphasis on**

**monitoring physical infrastructure outputs, and less on capturing 'soft' components such as behavior change and real capacity.** Indeed, project-level evaluations were generally able to trace output indicators for the implemented physical infrastructure. Fewer indicators were traced with respect to soft infrastructure such as behavior change and capacity, as well as the consolidation, coordination and communications between the various entities responsible for the organizational, financial, institutional and regulatory vitality of the infrastructure.







# Issues and Recommendations

## Policy and Strategic Issues

### ■ *Water resources development and management*

**Recommendation 1:** The Bank should continue to enhance its engagement with RMCs on an integrated approach to Water Resources Development and Management. Such an integrated approach should go beyond WSS and AWM.

### Findings and Issues:

1. The benefits of UWSS were more clearly manifested in Morocco and Mauritius, where the governments integrated UWSS with tourism and small- and medium-sized business opportunities within their integrated development strategy and plans. This approach optimized UWSS use, business development and expansion, and helped to raise living standards.
2. Critical risks concerning the reliability and quality of water resources were not always adequately addressed during the Bank-supported water sector project designs. In addition, the independent evaluation of Integrated Water Resources Management (IWRM) implementation between 2000 and 2010 found that only five out of 40 of the projects reviewed explicitly addressed water resources management and conservation, a critical aspect for sustained water sector results.
3. Literature review, country case studies and PERs found that water security is one of the greatest challenges resulting from climate change and its economic fallout. Impacts are already being felt in African countries in all regions (Nigeria, Cameroon, Kenya, Eswatini, Egypt), and also on selected trans-boundary water resources, for

example in Lake Chad and Lake Victoria. The case of Kenya Green Zones provides a good example of how the Bank's water sector interventions can advance water conservation issues. Such practices should be further developed.

### ■ *Low access to improved sanitation*

**Recommendation 2:** The Bank should prioritize sanitation by focusing on the needed policy shifts, introducing new models with sustainable technologies, partnerships and scale-up mechanisms.

### Findings and Issues:

1. The two main approaches (financing, and community-based behavior change approaches) used for the Bank-financed sanitation interventions within the challenging RMC contexts (country sanitation policies, and widening financing gap in the WSS sector) contributed to the relatively low levels of sanitation outputs, including household latrines. The financing approaches were mostly used in the cluster projects (six of 11 projects). They have some limitations in terms of funds required for targets in hardware subsidies or loan schemes. In addition, the cost of latrines proposed in the Bank-funded interventions was seen as high by beneficiaries in some cases (e.g., Rwanda RWSS, and Congo Urban sanitation), making them difficult to scale up.
2. The Bank, through policy dialogue, has been advocating for and financing investments in sanitation with limited results, as sanitation remained a major challenge in Africa. Limited financing and performance of the sanitation and hygiene component does not bode well for achieving development results of RWSS interventions.

### ■ *Toward sustained service delivery and fostering development impact*

**Recommendation 3:** The Bank should deepen ongoing efforts to support increased innovative financing mechanisms (including private sector participation) to accelerate water and sanitation infrastructure development and management in RMCs.

#### **Findings and Issues:**

1. The landscape of donors is changing in Africa, with an increasing amount of official development assistance and concessional loans coming from non-traditional donors such as Brazil, China, India, Saudi Arabia, Kuwait, Turkey and the United Arab Emirates. The private sector is also playing an increasingly important role in the development finance landscape. These actors have the potential to provide financial resources, as well as knowledge and skills that can lead to more sustainable and effective infrastructure development and services. Countries require sound policy, governance and regulatory frameworks to attract finance from these actors for infrastructure development and to deliver effective services.
2. Specific challenges in engaging the private sector were raised in the country case studies, including:
  - Only one-third of countries have sector financing plans that are defined, agreed upon and consistently followed, and there are still significant gaps between needs, plans and financing;
  - Insufficient access to credit for private companies to invest in the water sector;

- In rural areas, a lack of presence and capacity of the private sector, as well as the cost associated with dealing with dispersed populations, make securing the private sector's engagement more challenging; and
- The lack of an appropriate legislative framework in many countries, to provide private operators with confidence, as well as monitoring their involvement and progress.

**Recommendation 4:** The Bank should continue to explore innovative ways to strengthen RMCs' institutional capacity and the performance of service providers toward sustained service delivery of water sector interventions, to attract funding and foster development impact

#### **Findings and Issues:**

1. Poor service delivery (water quality, quantity, reliability, accessibility and affordability) and performance of service providers (limited functionality of infrastructure) affected the main outcomes related to sustainable access to safe drinking water. Users of water and sanitation services seek to hold service providers to account over the services received. In addition, the sustainable development goals (SDGs) propose new definitions of success in the water sector, which go beyond access to an improved drinking water source, with a changing focus on monitoring service delivery. This should be incorporated in the Bank's interventions.
2. For AWM, the limited results in terms of improving access to water for irrigation are due to limited water-related outputs achieved and challenges in the capacity of water-users' associations (WUAs) to manage resources optimally.

3. The performance of UWSS was uneven in terms of providing sustained access to water and sanitation services. This was largely due to the poor quality of the aging urban water-distribution networks for some projects, limited wastewater management and lack of capacity.
4. Available evidence suggests that, while capacity development has always been an integral component of the Bank's water sector projects, there were limitations in terms of sustaining and enhancing the support. Evidence also indicates that countries with improved institutions were better equipped to make use of additional capacity support relative to those RMCs with weak governance and high staff turnover.

## Participatory Approach

**Recommendation 5:** The Bank should continue to adopt appropriate participatory practices through effective collaboration with stakeholders at all stages of the project cycle (identification and design, implementation, completion and exit) for its water sector interventions.

### Findings and Issues:

1. While projects were 'demand-driven' and thus responded to the RMCs' needs, the level of collaboration with beneficiaries and the private sector was weak in some RWSS projects and AWM interventions. In some of the cases, the main technologies used were not in line with beneficiary habits and practices.
2. Evidence from the 10 country case studies shows that the appropriate inclusion of stakeholders during project design, including experts on the ground, can contribute to sustaining water and sanitation facilities. Such stakeholders possess direct cultural understanding and affinity for the challenges that communities are facing.

## Results Measurement

**Recommendation 6:** The Bank should improve its measurement and reporting of development results. Specifically, the M&E system at project, country, and Bank levels should be strengthened to provide the requisite range of results data (baseline, targets and actual) for design, during implementation, at completion and post-completion. Results data should cover outputs and outcomes (for both hard and soft infrastructure) of its water interventions.

### Findings and Issues:

1. The key reporting tool used by the Bank - the annual development effectiveness report (ADER) - is based on data from project reports (including approved PCRs) that assume access rates in terms of people living in the vicinity of the infrastructure. This tool does not take into account water infrastructure that ceases to function shortly after project completion, or issues of quality and reliability.
2. Furthermore, the Bank's efforts to track performance toward development outcomes do not provide sufficient guidance and appropriate resources for project M&E systems to track key outcomes of its interventions throughout the project lifespan, including post-completion. Lack of appropriate M&E systems and missing baselines were reported in 88% of the cluster projects. New information and communication technology (ICT) offers opportunities for more cost-effective M&E.

3. The Bank's new Development and Business Delivery Model (DBDM) does not clearly include, within the decentralized structure, a role for M&E and demonstration of outcome sustainability after project funding ends.

## Knowledge Sharing

**Recommendation 7:** The Bank should continue its promotion of platforms, networks and knowledge products to enhance the transfer of experience and knowledge among development partners, governments, end beneficiaries, sector experts and evaluators for improved performance of its RMCs.

### Findings and Issues:

1. Some stakeholders, especially in RMCs, have questioned the adequacy of the Bank's investment in knowledge and knowledge products. It is argued that the scale of knowledge work produced by the Bank in the water sector

was limited and not strategically disseminated compared with other MDBs, such as the World Bank. However, the knowledge work that has been produced was described in some cases (Senegal, Cameroon, Mali) as helping staff to influence the discourse on the reform of national strategies for water management and rural sanitation. There is therefore scope for the Bank to do more in this area.

2. The assessment also noted that the usefulness of knowledge products varies across RMCs and depends on the level of awareness and accessibility. The use of ex-post evaluations conducted 2 to 3 years after project completion was viewed as good practice, not only among Bank staff interviewed in the context of the policy and the literature review but also by stakeholders interviewed during case studies in Cameroon, Kenya, Rwanda and Morocco. This helps to reduce the tendency of development partners to neglect the 'long-term' view of projects, which is essential for attaining sustainability of the benefits of completed projects.







# Annex 1: Water Interventions' Logical Model and the Theory of Change

Figure A1.1: Water (WSS and AWM) sector results chain

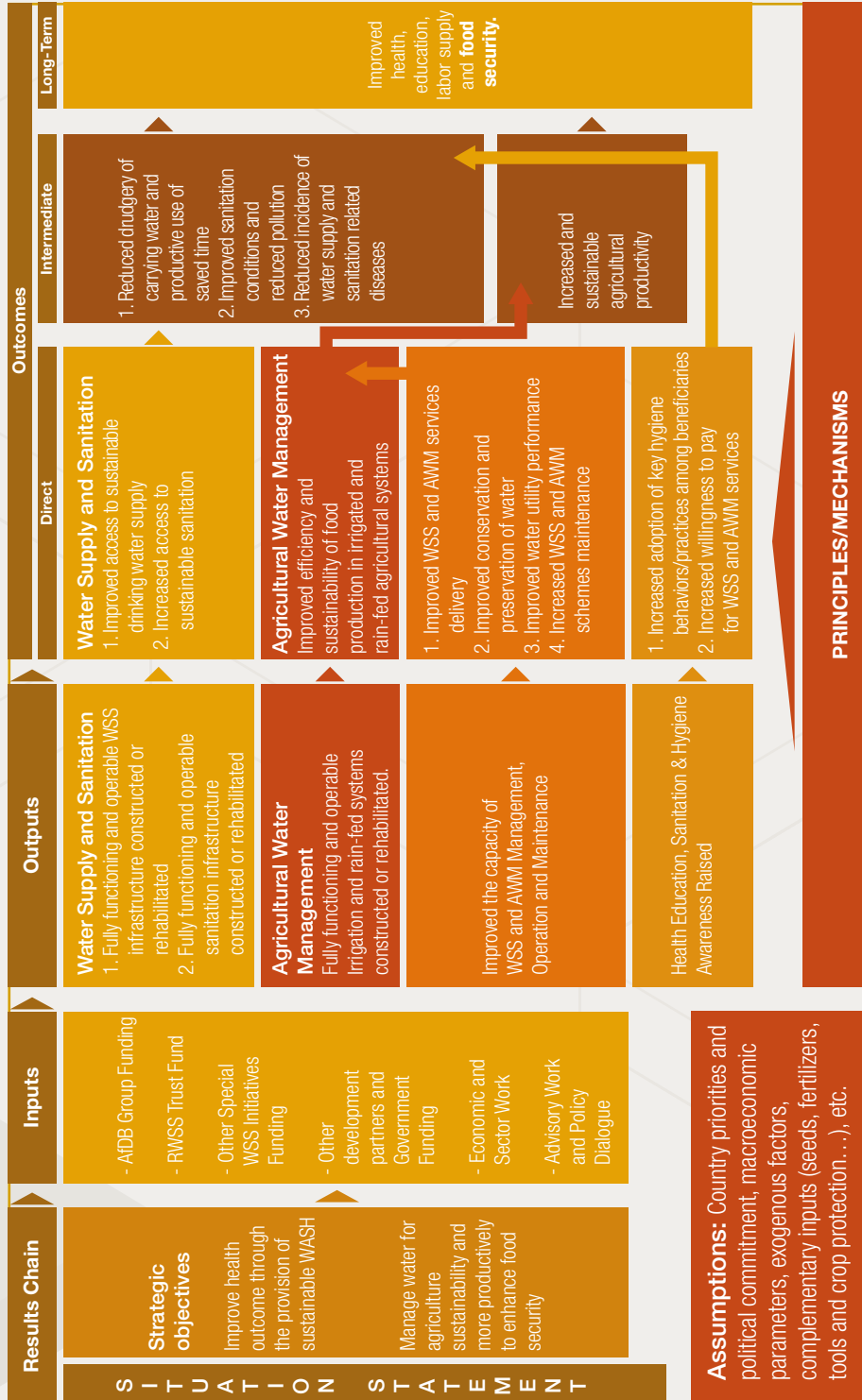




Figure A1.2: Water supply and sanitation logic model

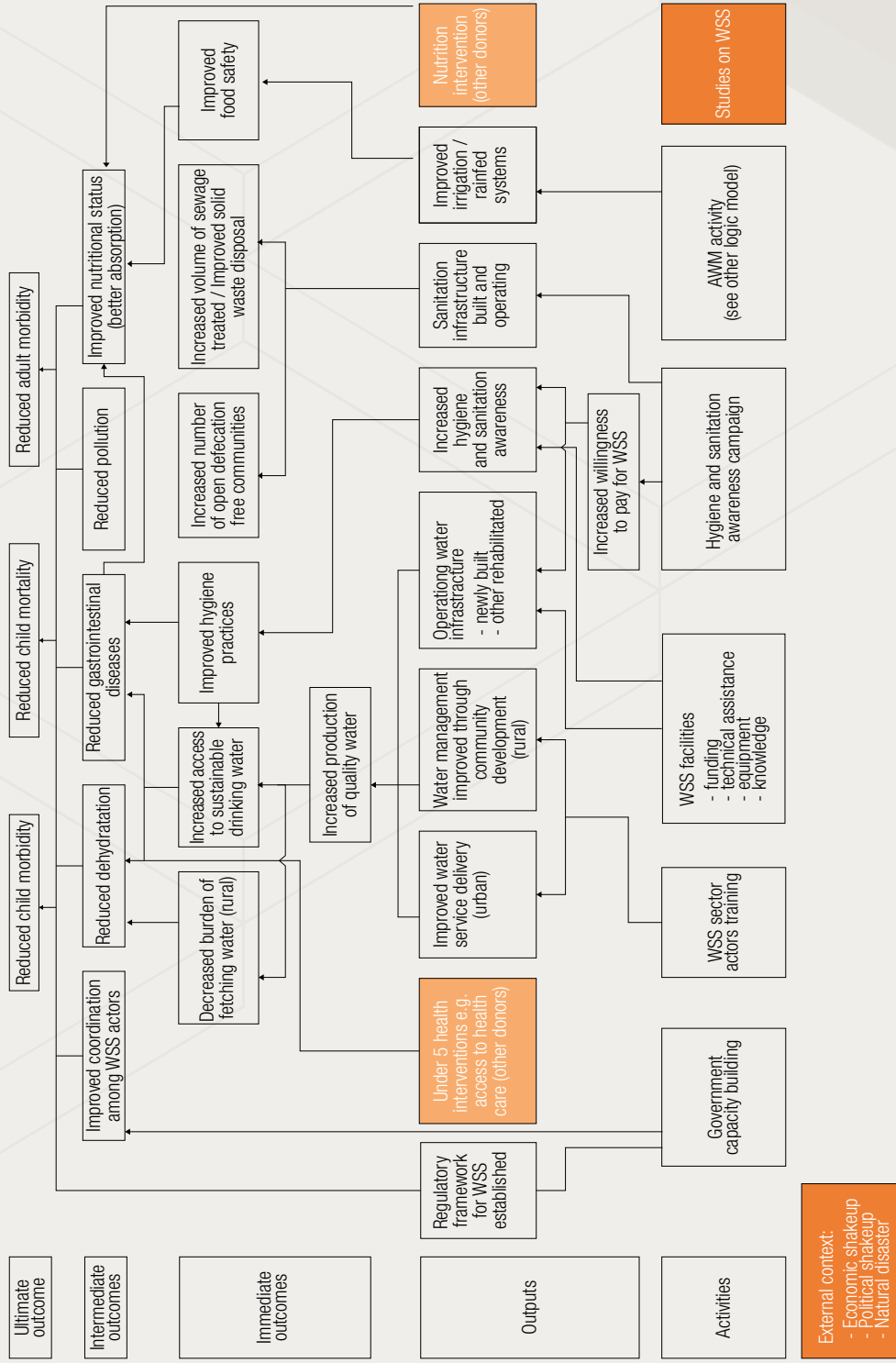
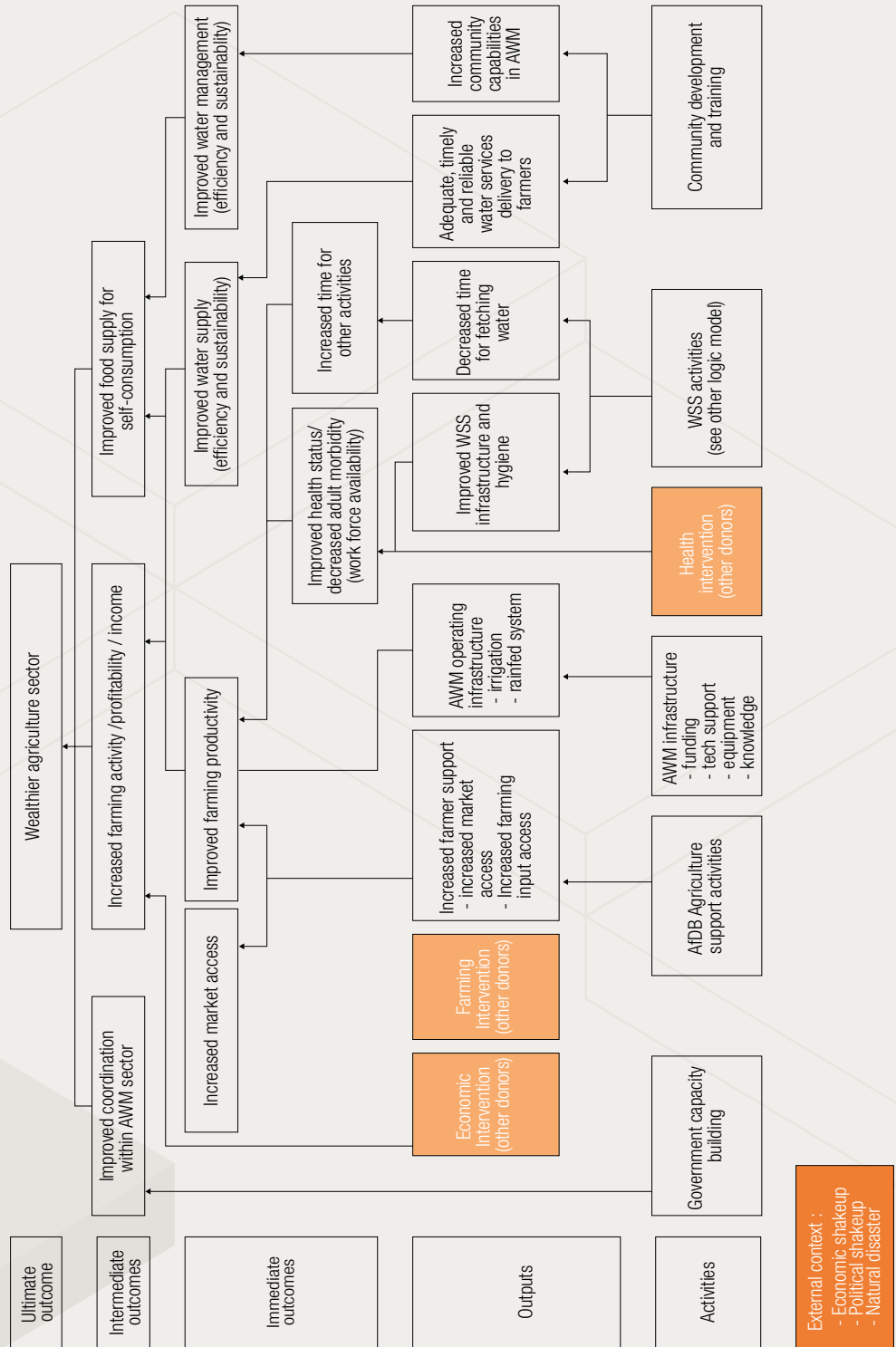


Figure A1.3: Agricultural water management logic model



**Box A1.1:** Water (WSS and AWM) sector Theory of Change

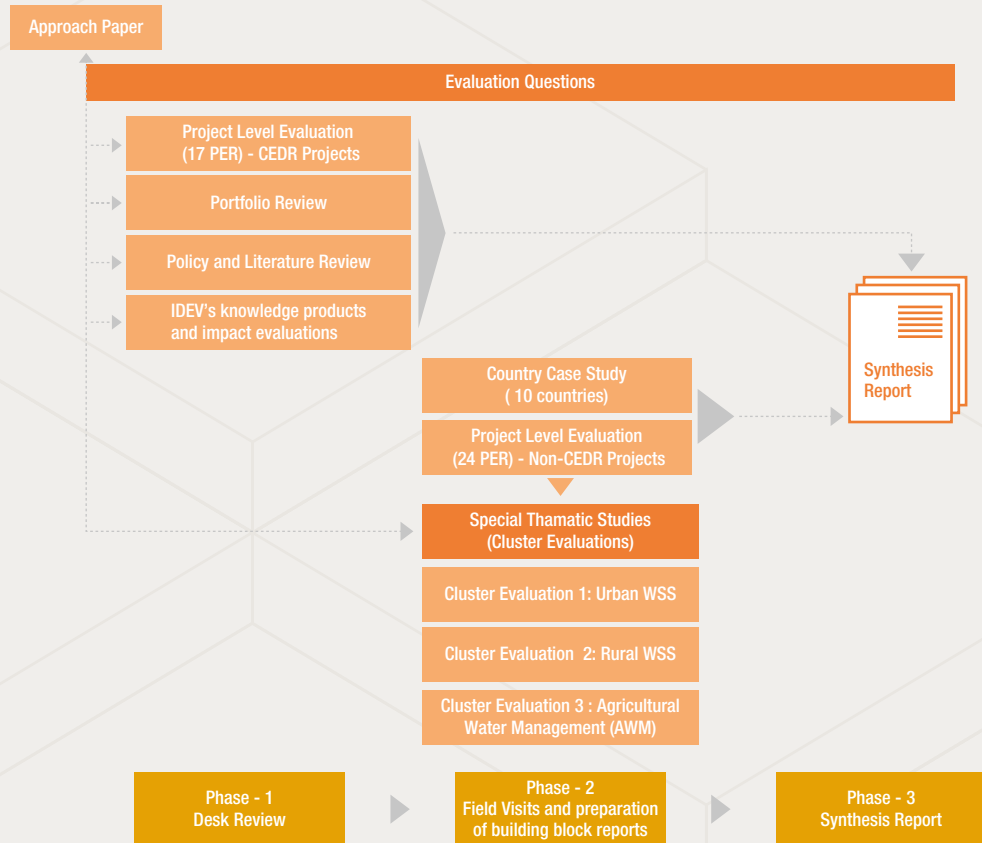
The impact of WSS and AWM interventions is related to health, education, labor supply and food security.

The Bank, along with other development partners, provides RMCs with funding, technical assistance, equipment and knowledge to construct and/or rehabilitate WSS facilities, as well as infrastructure for AWM. Accordingly, fully functional and operable WSS and AWM infrastructure (including both hardware and software) is delivered.

In addition: (i) WSS and agriculture sector actors (ministries, artisans, water utilities, water users, etc.) are trained on WSS and AWM management, operation and maintenance (including managing PPPs); (ii) hygiene awareness is raised, and the regulatory framework for WSS sector (including tariffs) is established; (iii) equipment (water-metering systems) is provided to water utilities/municipalities; (iv) high-quality studies on WSS and AWM sector management issues are conducted and used; (v) campaigns to raise awareness on hygiene, health education, sanitation, water use and tariffs are effectively carried out; and (vi) service delivery by different actors is improved (e.g., building better sanitation facilities, maintaining water, improving management of PPP and setting tariffs).

All of this will lead to:

- First, reduced incidence of water and sanitation related diseases through: (i) increased reliable production of high-quality (according to WHO safety standards) water and high-quality sanitation services; (ii) increased access to sustainable drinking water supply by household; (iii) increased volume of sewage reaching the treatment plant and, as a result, the volume of sewage effectively treated increased, with increased volume of solid waste effectively disposed of and increases leading to an improvement in dump-site management; and (iv) increased proportion of beneficiaries practicing proper hygiene, including handling water properly and keeping it clean.
- Second, reduced burden of fetching water in rural areas through: (i) increased and sustained access to safe water supply by households in rural areas; and (ii) reduced time to fetch water in rural areas and, as a result, beneficiaries have more time available for other productive activities.
- Third, sanitation conditions and reduced pollution related to sewage and solid waste owing to: (i) increased volume of solid waste effectively disposed of increases leading to an improvement in dump site management; (ii) beneficiaries practicing proper sewage and solid disposal; and (iii) reuse of treated water and sludge is increased.
- Finally, increased and sustainable agricultural productivity owing to increasing water-use efficiency and productivity in both irrigated and rain-fed areas coupled with access to complementary inputs such as appropriate seeds, fertilizers, tools and crop protection measures. This is a result of: (i) adequate, timely and reliable service delivery to WUAs; (ii) adequate, timely and reliable service delivery to water users; and (iii) improved water management (i.e., improved conservation and preservation of water).

**Figure A1.4:** WSS sector evaluation – Overall schematic design

## Annex 2: Methodological Note

### Sampling strategy for project level evaluation

WSS projects were purposely selected in two phases. The first phase relates to the preparation of the Comprehensive Evaluation of Development Results (CEDR) that covered 14 countries. For each of the 14 countries, a detailed project-level assessment was conducted as a line of evidence for completed projects. The projects selected for independent evaluation include 17 completed WSS projects approved during the period 2005-13. In the second phase, seven projects were selected in the countries not covered by the CEDR with evaluability and budget constraints as selection criteria. In addition, eight projects approved in the period 2000-04, and for which an independent evaluation was done, were added in the sample to strengthen the learning component.

For AWM, all projects approved during the 2005-16 period and identified as completed (nine projects) were included in the sample.

Therefore, IDEV identified a total number of 41 project-level evaluations as a line of evidence for this evaluation, of which 33 projects would be used for accountability purposes (nine UWSS, 13 RWSS, nine AWM and one Water Sector Adjustment) and eight for learning purposes.

Tables A2.1 and A2.2 provide the list of indicators for WSS and AWM interventions.

Table A2.1 : Key outcome indicators for water supply and sanitation projects	
<p><b>A – WATER SUPPLY</b></p> <p><b>Improved access to drinking water supply</b></p> <ul style="list-style-type: none"> <li>■ Additional water production (m<sup>3</sup> / day)</li> <li>■ Number/Percentage of water testing results meeting the standards (water quality)</li> <li>■ Number/Percentage of population /household using an improved drinking water source</li> <li>■ Average water consumption per user in the project area</li> <li>■ Distance between home and the water point</li> <li>■ Time saved in water fetching</li> <li>■ Percentage of children under five who had diarrhea in the past two weeks</li> </ul> <p><b>Improved equity in service delivery</b></p> <ul style="list-style-type: none"> <li>■ Water pricing differentiated by service level</li> <li>■ Non-payment of water by certain categories of users</li> <li>■ Distribution of payment for water by households</li> </ul> <p><b>Improved services provided by different actors</b></p> <ul style="list-style-type: none"> <li>■ Number of hours of water service per day</li> <li>■ Availability of spare-parts for hand pumps</li> </ul> <p><b>Improved water utility performance</b></p> <ul style="list-style-type: none"> <li>■ Percentage of drinking water utility's supply that is non-revenue</li> </ul> <p><b>Increased adoption of key hygiene behaviors/practices</b></p> <ul style="list-style-type: none"> <li>■ Percentage of households in target areas practicing correct use of recommended household water treatment technologies</li> <li>■ Number of liters of drinking water disinfected with point-of-use treatment products</li> <li>■ Willingness to pay WSS services</li> </ul>	<p><b>B – SANITATION</b></p> <p><b>Increased access to improved sanitation</b></p> <ul style="list-style-type: none"> <li>■ Number/Percentage of population/households using improved individual toilets</li> <li>■ Number/Percentage of improved toilets in institutional settings</li> <li>■ Percentage of population in targeted areas practicing open defecation</li> <li>■ Percentage of children under five who had diarrhea in the past two weeks</li> </ul> <p><b>Wastewater treatment</b></p> <ul style="list-style-type: none"> <li>■ Wastewater collection systems access rate (%)</li> <li>■ Sewage treatment rate per treatment level (tertiary, secondary, primary, untreated) - in %</li> <li>■ Quality (load) of effluents discharged into the natural environment (SS, BOD5 and COD, pH, phosphorus, nitrogen)</li> <li>■ Rate of sludge generated during treatment of wastewater by stage that was evacuated in accordance with the regulations (%)</li> </ul> <p><b>Improved sanitation and hygiene practices</b></p> <p>Number/Percent of households with soap and water at a handwashing station commonly used by family members</p>

**Table A2.2 : Key outcome indicators for agricultural water management projects****Improved efficiency and sustainability of food production in irrigated and rain-fed agricultural systems**

- Number and quality of water resources sustainability assessments undertaken
- Hectares under new or improved/rehabilitated irrigation and rain-fed services
- Number of hectares under improved technologies or management practices
- Number of farmers and others who have applied improved technology or management practices
- Number/Percentage increase in number of people benefiting from improved irrigation and rain-fed water management
- Water use efficiency
- Irrigation efficiency

**Improved services provided by different actors**

- Adequate, timely and reliable service delivery to WUAs
- Adequate, timely and reliable service delivery to Water Users by WUA
- Beneficiaries appreciation of level of service
- Crop water productivity

**Increased productivity of irrigated agriculture****Agricultural production**

- Productivity per crop
- Cropping intensity (Total seasonal area cropped per unit command area)
- Total seasonal crop per unit command area (crop, yield, kg/ha)
- Total seasonal crop production per unit water supply (kg/m<sup>3</sup>)

**Irrigation water delivery**

- Seasonal irrigation water supply per unit command area (m<sup>3</sup>/ha)
- Main system water delivery efficiency (Total seasonal volume of irrigation water delivery/Total seasonal volume of irrigation water supply)
- Water delivery capacity (Canal capacity at head of the system/Peak irrigation water demand at head system)
- Percentage increase in area under soil and water conservation practices

## Policy and literature review

The policy and literature review report summarizes the evidence gathered through the review of documentation and literature, as well as 16 interviews with Bank water specialists. It focuses on: (i) highlighting the emerging trends and lessons in the water sector; (ii) the evolution of the Bank's policy framework, with the relevant literature being reviewed to identify the factors that have influenced the water sector in Africa and developing countries in other regions since 2005; and (iii) the evaluation has also examined how these changes have influenced the development community.

Four overarching sources of information were used for this purpose: (i) policy documents by the MDBs and bilateral institutions active in Africa; (ii) evaluation and research documents produced by these and other relevant institutions; (iii) studies by water and agriculture specialists; and (iv) interviews with Bank staff who are water sector specialists.

The literature contains a large range of publications on water for sanitation and for agriculture, including Bank documents, World Bank and European Union (EU) documents, policy and evaluation documents of bilateral institutions, and publications by water and agriculture sector specialists (excluding water-related topics that do not concern agriculture). Attention has also been given to including documents from emerging development partners, including those from BRIC countries.

A total of 210 secondary data sources were accessed to complete the policy and literature review. These included continental and international policy documents, strategy papers, declarations and conventions, such

as The African Water Vision 2025 and other key documents released by the African Minister's Council on Water (AMCOW), the 2015 and 2016 World Economic Forum's Global Risk Reports, the World Bank report High and Dry: Climate Change, Water, and Economy, and the UN Secretary-General's report on progress toward Sustainable Development Goals and Millennium Development Goals.

The review has also included sector-specific papers and evaluations within the water sector at the Bank, including but not limited to water and agriculture strategy papers, medium- and long-term development plans, the Synthesis Report on AfDB Project Assistance for WSS (2014), Agriculture Water Management in Ghana and Mali, 1990-2010 (2012) and Capacity Strengthening of Urban WSS Entities in RMCs (2004).

A total of 22 Bank staff members, identified as water sector specialists - mainly by IDEV staff and additionally by water sector specialists themselves - were invited to participate in a telephone or Skype interview. A total of 16 experts agreed to participate and responded to interview questions either during an interview (14) or in writing (2). Two of the 16 experts completed just half of the interview. Three participants were water specialists working as overall experts at the Bank Headquarters, and 11 were experts assigned to specific countries. Each of the 10 countries selected for a case study was represented by at least one interview, except for Morocco, where no interviews were completed. Interview data were used to triangulate evidence and validate the story developed in line with the trends, lessons and evolution of the water sector in general, and the Bank's policy framework in particular.

## Country case studies

One aim of the synthesis of country case studies (CCSs) is to have in-depth discussion on policy and strategic issues with the main water sector stakeholders. A second aim is to advance understanding of the role of factors that are internal and external to the AfDB, and that contributed to the success or failure of water sector interventions. Country-level factors, both ad hoc and systemic, are identified to: (i) describe how they interact with the AfDB's water sector interventions; and (ii) explain their possible complementary, sequential or synergistic relationship with these interventions. The evaluation assessed the extent to which the AfDB's approach to addressing water sector issues is comprehensive within each country and responsive to country-specific needs.

A total of 10 countries were invited to participate in a CCS. Selection aimed to achieve a 'representative' sample of countries based upon geography (north, south, east and west), weight and the diversity of the Bank's portfolio (net loan amounts, non-lending activities and presence of PPPs), as well as the achievement of water-related MDGs. Countries where projects overlapped with thematic cluster analysis (another line of evidence in this evaluation), and thus where we find a relatively high representation of rural water supply and sanitation and agriculture water management projects, were also given priority. The countries included in the CCS synthesis are Kenya, Mali, Mozambique, Rwanda, Senegal, Uganda, Cameroon, Morocco, Nigeria and Zambia. Country missions took place in April and May 2017.

**Table A2.3:** Interviewees across country case studies

Country	WSS/ AWM	Stakeholder Category					Total	As a percentage
		Bank staff	Government	International development partners	Civil society and NGOs	Private sector		
Cameroon	WSS	1	2	2	3	2	10	5.2%
Kenya	AWM	1	4	4	1	0	10	5.2%
Mali	AWM	1	6	4	1	2	14	7.3%
	WSS	2	4	4	3	0	13	6.7%
Morocco	AWM	1	3	3	0	0	7	3.6%
	WSS	2	10	3	0	0	15	7.8%
Mozambique	WSS	1	13	8	1	1	24	12.4%
Nigeria	WSS	3	5	0	1	3	12	6.2%
Rwanda	AWM	2	2	3	0	1	8	4.1%
	WSS	1	6	2	8	0	17	8.8%
Senegal	AWM	1	4	3	1	0	9	4.7%
	WSS	1	6	0	0	0	7	3.6%
Uganda	WSS	1	6	2	9	0	18	9.3%
Zambia	WSS	1	17	5	6	0	29	15.0%
<b>Total</b>		19	88	43	34	9	193	
<b>As a percentage</b>		9.8%	45.6%	22.3%	17.6%	4.7%		

A total of 14 CCSs were completed across the 10 countries, with two CCS missions completed for each of Mali, Morocco, Rwanda and Senegal (one for AWM and one for WSS). A total of 193 interviewees participated across the 14 CCSs (Table A2.3), with an average of 14 interviewees per CCS. The rate of participation ranged from a high of 29 interviewees in Zambia (WSS) to lows of seven in Morocco (AWM) and Senegal (WSS). The water sector stakeholder respondents were selected to permit the evaluation to gather evidence representing four key target groups that play an indispensable and interconnected partnership role with the Bank's water strategies and project management.

Overall, the number of respondents across the stakeholder categories were as follows:

- Government officials working in central and line ministries with mandates associated directly or indirectly with Water Sanitation and Hygiene Promotion (WASH) and/or AWM [n= 88]
- Bank staff (water sector expert or alternative staff member) working in country field offices [n= 19]
- International donor/development partners with WASH and/or AWM operations/projects [n= 43]
- Civil society organizations (CSOs) and non-governmental organizations (NGOs) with WASH and/or AWM projects [n= 34]
- Private sector [n= 9]

The main limitation of the data provided from country case studies is that they are primarily based upon the perspectives, opinions and experiences of the stakeholders who were willing and available to participate in an interview. To mitigate this limitation, a variety of stakeholders was invited to participate in interviews. By



asking several overlapping questions, the data provided an opportunity to compare and contrast responses across interviewees. The number of interviewees across country case studies is presented below.

### Synthesis phase

For synthesis purpose, the evaluation team conducted a content analysis on all lines of evidence (e.g., portfolio review, policy and literature review, country case studies, PERs/Cluster evaluations). All sub-products were uploaded into software for analysis of qualitative data (Atlas.ti) system and using the Evaluation Matrix as a closed coding structure then analyzed and coded for relevant indicator data. Open coding was used to capture topics of interest and emerging evaluation issues. The coded data by question and indicator was triangulated and analyzed using data visualization techniques and/or data query tools.

The organized information was also used to construct a clear performance storyline for each subsector (RWSS, UWSS and AWM) that is based on the constructed Water interventions' logical model and Theory of Change (Annex 1). A copy bundle of the Atlas.ti project file was created and is available.

## Annex 3: Evaluation Matrix

Evaluation Core Issues	Evaluation Questions	Evaluation Indicators	Portfolio Review	Policy and Literature Review	PER Assessment	Cluster Evaluation	Country Case Studies	
<b>Enabling Results</b>								
<b>ER 1.0 Selectivity</b>	ER 1.1 To what extent are the Bank's projects (WSS and AWM) strategically focused, coordinated and complementary with other development partners?	1.1.1 Degree of coordination with projects of other donors and development partners (DPs).		•	•	•	•	
		1.1.2. Degree of complementarity of Bank's water project with those of other donors and DPs.	•	•	•	•	•	
		1.1.3 Extent to which the Bank completed a thorough analysis of its comparative advantage in relation to other donor and DPs.		•				•
<b>ER 2.0 Efficiency</b>	ER 2.1 To what extent the Bank's identification, design and approval mechanisms and human resources contributed to ensure that the activities (i.e., WSS and AWM projects) used the least costly resources possible in order to achieve the desired results (Optimize Cost-benefit ratio, Cost-effectiveness)?	2.1.1 Extent to which the Bank's water projects included a standard comprehensive range of feasibility studies (engineering design, etc.) done as part of the project Q@E process.	•	•				
		2.1.2 Extent to which the Bank made a consistent use of economic and financial analysis (IRPs) at appraisal stages, including systematic testing of alternative designs (i.e. alternative approaches were compared to see whether the most efficient process was adopted).	•	•				
		2.2.1 Extent to which the Bank's water portfolio faced delays and cost overruns.	•			•	•	•
	ER 2.2 To what extent Bank's WSS and AWM portfolio incurred delays and cost overruns in delivering expected outputs (timeliness)?	2.2.2 Extent to which procurement of Bank financed projects were conducted in a timely manner.	•		•	•	•	

Evaluation Core Issues	Evaluation Questions	Evaluation Indicators	Portfolio Review	Policy and Literature Review	PER Assessment	Cluster Evaluation	Country Case Studies	
<b>ER 3.0 Partnerships</b>	ER 3.1 How effective has the Bank been in facilitating and engaging productive partnerships with or between RMC, DP, industry, private sector, civil society and beneficiaries in water sector (WASH and WSS)?	ER 3.1.1 Extent to which the Bank has established partnership arrangements/ frameworks in the water sector with RMC, DP, private companies or civil society.			•	•	•	
		ER 3.1.2 Evidence that the Bank contributed to promoting policy dialogue or building cooperation frameworks.		•			•	
		ER 3.1.3 Evidence that the Bank implemented coordination structures, such as sector working groups.		•				•
		ER 3.1.4 Evidence that the Bank assured that sector consultations were documented.		•				•
		ER 3.1.5 Evidence that the Bank has of guidelines for promoting partnerships with the private sector and emerging DPs.				•		•
	ER 3.2 To what extent are the responsible Departments (i.e., OWAS, OWSAN) using strategic principals and mechanisms to achieve expected outcomes?	ER 3.2.1 Extent to which the Bank's water projects use demand-driven participation and methods in water sector.		•	•			•
		ER 3.2.2 Extent to which the Bank's water projects use private sector development in water sector.		•	•			•
		ER 3.2.3 Evidence of gender mainstreaming in water sector projects.		•	•	•	•	•

Evaluation Core Issues	Evaluation Questions	Evaluation Indicators	Portfolio Review	Policy and Literature Review	PER Assessment	Cluster Evaluation	Country Case Studies
<b>ER 4.0 Leverage</b>	ER 4.1 How well has the Bank leveraged resources?	ER 4.1.1 Extent to which Bank brought additional co-financing to the project (e.g. public commitment, private capital) which would not likely have occurred without the Bank's involvement.	•		•	•	
		ER 4.1.2 Extent to which Bank brought additional co-financing at the sector level (e.g. development and donor partners) which would not likely have occurred without the Bank's involvement.	•				•
		ER 4.1.3 Strengths and weaknesses in maximizing leveraging in water sector.	•			•	•
<b>ER 5.0 Analytical Capacity</b>	ER 5.1 Has the Bank fulfilled its policy influence and advocacy role with strong knowledge products and analytical work at country and sector level?	ER 5.1.1 Existence of knowledge products and analytical work available (e.g., sector political economy, institutional governance and performance, PFM, corruption, etc.).		•			•
		ER 5.1.2 Proportion knowledge products and analytical work specific to the water sector, by theme or topic.					•
		ER 5.1.3 Extent to which RMCs, DPs and civil society express their satisfaction with the Bank's knowledge products and analytical work.					

Evaluation Core Issues	Evaluation Questions	Evaluation Indicators	Portfolio Review	Policy and Literature Review	PER Assessment	Cluster Evaluation	Country Case Studies
<b>ER 6.0 Managing for Development Results</b>	ER 6.1 To what extent has the Bank's monitoring been supportive to achieving the expected short-term and intermediate outcomes (as per the Paris Declaration principles and indicators, including the extent to which the Bank is learning from experience)?	ER 6.1.1 Extent to which the performance indicators identified in the PAR are closely monitored afterwards. ER 6.1.2 Extent to which the assumptions and risks identified in the PAR are closely monitored afterwards. ER 6.1.3 Extent to which updated performance and risk indicator is available at the project level. ER 6.1.4 Extent to which updated performance and risk indicator is available at the sector level. ER 6.1.5 Extent to which the Bank's country teams used monitoring data for project and sector management.			•	•	•
	ER 6.2 To what extent the Bank's projects were adapted over time, taking into account RMCs' emerging challenges and evolving development priorities?	ER 6.2.1 Extent to which there has been an evolution in the Bank's project component structure over time in response to RMCs' development needs.	•	•			•
<b>Development Results</b>	DR 1.1 To what extent the Bank's expected development immediate and intermediate outcomes were achieved?	DR 1.1.1 Extent to which the Banks' projects have achieved the expected immediate and intermediate outcomes as per the logic model in the PAR.			•	•	
		DR 1.1.2 Extent to which the Banks' projects have achieved immediate and intermediate outcomes as per the evaluation subsector logic model.			•	•	
		DR 1.1.3 Number of people whose lives were positively affected.			•	•	
		DR 1.1.4 Evidence of unintended consequences (positive or negative) attributable to the Bank's projects.	•	•	•	•	•

Evaluation Core Issues	Evaluation Questions	Evaluation Indicators	Portfolio Review	Policy and Literature Review	PER Assessment	Cluster Evaluation	Country Case Studies	
<b>DR 2.0 Effectiveness</b>	DR2.1 What were the major enabling factors that influenced the achievement of or non-achievement of the expected outcomes a/p the subsector logic models?	DR 2.1.1 Evidence that demonstrates which enabling factors contributed most to the achievement of expected outcomes.		•	•	•	•	
		DR 2.1.2 Evidence that demonstrates which constraining factors contributed most to the non-achievement of expected outcomes		•	•	•	•	
<b>DR 3.0 Relevance</b>	DR 3.1 To what extent do the outcomes achieved by the Bank address the water-related policies and priorities of the Bank, RMCs, development partners and intended beneficiaries.	DR 3.1.1 Extent to which the objectives were aligned with the Bank's water strategy focus during the evaluation timeframe.			•	•	•	
		DR 3.1.2 Extent to which the objectives were aligned were aligned contributed to addressing the RMCs key water development challenges.			•	•	•	
		DR 3.1.3 Extent to which the objectives were aligned with the MDGs, SDGs and Water Vision 2015 Goals.				•	•	•
		DR 3.1.4 Extent to which the objectives were aligned still address the needs of the intended beneficiaries at the time of the evaluation.				•	•	•

Evaluation Core Issues	Evaluation Questions	Evaluation Indicators	Portfolio Review	Policy and Literature Review	PER Assessment	Cluster Evaluation	Country Case Studies	
<b>DR 4.0 Sustainability</b>	DR 4.1 What steps have RMCs taken to ensure the sustainability of the outcomes achieved, e.g., use of technology, self-sustaining or alternate funding, institutional capacity building, etc., after development-partner funding ceases?	DR 4.1.1 Extent to which the RMCs have access to the right technology to address the water infrastructure challenges.		•	•	•	•	
		DR 4.1.2 Extent to which the RMCs have the technical skills for the maintenance of new water infrastructure.		•	•	•	•	
		DR 4.1.3 Extent to which the RMCs continue to procure equipment and spare-parts to maintain capital assets (e.g., pumps, motors, pipes, etc.) to address water infrastructure challenge.		•	•	•	•	•
		DR 4.1.4 Extent to which the RMCs have established the means to ensure the financial viability of the new water infrastructure.		•	•	•	•	•
	DR 4.2 Do beneficiaries maintain and/or continue to generate the outcomes both ensuring environmental sustainability and social equity after development-partner funding ceases?	DR 4.2.1 Extent to which the beneficiaries maintain and /or continue to generate the outcomes.				•	•	
		DR 4.2.2 Extent to which beneficiaries have the capacity (e.g., financial, time) to maintain and /or continue to generate the outcomes.				•	•	
		DR 4.2.3 Extent to which beneficiaries have a sense of ownership to ensure the environmental sustainability of the outcomes.				•	•	
		DR 4.2.4 Extent to which the beneficiaries have equitable access to the outcomes and the benefits.				•	•	

## Annex 4: Project-level Evaluations List

No	Country	SAP code	Division	Project Name	Status	Group	Approval Year	Net Loan (UA Million)	Disb. Rate
<b>Urban Water Supply (8)</b>									
1.	Morocco	P-MA-E00-005	OWAS2	HUITIEME PROJET D'APPROVISIONNEMENT EN EAU	CLSD	WSS – Urban Water Component	2004	53,64	100
2.	Mozambique	P-MZ-E00-006	OWAS2	NIASSA PROV TOWNS WATER AND SANITATION	COMP	WSS – Urban Water Component	2009	18,00	x
3.	Mozambique	P-MZ-E00-003	OWAS2	URBAN WATER SUPPLY, SANITATION AND INSTI	COMP	Urban WSS	2002	19,45	100
4.	Ethiopia	P-ET-E00-005	OWAS2	HARAR WATER SUPPLY & SANITATION PROJECT	COMP	Urban Water	2002	19,23	100
5.	Ghana	P-GH-E00-008	AWTF	IMPROVED SANITATION AND WATER SUPPLY SERVICES	COMP	WSS – Urban Water Component	2009	1,75	100
6.	Tanzania	P-TZ-E00-003	OWAS2	DAR ES SALAM WATER SUPPLY & SANITATION	CLSD	Urban WSS	2001	33,99	100
7.	Tanzania	P-TZ-EA0-008	OWAS2	MONDULI DISTRICT WATER PROJECT	CLSD	WSS – Urban Water Component	2003	15,30	100
8.	Mauritania	P-MR-EA0-007	OWAS2	PROJET D'AEPA DE NOUAKCHOTT I and II	CLSD	Urban Water	2008	19,14	100
<b>Urban Sanitation (7)</b>									
1.	Cameroon	P-CM-EB0-003	OWAS1	PROJET D'ASSAINISSEMENT DE YAOUNDÉ(PADY)	CLSD	Urban Sanitation	2005	21,72	100
2.	Morocco	P-MA-E00-006	OWAS2	NEUVIEME PROJET D'APPROVISIONNEMENT AN EAU	COMP	WSS - Urban Sanitation Component	2006	71,57	93
3.	Senegal	P-SN-E00-002	OWAS1	ASSAINISSEMENT DE LA VILE DE DAKAR	CLS	Urban Sanitation	2001	11,87	100
4.	Congo CG	P-CG-E00-002	OWAS1	ASSAINISSEMENT BRAZZAVILLE ET POINTE-NOIRE	COMP	Urban Sanitation	2009	12,75	94
5.	Mauritius	P-MU-EB0-005	OWAS2	PLAINES WILHEMS SEWERAGE PROJECT- STAGE 1	COMP	Urban Sanitation	2007	7,34	100
6.	Kenya	P-KE-E00-005	OWAS2	WATER SERVICES BOARDS SUPPORT PROJECT	COMP	WSS – Urban Water Component	2007	34,17	100
7.	Comoros	P-KM-EA0-001	OWAS2	PROJET D'EAU POTABLE ET D'ASSAINISSEMENT	COMP	WSS – Urban Water Component	2009	1,77	100



No	Country	SAP code	Division	Project Name	Status	Group	Approval Year	Net Loan (UA Million)	Disb. Rate
<b>Rural Water Supply and Sanitation (16)</b>									
1.	Burundi	P-BI-EAO-004	OWAS2	PROJET DE REHABILITATION ET D'EXTENSION	COMP	RWSS	2005	12,00	94
2.	Senegal	P-SN-E00-003	OWAS1	1° SOUS-PROGRAMME AEP/ MILIEU RURAL	CLSD	RWSS	2005	24,92	100
3.	Ghana	P-GH-E00-003	OWAS1	RURAL WATER AND SANITATION PROGRAMME	COMP	RWSS	2004	9,82	100
4.	Zambia	P-ZM-E00-003	OWAS2	CENTRAL PROV. RURAL WATER/SANITATION	CLSD	RWSS	2000	10,87	100
5.	Zambia	P-ZM-E00-009	OWAS2	RURAL WATER SUPPLY & SANITATION PROGRAM	COMP	RWSS	2006	15,00	100
6.	Rwanda	P-RW-E00-010	OWAS2	RURAL WATER SUPPLY & SANITATION PROGRAM I	COMP	RWSS	2003	9,25	98%
7.	Burkina Faso	P-BF-E00-008	OWAS1	AEP/ EN MILIEU RURAL DANS QUATRE REGIONS (CASCADES, CENTRE-OUE)	COMP	RWSS	2007	20,00	94
8.	Mauritania	P-MR-EAO-005	OWAS2	PROJET D'AEP/ EN MILIEU RURAL DANS LA ZONE MERIDIIONALE	COMP	RWSS	2006	9,70	81
9.	Uganda	P-UG-E00-005	OWAS2	RURAL WATER SUPPLY & SANITATION PROGRAM	CLSD	RWSS	2005	40,00	100
10.	Uganda	P-UG-E00-011	OWAS2	WATER SUPPLY AND SANITATION PROGRAMME	COMP	WSS	2011	40,00	93
11.	Zimbabwe	P-ZW-E00-002	OWAS2	URGENT WATER SUP. & SAN. REHABILITATION (including Suppl)	COMP	WSS	2011	30,84	100
12.	Chad	P-TD-EAO-001	OWAS1	PROGRAMME D'ALIMENTATION EN EAU POTABLE ET D'ASSAINISSEMENT	COMP	WSS	2006	11,62	100
13.	Mali	P-ML-EAO-004	OWAS1	PROJET AEP/ EN MILIEU RURAL DANS LES REGIONS DE GAO, KOULIKORO ET SEGOU	COMP	RWSS	2008	22,00	78
14.	Rwanda	P-RW-E00-005	OWAS2	DEUXIEME SOUS-PROGRAMME D'AEP/ EN MILIEU RURAL	COMP	RWSS	2009	9,96	100
15.	Tanzania	P-TZ-EAO-009	OWAS2	RURAL WSS PROGRAM Phase I	COMP	RWSS	2006	45	100
16.	Ethiopia	P-ET-E00-006	OWAS2	RURAL WSS PROGRAM	CLSD	RWSS	2005	43,61	100

No	Country	SAP code	Division	Project Name	Status	Group	Approval Year	Net Loan (JA Million)	Disb. Rate
<b>Water Sector Adjustment (1)</b>									
1.	Morocco	P-MA-E00-004	OWAS2	PROGRAMME D'AJUSTEMENT SECTORIEL DE L'EAU	COMP	Water	2003	188.34	100
<b>Agricultural Water Management (9)</b>									
1.	Gambia	P-GM-AA0-007	OSAN2	FARMER MANAGED RICE IRRIGATION PROJECT	COMP	AWM	2005	5.00	100
2.	Kenya	P-KE-AAZ-001	OSAN1	KIMIRA-OLUCH SMALLHOLDER IRRIGATION DEVELOPMENT PROJECT	COMP	AWM	2006	22.98	99
	Kenya	P-KE-AAD-004	OSAN3	GREEN ZONES DEVELOPEMENT SUPPORT PROJECT	COMP	AWM	2005	25.03	100
3.	Madagascar	P-MG-A00-001	OSAN1	PROJET DE REHABILITATION DU PERIMETRE IRRIGUE DE MANOMBO	COMP	AWM	2007	9.06	100
4.	Mali	P-ML-AAC-005	OSAN2	PROJET INTENSIFICATION BAGUINEDA	CLSD	AWM	2005	14.92	100
5.	Nigeria	P-NG-AA0-027	OSAN2	SUPPORT TO THE NATIONAL PROGRAMME FOR FOOD SECURITY IN EKITI	COMP	AWM	2006	22.00	59
6.	Rwanda	P-RW-A00-007	OSAN1	PROJET D'APPUJ AU DEVELOPEMENT AGRICOLE BUGESERA	COMP	AWM	2006	9.96	100
7.	Rwanda	P-RW-AAE-004	OSAN1	LIVESTOCK INFRASTRUCTURE SUPPORT PROGRAMME - LISIP	COMP	AWM	2011	21.81	100
8.	Senegal	P-SN-A00-001	OSAN2	PROJET D'APPUJ AU DEVELOPEMENT RURAL EN CASAMANCE (PADERCA)	COMP	AWM	2005	19.32	100
<b>TOTAL PROJECT EVALUATION REPORTS (41)</b>									

## Annex 5: Guidance for Synthesizing the Findings of the Cluster Evaluations

Criteria /sub-criteria	Highly Unsatisfactory	Unsatisfactory	Satisfactory	Highly Satisfactory
<b>Relevance</b>	One or two of the sub-criteria (alignment of objectives/project design) are rated highly unsatisfactory, and none is rated satisfactory or higher.	One or more of the sub-criteria (alignment of objectives/project design) are rated unsatisfactory, but none is rated highly unsatisfactory or highly satisfactory.	One or more of the sub-criteria (alignment of objectives/project design) are rated satisfactory, but none is rated unsatisfactory or less.	Both sub-criteria (alignment of objectives/project design) are rated highly satisfactory.
Extent to which objectives of projects are aligned with the Bank's CSP, applicable Bank sector strategies, the country's development strategies and the beneficiary needs	Serious weaknesses across the alignment of the objectives: Objectives of less than 40% of projects have no shortcomings, and the rest with major shortcomings in their alignment with: i) the Bank's CSP, ii) applicable Bank sector strategies, iii) the country's development strategies, and iv) the beneficiary needs.	Some major but non-fatal shortcomings: Objectives of 40%-75% of projects have no shortcomings, and the rest with major shortcomings in their alignment with: i) the Bank's CSP, ii) applicable Bank sector strategies, iii) the country's development strategies, and iv) the beneficiary needs.	Good alignment with minor shortcomings but of no serious consequences: Objectives of at least 75% of projects have no shortcomings, and the remaining projects with minor shortcomings in their alignment with: i) the Bank's CSP, ii) applicable Bank sector strategies, iii) the country's development strategies, and iv) the beneficiary needs.	Objectives of all projects have no shortcomings (of any consequences) in their alignment with: i) the Bank's CSP, ii) applicable Bank sector strategies, iii) the country's development strategies, and iv) the beneficiary needs.
Extent to which design of projects is conducive to achievement of project results.	Serious shortcomings across the board on project design: Design of less than 40% of projects is conducive to achieving projects' results. The original design of most projects (more than 60%) was either weak or lost its relevance during implementation; major adjustments to the scope, implementation arrangements or technical solutions were required during implementation, but these were done with substantial delays which negatively affected the achievement of the intended outcomes and outputs.	Some major but non-fatal shortcomings: Design of 40%-75% of projects is conducive to achieving projects' results. The original design of 60%-25% of projects was either weak or lost its relevance during implementation; major adjustments to the scope, implementation arrangements or technical solutions were required during implementation, but these were done with substantial delays which negatively affected the achievement of the intended outcomes and outputs.	Good design with minor shortcomings but of no serious consequences: Design of more than 75% of projects is fully conducive to achieving projects' results. More than 75% of projects had a solid original design, remained appropriate throughout implementation, and did not require any adjustments to the scope, implementation arrangements or technical solutions were required to ensure the achievement of the intended outcomes and outputs. The design of the remaining (25% and less) is largely conducive with minor shortcomings to achieving projects results.	Design of all projects is fully conducive to achieving projects' results. The original design was solid and remained appropriate throughout implementation; no adjustments to the scope, implementation arrangements or technical solutions were required to ensure the achievement of the intended outcomes and outputs.

Criteria /sub-criteria	Highly Unsatisfactory	Unsatisfactory	Satisfactory	Highly Satisfactory
<b>Effectiveness</b>	<b>One or more of the sub-criteria are rated highly unsatisfactory.</b>	<b>One or more of the sub-criteria are rated unsatisfactory, but none is rated highly unsatisfactory</b>	<b>One or more of the sub-criteria are rated satisfactory, but none is rated moderately satisfactory or less.</b>	<b>All sub-criteria are rated highly satisfactory.</b>
Extent to which output targets have been achieved	Serious shortcomings across output achievement: Output targets of less than 40% of projects were achieved or were found to be on track to be reached by the end of the projects and in accordance with quality standards.	Output targets of 40%-75% of projects were achieved or were found to be on track to be reached by the end of the projects and in accordance with quality standards.	Output targets of more than 75% of projects were achieved or are considered on track to be reached by the end of the projects and in accordance with quality standards.	Output targets of all projects were achieved or are considered on track to be reached by the end of the projects and in accordance with quality standards.
Extent to which intended outcomes have been achieved	Serious shortcomings across outcome achievement: Intended project outcomes of 40% or less of projects were achieved or are likely to be achieved based on the latest value of the outcome indicators and the analysis of other relevant exogenous risks/factors and assumptions.	Intended project outcomes of 40%-75% of projects were achieved or are likely to be achieved based on the latest value of the outcome indicators and the analysis of other relevant exogenous risks/factors and assumptions.	Intended project outcomes of more than 75% of projects were achieved or are likely to be achieved based on the latest value of the outcome indicators and the analysis of other relevant exogenous risks/factors and assumptions.	Intended project outcomes of all projects were achieved/ exceeded targets or are likely to be achieved/ exceed targets (plausibility) based on the latest value of the outcome indicators and the analysis of other relevant exogenous risks/factors and assumptions.
<b>Efficiency</b>				
Economic performance (EIRR)	Serious shortcomings across the board on economy performance: The economic performance of more than 90% of projects is highly unsatisfactory.	Economic performance of 40%-75% of projects is unsatisfactory	Economic performance of 75%-90% of projects is satisfactory.	Economic performance of more than 90% of projects is highly satisfactory.
Financial performance (FIRR)	Serious shortcomings across the board on financial performance: Actual financial performance of more than 90% of projects is highly unsatisfactory.	Financial economic performance of 40%-75% of projects is unsatisfactory.	Financial performance of 75%-90% of projects is satisfactory.	Financial performance of more than 90% of projects is highly satisfactory.
Timeliness	Serious shortcomings across the board on timeliness: Actual implementation time of less than 40% of projects is equal to or lower than the planned implementation time.	Actual implementation time of 40%-75% of projects is equal to or lower than the planned implementation time.	Actual implementation time of more than 75% to 90% of projects is at equal to or lower than the planned implementation time.	Actual implementation time of more than 90% projects is lower than the planned implementation time, and the remaining are equal to the planned implementation time.

Criteria /sub-criteria	Highly Unsatisfactory	Unsatisfactory	Satisfactory	Highly Satisfactory
Implementation Progress	Serious shortcomings across the board on implementation progress: The average rating of applicable IP criteria for all projects is less than 1.5. Vast majority of dimensions of implementation processes have not been satisfactory which has jeopardized the achievement of project results.	The average rating of applicable IP criteria ratings for all projects varies from 1.5 to less than 2.5. Some dimensions of implementation processes have not been satisfactory which has jeopardized the achievement of some project results.	The average rating of IP criteria of all projects from 2.5 to less than 3.5. The implementation processes for all projects have for the most part been satisfactory and have for the most part led to the anticipated results. However, a few dimensions of implementation processes have not been satisfactory, which has jeopardized the achievement of a few project results.	The average rating of IP criteria of all projects is from 3.5 to 4.  The implementation processes for all projects have for the most part been highly satisfactory and have led to the anticipated results.
<b>Sustainability</b>				
Technical Soundness	Serious technical weaknesses across projects: It is highly likely that the achievement of the results of all projects will be adversely affected by factors related to the technical design of the project.	It is likely that the achievement of the results of 90%-60% of projects will be adversely affected by factors related to the technical design of the project.	It is likely that the achievement of the results of 60% to 20% of projects will be adversely affected by factors related to the technical design of the project.	It is highly likely that the achievement of the results of less than 20% of projects will be adversely affected by factors related to the technical design of the project.
Financial and Economic Viability	Less than 25% of projects have put in place mechanisms for economic and financial sustainability, and the flow of benefits associated with the project are not expected to continue after completion.	25%-75% of projects have a few mechanisms for economic and financial sustainability, but they are not expected to be sufficient to ensure the continued flow of benefits associated with the project after completion.	75%-90% of projects have sufficient mechanisms for economic and financial sustainability that are deemed sufficient to ensure the continued flow of benefits associated with the project after completion.	Almost all projects (more than 90%) have in place robust mechanisms for economic and financial sustainability that are very likely to ensure the continued flow of benefits associated with the project after completion.
Institutional sustainability and strengthening of capacities	Less than 25% of projects contributed to strengthening institutional capacities in the concerned sector / area of intervention. Parallel systems had to be used intensively. Country systems and capacities are very weak and not able to ensure the continued flow of benefits associated with the project after completion.	25%-75% of projects contributed to strengthening institutional capacities in the concerned sector / area of intervention. Parallel systems had to be used. Country systems and capacities remain weak and are deemed insufficient to ensure the continued flow of benefits associated with the project after completion.	75% to 90% of projects contributed to strengthening institutional capacities in the concerned sector / area of intervention. Country systems and capacities are very good and deemed sufficient to ensure the continued flow of benefits associated with the projects after completion.	Almost all projects (more than 90%) were critical in building or strengthening institutional capacities in the concerned sector / area of intervention. Country systems and capacities are excellent and sufficient to ensure the continued flow of benefits associated with the project after completion.

Criteria /sub-criteria	Highly Unsatisfactory	Unsatisfactory	Satisfactory	Highly Satisfactory
Political and governance environment	<p>It is highly likely that political and governance factors could severely affect the results of all projects. The project results could be derailed by a high degree of political instability, fragility, uncertainty or transition. The country (ies) may be undergoing conflict or may have recently emerged from conflict, and the political context is fragile. The government's development priorities are unclear. Anti-corruption and public sector ethics regulations do not exist or are not enforced.</p>	<p>It is likely that the political and governance factors could significantly affect the results of 90%-50% of projects. The projects' results could be affected by significant political uncertainty or transition. This may include post-conflict countries that have achieved some level of political stability, or countries that enjoy a period of relative stability but have a history of endemic political upheaval with negative effects on the operational engagement. Likewise, the government has taken initial steps to improve transparency, accountability and participation, but with limited impact.</p>	<p>It is likely that political and governance factors could adversely affect the results of 50% to 10% of projects. However, the political context is relatively stable. The government has a clear set of development priorities, which are generally supported across the political spectrum and are consistent with the program. Adequate anti-corruption and public sector ethics regulations exist and are generally enforced.</p>	<p>It is likely that political factors could adversely affect the results of less than 10% of projects. However, the political and governance situations does not, in general, represent a risk to the projects' results due to political stability, consensus on development priorities, a strong anti-corruption and ethics environment and high levels of transparency, accountability and participation. All relevant political decisions (including approval of laws and regulations) have been taken and cannot be reversed easily.</p>
Ownership and sustainability of partnerships	<p>Less than 25% of projects have been effective in involving the relevant stakeholders. However, there is generally neither any sense of ownership amongst the beneficiaries nor any partnerships with relevant stakeholders to ensure the continued maintenance and management of project outputs.</p>	<p>25%-75% of projects have been effective in involving the relevant stakeholders and in promoting a minimal sense of ownership amongst the beneficiaries. Overall partnerships with relevant stakeholders put in place are not sufficient to ensure the continued maintenance and management of project outputs.</p>	<p>75%-90% of projects have been effective at involving most stakeholders and promoting a sense of ownership amongst the beneficiaries. Partnerships with relevant stakeholders have been put in place and are deemed sufficient to ensure the continued maintenance and management of projects' outputs.</p>	<p>Almost all projects (more than 90%) have been effective (or higher) in involving all the relevant stakeholders, and in promoting a strong sense of ownership amongst the beneficiaries. Effective partnerships with relevant stakeholders (e.g., local authorities, civil society organizations, private sector) have been put in place to ensure the continued maintenance and management of projects' outputs.</p>
Environmental and social sustainability	<p>ESMPs have been implemented in less than 25% of projects; institutional capacity and funding are not available to ensure the environmental and social sustainability of the operation.</p>	<p>ESMPs have been implemented with major delays or in an unsatisfactory manner for 25%-50% of projects. Institutional capacity and funding are deemed insufficient to ensure the environmental and social sustainability of the operation.</p>	<p>ESMPs have been implemented in a timely and satisfactory manner for more than half of projects; institutional capacity and funding are deemed sufficient to ensure the environmental and social sustainability of the operation.</p>	<p>ESMPs have been implemented in a timely and satisfactory manner for all projects; institutional capacity is strong and there is sufficient funding to ensure the environmental and social sustainability of the operation.</p>
Resilience to exogenous factors and risk management	<p>Almost all projects' (90% or more) achievements depend on exogenous factors and/or have significant risks to achieving the intended results.</p>	<p>Achievements of less than 90% to 30% of projects depend on exogenous factors and/or have high risks to achieving the intended results.</p>	<p>Achievements of 10%-30% of projects depend marginally on exogenous factors or/and have low risks to achieving the intended results.</p>	<p>Less than 10% of projects' achievements depend marginally on exogenous factors or/and have insignificant risks to achieving the intended results.</p>

## Annex 6: Data Tables

Table A6.1: Portfolio distribution by region

Region	2005-2010		2011-2016		Total	
	Net Amount (UA million)	Percentage	Net Amount (UA million)	Percentage	Net Amount (UA million)	Percentage
East	464.33	29.6%	814.41	37.98%	1,278.74	34.46%
West	372.36	23.8%	440.94	20.57%	813.30	21.92%
North	288.19	18.4%	312.54	14.58%	600.73	16.19%
South	138.48	8.8%	393.84	18.37%	532.32	14.35%
Central	200.67	12.8%	168.16	7.84%	368.83	9.94%
Multinational	102.61	6.5%	14.18	0.66%	116.80	3.15%
<b>Total</b>	<b>1,566.64</b>	<b>100.00%</b>	<b>2,144.07</b>	<b>100.00%</b>	<b>3,710.72</b>	<b>100.00%</b>

Source: Calculated by IDEV, based on the Bank's ERP Database (SAP).

Table A6.2: Enabling/inhibiting factors internal and external to the Bank

Project cycle step	Internal enabling/inhibiting factors	External enabling/ inhibiting factors
<b>Needs assessment (Selectivity)</b>	<ul style="list-style-type: none"> <li>■ Availability of preparatory studies (see efficiency)</li> <li>■ Bank's support to government to find resources for preparatory studies</li> <li>■ Participatory approach during the appraisal and use of local leaders to accurately assess needs</li> <li>■ Level of training of beneficiaries and alignment of technical solutions according to those capacities</li> </ul>	<ul style="list-style-type: none"> <li>■ Government capacities to assess needs and find resources to perform preparatory studies</li> </ul>
<b>Project design (Efficiency + Leverage)</b>	<ul style="list-style-type: none"> <li>■ Comprehensive approach (WSS and AWM) and integration of the value chain (AWM)</li> <li>■ Bank staff proactivity for leveraging, bringing partners for complementary (soft) components, and to anticipate problems</li> <li>■ One-size-fits-all approach in the appraisal phase is not appropriate given the diversity of country contexts</li> <li>■ Water tariffs (see leverage and sustainability)</li> </ul>	<ul style="list-style-type: none"> <li>■ Government capacities to give orientation to and coordinate development aid among development partners</li> <li>■ Leveraging depend on stakeholders' willingness and agenda</li> </ul>
<b>Partnerships / project implementation (Partnerships)</b>	<ul style="list-style-type: none"> <li>■ Private sector capacity to implement projects (when externalized by the country)</li> <li>■ Private sector capacities to support maintenance and sustainability</li> <li>■ Private sector to provide inputs needed along the agriculture value chain (including credit)</li> <li>■ Community involvement</li> </ul>	<ul style="list-style-type: none"> <li>■ Government capacities to support the private sector</li> </ul>
<b>Monitoring &amp; Evaluation (Analytic capacity + Managing for Developing Results)</b>	<ul style="list-style-type: none"> <li>■ Monitoring tools in place since inception, supervision missions, mid-term review, drawing lessons learned.</li> <li>■ Sharing of lessons learned and follow-up on recommendations during and across projects</li> </ul>	<ul style="list-style-type: none"> <li>■ Government capacities to monitor projects</li> <li>■ Government capacities to provide sustainable conditions</li> </ul>
<b>Other country specific context broad factors</b>	<ul style="list-style-type: none"> <li>■ Institutional, policy and regulatory framework as well as governance, transparency, and legal system to enforce legislation</li> <li>■ Human resources: Turnover and brain drain, training (e.g., engineers), retiring public servants not replaced (structural policies)</li> </ul>	



**Table A6.3:** Estimation of new people having gained access to drinking water supply and improved sanitation services through RWSS projects

Project	People having gained access to water supply			People having gained access to improved sanitation		
	Planned	Actual	Achievement ratio	Planned	Actual	Achievement ratio
1. Burundi Rural Water Infrastructure Rehabilitation and Extension Project	218 000	282 000	129%			
2. Senegal Rural Water Supply and Sanitation Initiative in Senegal – Launch Sub-Program	273 500	276 890	101%	172 000	116 300	68%
3. Ghana Rural WSS Program	246 800	381 869	155%	376 000	107 640	29%
4. Zambia Central Provinces RWSS Project	583 100	465 650	80%	177 480	75 540	43%
5. <b>Zambia National RWSS Program</b>	<b>871 877</b>	643 450	74%	<b>945 660</b>	243 309	26%
6. Rwanda National RWSS Sub-Program I	270 000	495 623	184%	15 000	16 200	108%
7. Burkina Faso RWSS Project in the Cascades, West Central, South Central and Sahel Regions	525 300	600 000	114%	281 500	166 100	59%
8. Mauritania Drinking RWSS in the South	41 000	61 560	150%	93 000	141 984	153%
9. <b>Uganda RWSS Program</b>	3 900 000	3 165 182	81%	5 800 000	<b>1 917 000</b>	33%
10. <b>Uganda WSS Program</b>	2 400 000	<b>1 578 847</b>	66%	2 400 000	<b>1 249 445</b>	52%
11. Zimbabwe Urgent WSS Rehabilitation	4 150 000	2 400 000	58%	4 150 000	2 400 000	58%
12. Chad National RWSS Program	363 453	350 000	96%	167 000	98 000	59%
13. Mali Drinking WSS Project in Gao, Koulikoro and Segou Regions	442 000	460 000	104%	124 500	109 000	88%
14. Rwanda National RWSS Sub-Program II	642 000	711 950	111%	150 000	155 000	103%
15. Tanzania RWSS Program I						
16. Ethiopia WSS Program	2 386 749	2 450 000	103%			
<b>TOTAL</b>	<b>17 313 779</b>	<b>14 323 021</b>	<b>83%</b>	<b>14 852 140</b>	<b>6 795 518</b>	<b>46%</b>

Source: PARs, PCRs and PERs and Evaluation Team estimations

■ Data from AHWS is different. Evidence from PCRs, national sector performance reports (SPRs) and other independent evaluations indicate that for 3 of the 16 RWSS projects, target and/or actual numbers presented by IDEV differed significantly from AHWS own assessment (See table 14, point 1 of this annex)

**Table A6.4:** RWSS physical sanitation facilities' achievement

Project	RWSS Physical sanitation achievement ratio	
	Compared to planned	Excluding HH sanitation non financed by AfDB fund
1. Burundi Rural Water Infrastructure Rehabilitation and Extension Project	101%	101%
2. Senegal Rural Water Supply and Sanitation Initiative in Senegal – Launch Sub-Program	91%	91%
3. Ghana Rural WSS Program	55%	65%
4. Zambia Central Provinces RWSS Project	172%	300%
5. <b>Zambia National RWSS Program</b>	8%	16%
6. Rwanda National RWSS Sub-Program I	106%	106%
7. Burkina Faso RWSS Project in the Cascades, West Central, South Central and Sahel Regions	64%	-
8. <b>Mauritania Drinking RWSS in the South</b>	184%	75%
9. Uganda RWSS Program	-	-
10. Uganda WSS Program	58%	58%
11. Zimbabwe Urgent WSS Rehabilitation	100%	100%
12. Chad National RWSS Program	47%	47%
13. Mali Drinking WSS Project in Gao, Koulikoro and Segou Regions	82%	82%
14. Rwanda National RWSS Sub-Program II	102%	102%
15. Tanzania RWSS Program I	-	-
16. Ethiopia WSS Program	93%	93%

Source: PARs, PCRs and PERs.

**Table A6.5:** RWSS households' latrines achievement and approaches used for Households latrines in AfDB-funded interventions

Project	RWSS households' latrines achievement			AfDB support strategy used for households latrines in AfDB-funded interventions
	Planned	Actual	Achievement ratio	
1. Burundi Rural Water Infrastructure Rehabilitation and Extension Project				
2. Senegal Rural Water Supply and Sanitation Initiative in Senegal – Launch Sub-Program	17 100	16 162	95%	Financing approach
3. Ghana Rural WSS Program	20 517	7 294	36%	Financing approach
4. Zambia Central Provinces RWSS Project	30 600	13 347	44%	Combined more than one approach
5. <b>Zambia National RWSS Program</b>	<b>(440 000)</b>	-	-	Community-based behavior change approach
6. Rwanda National RWSS Sub-Program I	2 000	2 120	106%	Financing approach
7. Burkina Faso RWSS Project in the Cascades, West Central, South Central and Sahel Regions	20 100	9 387	47%	Financing approach
8. Mauritania Drinking RWSS in the South	3 900	12 446	319%	Combined more than one approach
9. <b>Uganda RWSS Program</b>	<b>(950 000)</b>	-	-	Community-based behavior change approach
10. <b>Uganda WSS Program</b>	-	-	-	Community-based behavior change approach
11. Zimbabwe Urgent WSS Rehabilitation				
12. Chad National RWSS Program				
13. Mali Drinking WSS Project in Gao, Koulikoro and Segou Regions	19 710	13 154	67%	Financing approach
14. Rwanda National RWSS Sub-Program II	16 000	17 000	106%	Financing approach
15. Tanzania RWSS Program I				
16. Ethiopia WSS Program				
<b>TOTAL</b>	<b>129 927 (*)</b>	<b>90 910</b>	<b>70%</b>	

(\*) Excluded Zambia National RWSS and Uganda RWSSP that did not report actual data.

Source: PAFs, PCFs and PERS.

**Table A6.6:** Estimation of new people having gained access to drinking water supply and improved sanitation services through UWSS projects

Project	People having gained access to water supply			People having gained access to improved sanitation		
	Planned	Actual	Achievement ratio	Planned	Actual	Achievement ratio
1. Morocco Eighth Drinking WSS Project	1 970 000	1 812 400	92%	30 000	30 000	100%
2. Mozambique Niassa Provincial Towns Water and Sanitation Project	171 146	136 000	79%			
3. Mozambique Urban WSS and Institutional Support Project	246 550	338 772	137%			
4. Ethiopia Harar WSS Project	250 000	200 762	80%			
5. Ghana Improved Sanitation and Water Supply Services	25 000	10 000	40%	27 900	19 300	69%
6. Tanzania Dar es Salam WSS	2 855 000	1 691 290	59%	3 400 000	476 000	14%
7. Tanzania Monduli District Water Project	109 000	109 000	100%			
8. Mauritania Nouakchott City Drinking Water Project	710 000	710 000	100%			
9. Cameroon Yaoundé Sanitation Project				517 372	510 900	99%
10. Morocco Ninth Drinking WSS Project	350 000	317 800	91%	300 000	350 000	117%
11. Senegal Dakar City Sanitation Project				542 500	205 960	38%
12. Congo Brazzaville and Pointe Noire Sanitation Project				800 000	743 000	93%
13. Mauritius Plaines Willem's Sewerage Project- Stage 1				15 828	13 556	86%
14. Kenya Water Services Boards Support Project	1 085 000	790 823	73%			
15. The Comoros WSS Project	180 000	185 321	103%	20 000	7 041	35%
<b>TOTAL</b>	<b>7 951 696</b>	<b>6 302 168</b>	<b>79%</b>	<b>5 653 600</b>	<b>2 355 757</b>	<b>42%</b>

Source: PARs, PCRs and PERs and Evaluation Team estimations.

For Tanzania Dar es Salaam UWSS, AHWS proposed to remove the project as there was no target beneficiary data in the project documents for either the AfDB or the complementary World Bank projects (See table 14, point 2 of this annex).

Table A6.7: UWSS physical sanitation facilities' achievement

Project	UWSS Physical sanitation achievement ratio		AfDB support strategy used for households latrines in AfDB-funded interventions
	Compared to planned	Excluding HH sanitation non financed by AfDB funds	
1. Morocco Eighth Drinking WSS Project	-	-	
2. Mozambique Niassa Provincial Towns Water and Sanitation Project	80%	133%	Community-based behavior change approach
3. Mozambique Urban WSS and Institutional Support Project	30%	30%	Community-based behavior change approach
4. Ethiopia Harar WSS Project	14%	14%	
5. Ghana Improved Sanitation and Water Supply Services	92%	117%	Market-based approach
6. Tanzania Dar es Salam WSS	92%	92%	
7. Tanzania Monduli District Water Project	-	-	Community-based behavior change approach
8. Mauritania Nouakchott City Drinking Water Project	-	-	
9. Cameroon Yaoundé Sanitation Project	73%	73%	
10. Morocco Ninth Drinking WSS Project	71%	71%	
11. Senegal Dakar City Sanitation Project	86%	86%	
12. Congo Brazzaville and Pointe Noire Sanitation Project	93%	93%	Financing approach
13. Mauritius Plaines Wilhems Sewerage Project- Stage 1	71%	83%	Financing approach
14. Kenya Water Services Boards Support Project <sup>74</sup>	50%	50%	
15. The Comoros WSS Project	46%	46%	

Source: PARs, PCRs and PERs.

**Table A6.8:** Selected AWM outcomes achievement

Project	Smallholder farmers having gained access to water for irrigation or livestock			Hectares irrigated laid out and developed			Hectares of land protected		
	Planned	Actual	Achievement ratio	Planned	Actual	Achievement ratio	Planned	Actual	Achievement ratio
1. Gambia Farmer Managed Rice Irrigation Project	2 300	1 254	54.5%	1 186	1 200	101.2%			
2. Kenya Kimira-Oluch Smallholder Irrigation Development Project	2 950	500	16.9%	1 474	1 091	74.0%			
3. Kenya Green Zones Development Support Project									
4. Madagascar Manombo Irrigation Area Rehabilitation Project	8 000	2 000	25.0%	5 400	3 896	72.1%			
5. Mali Baguineda Irrigation Scheme Intensification Project				789	367	46.5%	205	217	105.9%
6. Nigeria Support to the National Program for Food Security in Ekiti, Ondo and Cross River States (NPPS)									
7. Rwanda Bugesera Agricultural Development Support Project	3 400	1 680	49.4%	850	500	58.8%	5 000	5 442	108.8%
8. Rwanda Livestock Infrastructure Support Program (*)	725	680	93.8%	9 000	5 128	57.0%			
9. Senegal Casamance Rural Development Support Project				200	200	100.0%	15 000	14 000	93.3%
<b>TOTAL</b>	<b>17 375</b>	<b>8 564</b>	<b>35.2%</b>	<b>18 899</b>	<b>12 765</b>	<b>65.5%</b>	<b>20 205</b>	<b>19 659</b>	<b>97%</b>

(\*) Area of farms fed with cattle water.

Source: : PAFs, PCR, PFRs, stakeholder interview.

**Table A6.9:** Water Schemes functionality

Proportion of non-functioning water schemes by selected country <sup>75</sup>						
Country	Source 1	Source 2	Source 3	Source 4	Source 5	Average
Ethiopia	31%		25% <sup>76</sup>		25%	35%
DRC	35%		56%		67%	51%
Kenya	33%				30%	31%
Tanzania	50%		40% <sup>77</sup>		43%	44%

Proportion of non-functioning water schemes by selected country <sup>15</sup>						
Mozambique	32%	—			25%	28%
Uganda	14%		16% and 19%		20%	16%
Zambia	35%				32%	33%
Nigeria		40% <sup>79</sup>			50%	45%
Madagascar					10%	10%
Liberia			48%		31%	39%
Malawi			33%		40%	36%
Sierra Leone			34%		65%	47%
Angola					30%	30%
Benin					22%	22%
Burkina Faso					25%	25%
Cameroon					25%	25%
Côte d'Ivoire					65%	65%
Guinea					20%	20%
Mali					34%	34%
Niger					35%	35%
Zimbabwe					30%	30%
					<b>Average</b>	<b>31%</b>
					<b>RSWN 2009</b>	<b>36%</b>
					<b>RSWN 2010<sup>80</sup></b>	<b>34%</b>

**Source 1:** SNV Case studies on functionality of Rural Water Supply Services in Africa, WASH writeshop, Addis Ababa, Ethiopia - March 2013.

**Source 2:** Water and Environment Sector Performance, 2016.

**Source 3:** World Bank WASH Diagnostic, 2017, A Wake Up Call - Nigeria Water Supply, Sanitation, and Hygiene Poverty Diagnostic.

**Source 4:** Improving value for money and sustainability in WASH programmes (VFM-WASH) - Regional assessment of the operational sustainability of water and sanitation services in Sub-Saharan Africa, October 2015 - Oxford Policy Management.

**Source 5:** Rural Water Supply Network (RWSN) 2009, Handpump Data, Selected Countries in Sub-Saharan Africa.

**Table A6.10:** Economic internal rate of return (EIRR) at ex ante, completion and ex post

Project	PAR	PCR	PER	Variation from PAR	Opportunity Cost of Capital
<b>Urban Water Supply and Sanitation</b>					
1. Morocco Eighth Drinking WSS Project	23.5		24.4	+0.90	10%
2. Mozambique Niassa Provincial Towns Water and Sanitation Project	14	12.4	20	+6.00	12%
3. Mozambique Urban WSS and Institutional Support Project	18.13	28	24	+5.87	10%
4. Ethiopia Harar WSS Project	23	27.65		+4.65	
5. Ghana Improved Sanitation and Water Supply Services					
6. Tanzania Dar es Salam WSS	21	2.92	2.92	-18.08	8%
7. Tanzania Monduli District Water Project	33	45		+12.00	
8. Mauritania Nouakchott City Drinking Water Project	16.4		15.9	-0.50	
9. Cameroon Yaoundé Sanitation Project		27	27.7		12%
10. Morocco Ninth Drinking WSS Project	14.8	15	27	+12.20	10%
11. Senegal Dakar City Sanitation Project	25.17				
12. Congo Brazzaville and Pointe Noire Sanitation Project					
13. Mauritius Plaines Willems Sewerage Project- Stage 1	12.41	-12	6	-6.41	10%
14. Kenya Water Services Boards Support Project	20.5	21.84	20	-0.50	12%
15. The Comoros WSS Project	19.62	18.09		-1.53	
<b>Rural Water Supply and Sanitation</b>					
1. Burundi Rural Water Infrastructure Rehabilitation and Extension Project	26.75		29	+2.25	10%
2. Senegal Rural Water Supply and Sanitation Initiative in Senegal – Launch Sub-Program	27		15.8	-11.20	12%
3. Ghana Rural WSS Program	21.22	28.71	40	+18.78	-
4. Zambia Central Provinces RWSS Project	9	14	24	+15.00	10%
5. Zambia National RWSS Program	26	21		-5.00	-
6. Rwanda National RWSS Sub-Program I	22	27	17.8	-4.20	12%



Project	PAR	PCR	PER	Variation from PAR	Opportunity Cost of Capital
7. Burkina Faso RWSS Project in the Cascades, West Central, South Central and Sahel Regions			44.8		12%
8. Mauritania Drinking RWSS in the South					-
9. Uganda RWSS Program			30		12%
10. Uganda WSS Program	20.2		12	-8.,20	12%
11. Zimbabwe Urgent WSS Rehabilitation	22.05		-		12%
12. Chad National RWSS Program	14.54	13.1	13.34	-1.20	10%
13. Mali Drinking WSS Project in Gao, Koulikoro and Segou Regions	12.67	12.42		-0.25	-
14. Rwanda National RWSS Sub-Program II	24	22.9	34	+10.00	12%
15. Tanzania RWSS Program I					
16. Ethiopia WSS Program					
<b>Agricultural Water Management</b>					
1. Gambia Farmer Managed Rice Irrigation Project	23	26	22	-1.00	12%
2. Kenya Kimira-Oluch Smallholder Irrigation Development Project	13.2		18.18	4.98	10%
3. Kenya Green Zones Development Support Project	13.3		15.96	20.66	12%
4. Madagascar Manombo Irrigation Area Rehabilitation Project	19.7	16	-	-3.70	12%
5. Mali Baguineda Irrigation Scheme Intensification Project	23.25	20.93	14.24	-9.01	10%
6. Nigeria Support to the National Program for Food Security in Ekiti, Ondo and Cross River States (NPFS)	34	19.2		-14.80	
7. Rwanda Bugesera Agricultural Development Support Project	15.2	26	11.2	-4.00	
8. Rwanda Livestock Infrastructure Support Program					
9. Senegal Casamance Rural Development Support Project	15	24		9.00	10%

**Table A6.11:** Financial internal rate of return (FIRR) at ex ante, completion and ex post

Project	PAR	PCR	PER	Variation from PAR	Weighted average Cost of Capital
<b>Urban Water Supply and Sanitation</b>					
1. Morocco Eighth Drinking WSS Project	16.5		22.4	+5.90	5.6%
2. Mozambique Niassa Provincial Towns Water and Sanitation Project	5	4.7	5	0.00	1.525%
3. Mozambique Urban WSS and Institutional Support Project	7.16	20	28	+20.84	4.6%
4. Ethiopia Harar WSS Project	4	3.19		-0.81	3%
5. Ghana Improved Sanitation and Water Supply Services					
6. Tanzania Dar es Salam WSS	9	8.73		-0.27	5.6%
7. Tanzania Monduli District Water Project		8			1.75%
8. Mauritania Nouakchott City Drinking Water Project	3.9		0.33	-3.57	
9. Cameroon Yaoundé Sanitation Project			-		
10. Morocco Ninth Drinking WSS Project			13.5		
11. Senegal Dakar City Sanitation Project					
12. Congo Brazzaville and Pointe Noire Sanitation Project					
13. Mauritius Plaines Willems Sewerage Project- Stage 1	5.75	-15	-8	-13.75	
14. Kenya Water Services Boards Support Project	8.8		7	-1.8	
15. Comoros WSS Project	7.71				
<b>Rural Water Supply and Sanitation</b>					
1. Burundi Rural Water Infrastructure Rehabilitation and Extension Project	17.86	12		-5.86	
2. Senegal Rural Water Supply and Sanitation Initiative in Senegal – Launch Sub-Program			3.43		
3. Ghana Rural WSS Program					
4. Zambia Central Provinces RWSS Project		3			
5. Zambia National RWSS Program					
6. Rwanda National RWSS Sub-Program I			5.9		

Project	PAR	PCR	PER	Variation from PAR	Weighted average Cost of Capital
7. Burkina Faso RWSS Project in the Cascades, West Central, South Central and Sahel Regions					
8. Mauritania Drinking RWSS in the South					
9. Uganda RWSS Program			5		
10. Uganda WSS Program					
11. Zimbabwe Urgent WSS Rehabilitation					
12. Chad National RWSS Program					
13. Mali Drinking WSS Project in Gao, Koulikoro and Segou Regions					
14. Rwanda National RWSS Sub-Program II	15	21	23	+8.00	
15. Tanzania RWSS Program I					
16. Ethiopia WSS Program					
<b>Agricultural Water Management</b>					
1. Gambia Farmer Managed Rice Irrigation Project	19	24	28	+9.00	
2. Kenya Kimira-Oluch Smallholder Irrigation Development Project	12.39				
3. Kenya Green Zones Development Support Project					
4. Madagascar Manombo Irrigation Area Rehabilitation Project					
5. Mali Baguineda Irrigation Scheme Intensification Project			11.39		
6. Nigeria Support to the National Program for Food Security in Ekiti, Ondo and Cross River States (NPFS)		22			
7. Rwanda Bugesera Agricultural Development Support Project		24			
8. Rwanda Livestock Infrastructure Support Program					
9. Senegal Casamance Rural Development Support Project					

Table A6.12: Disbursement profiles

## Disbursement ratio (compared with net approval amount) - by project and disbursement year

Project	Net Approved (M UA)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Urban Water Supply and Sanitation</b>											
1. Morocco Eighth Drinking WSS Project	53.82	1.1%	28.1%	29.5%	18.1%	16.3%	3.7%	3.2%			
2. Mozambique Niassa Provincial Towns Water and Sanitation Project	18.00	0.9%	3.5%	2.4%	10.8%	19.1%	7.1%				
3. Mozambique Urban WSS and Institutional Support Project	19.06	18.8%	20.3%	7.8%	21.5%	25.7%	0.7%				
4. Ethiopia Harar WSS Project	19.89	1.3%	3.4%	2.7%	20.3%	16.1%	32.2%	6.0%	2.5%	10.1%	0.0%
5. Tanzania Dar es Salam WSS	36.94	1.6%	11.1%	10.0%	9.0%	12.7%	24.0%	20.5%			
6. Tanzania Monduli District Water Project	15.51	4.8%	40.6%	10.9%	17.3%	20.4%	4.6%				
7. Mauritania Nouakchott City Drinking Water Project	9.46	79.8%	19.9%	0.1%							
8. Cameroon Yaoundé Sanitation Project	25.60	1.1%	1.4%	22.7%	11.3%	16.3%	23.5%	8.4%	0.1%	0.0%	
9. Morocco Ninth Drinking WSS Project	68.11	0.1%	12.8%	29.0%	19.4%	19.9%	6.0%	10.7%	2.2%		
10. Senegal Dakar City Sanitation Project	11.93	0.2%	1.9%	1.6%	40.4%	49.3%	6.1%				
11. Congo Brazzaville and Pointe Noire Sanitation Project	12.75	2.5%	12.4%	10.9%	29.2%	21.4%	13.0%	5.3%			
12. Mauritius Plaines Willems Sewerage Project- Stage 1	7.71	27.2%	26.8%	32.1%							
13. Kenya Water Services Boards Support Project	35.19	0.4%	2.7%	7.1%	28.7%	24.9%	29.6%	3.8%			
<b>Rural Water Supply and Sanitation</b>											
1. Burundi Rural Water Infrastructure Rehabilitation and Extension Project	12.00	0.9%	8.4%	18.9%	34.4%	10.2%	8.7%	12.2%			
2. Senegal Rural Water Supply and Sanitation Initiative in Senegal – Launch Sub-Program	25.00	4.2%	26.2%	34.7%	22.2%	12.4%	0.1%				
3. Ghana Rural WSS Program	12.80	2.8%	7.1%	15.4%	7.1%	16.9%	15.6%	11.6%	0.2%		
4. Zambia Central Provinces RWSS Project	10.87	0.8%	3.5%	14.1%	29.6%	41.2%	10.8%				
5. Zambia National RWSS Program	15.00	1.2%	3.2%	4.6%	6.7%	14.5%	20.9%	12.8%	16.5%	0.0%	
6. Rwanda National RWSS Sub-Program I	4.00	61.7%	26.4%	6.2%	5.0%						

Project	Net Approved (M UA)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
7. Burkina RWSS Project in the Cascades, West Central, South Central and Sahel Regions	20.00	0.4%	1.1%	14.6%	21.0%	11.5%	4.0%	14.2%	18.2%	8.6%	
8. Mauritania Drinking RWSS in the South	9.70	0.8%	0.5%	5.7%	3.8%	5.8%	10.6%	15.3%	21.8%	17.0%	
9. Uganda RWSS Program	40.00	10.0%	30.0%	28.3%	31.6%						
10. Uganda WSS Program	40.00	18.2%	3.1%	24.0%	26.0%	23.5%					
11. Chad National RWSS Program	13.00	1.9%	5.8%	16.9%	21.9%	28.1%	14.8%				
12. Mali Drinking WSS Project in Gao, Koulikoro and Segou Regions	22.00	0.6%	4.6%	17.4%	8.2%	7.1%	10.1%	15.5%	14.5%		
13. Rwanda National RWSS Sub-Program II	10.00	22.2%	9.8%	29.0%	22.6%	6.7%	9.3%	0.0%			
14. Tanzania RWSS Program I	55.00	18.5%	11.7%	18.4%	33.3%						
15. Ethiopia WSS Program	43.61	4.7%	10.0%		27.1%	24.2%	19.6%	14.5%			
<b>Agricultural Water Management</b>											
1. Gambia Farmer Managed Rice Irrigation Project	5.00	5.9%	8.2%	35.3%	44.1%	6.5%					
2. Kenya Kimira-Oluoch Smallholder Irrigation Development Project	22.98	0.4%	2.1%	1.5%	22.2%	36.7%	15.4%	11.4%	4.7%	4.0%	1.7%
3. Kenya Green Zones Development Support Project	25.04	3.9%	7.9%	24.0%	7.5%	11.7%	18.0%	12.9%	10.1%	3.1%	0.9%
4. Madagascar Manombo Irrigation Area Rehabilitation Project	9.20	3.9%	14.0%	24.9%	29.0%	2.6%	18.6%	5.4%			
5. Mali Baguineda Irrigation Scheme Intensification Project	14.92	3.1%	20.2%	23.6%	42.6%	10.5%					
6. Nigeria Support to the National Program for Food Security in Ekiti, Ondo and Cross River States (NPFSS)	22.00	9.4%		2.1%		23.1%		17.2%	7.1%	0.1%	
7. Rwanda Bugesera Agricultural Development Support Project	10.00	4.4%	3.1%	20.8%	19.6%	25.3%	11.9%	14.6%			
8. Rwanda Livestock Infrastructure Support Program	21.81	59.6%	40.4%								
9. Senegal Casamance Rural Development Support Project	20.00	1.7%	0.5%	5.9%	6.9%	15.1%	17.4%	11.8%	19.5%	13.0%	4.7%

Source: AfDB Financial Control Department (FFC).

### Disbursement ratio (compared with net approval amount) - by subsector and disbursement year

Project	Net Approved (M UA)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Urban Water Supply and Sanitation	329.38	5.0%	14.1%	16.9%	18.8%	20.2%	13.1%	6.6%	0.6%	0.6%	0.0%
Rural Water Supply and Sanitation	332.98	5.5%	8.0%	14.6%	14.9%	9.4%	4.3%	3.8%	3.4%	1.0%	
Agricultural Water Management	150.95	11.9%	10.9%	11.7%	14.3%	16.0%	9.6%	9.3%	6.0%	2.9%	1.0%
<b>Total</b>	<b>813.31</b>	<b>6.5%</b>	<b>11.0%</b>	<b>15.0%</b>	<b>16.4%</b>	<b>15.0%</b>	<b>8.9%</b>	<b>5.9%</b>	<b>2.8%</b>	<b>1.2%</b>	<b>0.2%</b>

Source: ADB Financial Control Department (FFC).

### Cumulative disbursement ratio (compared with net approval amount) - by project and disbursement year

Project	Net Approved (M UA)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Urban Water Supply and Sanitation</b>											
1. Morocco Eighth Drinking WSS Project	52.14	1.1%	29.2%	58.8%	76.8%	93.1%	96.8%	100.0%			
2. Mozambique Niassa Provincial Towns Water and Sanitation Project	18.00	0.9%	4.4%	6.8%	17.6%	36.8%	43.9%				
3. Mozambique Urban WSS and Institutional Support Project	19.06	18.8%	39.1%	46.9%	68.3%	94.0%	94.7%				
4. Ethiopia Harar WSS Project	19.89	1.3%	4.7%	7.3%	27.6%	43.8%	75.9%	81.9%	84.4%	94.5%	94.5%
5. Tanzania Dar es Salam WSS	36.94	1.6%	12.7%	22.7%	31.7%	44.4%	68.4%	88.8%			
6. Tanzania Monduli District Water Project	15.51	4.8%	45.5%	56.4%	73.7%	94.0%	98.7%				
7. Mauritania Nouakchott City Drinking Water Project	9.46	79.8%	99.7%	99.8%							
8. Cameroon Yaoundé Sanitation Project	25.60	1.1%	2.5%	25.2%	36.5%	52.8%	76.3%	84.7%	84.8%	84.9%	
9. Morocco Ninth Drinking WSS Project	63.51	0.1%	12.9%	41.9%	61.2%	81.1%	87.1%	97.8%	100.0%		
10. Senegal Dakar City Sanitation Project	11.93	0.2%	2.1%	3.7%	44.1%	93.4%	99.5%				
11. Congo Brazzaville and Pointe Noire Sanitation Project	12.75	2.5%	14.9%	25.8%	54.9%	76.4%	89.3%	94.6%			
12. Mauritius Plaines Willems Sewerage Project- Stage 1	7.71	27.2%	54.0%	86.1%							
13. Kenya Water Services Boards Support Project	35.19	0.4%	3.1%	10.2%	38.9%	63.7%	93.3%	97.1%			

Project	Net Approved (M UA)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Rural Water Supply and Sanitation</b>											
1. Burundi Rural Water Infrastructure Rehabilitation and Extension Project	12.00	0.9%	9.4%	28.3%	62.6%	72.9%	81.6%	93.9%			
2. Senegal Rural Water Supply and Sanitation Initiative in Senegal – Launch Sub-Program	24.92	4.2%	30.3%	65.1%	87.3%	99.6%	99.7%				
3. Ghana Rural WSS Program	9.82	2.8%	9.8%	25.3%	32.4%	49.3%	64.9%	76.5%	76.7%		
4. Zambia Central Provinces RWSS Project	10.87	0.8%	4.4%	18.4%	48.0%	89.2%	100.0%				
5. Zambia National RWSS Program	15.00	1.2%	4.4%	9.0%	15.7%	30.3%	51.2%	64.0%	80.4%		
6. Rwanda National RWSS Sub-Program I	9.25	61.7%	88.1%	94.3%	99.2%						
7. Burkina Faso RWSS Project in the Cascades, West Central, South Central and Sahel Regions	20.00	0.4%	1.6%	16.2%	37.2%	48.7%	52.7%	66.9%	85.1%	93.7%	
8. Mauritania Drinking RWSS in the South	9.70	0.8%	1.3%	7.0%	10.7%	16.5%	27.1%	42.4%	64.2%	81.3%	
9. Uganda RWSS Program	40.00	10.0%	40.1%	68.4%	100.0%						
10. Uganda WSS Program	40.00	18.2%	21.4%	45.4%	71.4%	94.9%					
11. Chad National RWSS Program	11.62	1.9%	7.7%	24.5%	46.5%	74.6%	89.4%	89.4%			
12. Mali Drinking WSS Project in Gao, Koulikoro and Segou Regions	22.00	0.6%	5.1%	22.6%	30.8%	37.9%	48.0%	63.5%	78.0%		
13. Rwanda National RWSS Sub-Program II	9.96	22.2%	31.9%	61.0%	83.6%	90.3%	99.6%				
14. Tanzania RWSS Program I	55.00	18.5%	30.1%	48.5%	81.8%						
15. Ethiopia WSS Program	43.61	4.7%	14.6%	14.6%	41.7%	65.9%	85.5%	100.0%			
<b>Agricultural Water Management</b>											
1. Gambia Farmer Managed Rice Irrigation Project	5	6%	14%	49%	93%	100%					
2. Kenya Kimira-Oluoch Smallholder Irrigation Development Project	22.98	0%	2%	4%	26%	63%	78%	90%	94%	98%	100%
3. Kenya Green Zones Development Support Project	25.03	4%	12%	36%	43%	55%	73%	86%	96%	99%	100%
4. Madagascar Manombo Irrigation Area Rehabilitation Project	9.06	4%	18%	43%	72%	74%	93%	98%			

Project	Net Approved (M UA)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
5. Mali Baguineda Irrigation Scheme Intensification Project	14.92	3%	23%	47%	89%	100%					
6. Nigeria Support to the National Program for Food Security in Ekiti, Ondo and Cross River States (NPFSS)	22	9%	9%	12%	12%	35%	35%	52%	59%		
7. Rwanda Bugesera Agricultural Development Support Project	9.96	4%	8%	28%	48%	73%	85%	100%			
8. Rwanda Livestock Infrastructure Support Program	21.81	60%	100%								
9. Senegal Casamance Rural Development Support Project	19.32	2%	2%	8%	15%	30%	48%	59%	79%	92%	97%

Source: AfDB Financial Control Department (FIC).

#### Cumulative disbursement ratio (compared with net approval amount) - by subsector and disbursement year

Project	Net Approved (M UA)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Urban Water Supply and Sanitation	329.38	5%	19%	36%	55%	75%	88%	95%	95%	96%	96%
Rural Water Supply and Sanitation	332.98	5%	14%	28%	43%	52%	57%	60%	64%	65%	65%
Agricultural Water Management	150.95	12%	23%	34%	49%	65%	74%	84%	90%	92%	93%
<b>Total</b>	<b>813.31</b>	<b>6%</b>	<b>18%</b>	<b>33%</b>	<b>49%</b>	<b>64%</b>	<b>73%</b>	<b>79%</b>	<b>81%</b>	<b>83%</b>	<b>83%</b>

Source: AfDB Financial Control Department (FIC).



### Disbursement ratio (compared with net approval amount) - by sector and disbursement year [for projects approved since 2000]

Project	Net Approved (M UA)	Year1	Year2	Year3	Year4	Year5	Year6	Year7	Year8	Year9	Year10	Year11	Year12
Agriculture and Rural Development	3,959.97	10.4%	7.5%	8.2%	9.4%	9.3%	7.7%	6.3%	3.6%	1.6%	0.4%	0.1%	
Finance	6,489.92	60.1%	12.1%	4.7%	4.4%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	
Multi-Sector	9,718.03	65.0%	8.7%	7.5%	3.3%	1.8%	0.7%	0.3%	0.1%	0.0%	0.0%	0.0%	
Power	9,985.64	22.5%	10.4%	17.2%	5.7%	3.2%	1.6%	1.1%	0.4%	0.1%	0.0%	0.0%	
Social	4,365.49	39.6%	4.7%	9.4%	6.6%	6.3%	4.3%	3.3%	2.2%	1.1%	0.1%		0.0%
Transport	10,038.09	14.4%	13.1%	11.8%	9.0%	5.3%	3.1%	0.9%	0.3%	0.0%		0.1%	
Water supply and Sanitation	3,409.39	8.4%	7.9%	14.7%	11.0%	8.6%	5.1%	3.2%	1.4%	0.7%	0.1%	0.0%	
Other sectors (*)	1,485.79	42.8%	12.6%	6.6%	4.9%	3.6%	1.1%	0.7%	0.6%	0.2%			
<b>Total</b>	<b>49,452.33</b>	<b>34.3%</b>	<b>10.0%</b>	<b>10.7%</b>	<b>6.4%</b>	<b>4.1%</b>	<b>2.5%</b>	<b>1.5%</b>	<b>0.8%</b>	<b>0.3%</b>	<b>0.1%</b>	<b>0.0%</b>	<b>0.0%</b>

Source: AIDB Financial Control Department (FIC).

(\*) Other sectors include: Urban Development; Communications; Industry, Mining and Quarrying.

### Cumulative disbursement ratio (compared with net approval amount) - by sector and disbursement year [for projects approved since 2000]

Project	Net Approved (M UA)	Year1	Year2	Year3	Year4	Year5	Year6	Year7	Year8	Year9	Year10	Year11	Year12
Agriculture and Rural Development	3,959.97	10%	18%	26%	35%	45%	52%	59%	62%	64%	64%	64%	64%
Finance	6,489.92	60%	72%	77%	81%	82%	82%	82%	82%	82%	82%	82%	82%
Multi-Sector	9,718.03	65%	74%	81%	85%	86%	87%	87%	87%	87%	87%	87%	87%
Power	9,985.64	22%	33%	50%	56%	59%	61%	62%	62%	62%	62%	62%	62%
Social	4,365.49	40%	44%	54%	60%	67%	71%	74%	76%	78%	78%	78%	78%
Transport	10,038.09	14%	28%	39%	48%	54%	57%	58%	58%	58%	58%	58%	58%
Water supply and Sanitation	3,409.39	8%	16%	31%	42%	51%	56%	59%	60%	61%	61%	61%	61%
Other sectors (*)	1,485.79	43%	55%	62%	67%	70%	72%	72%	73%	73%	73%	73%	73%
<b>Total</b>	<b>49,452.33</b>	<b>34%</b>	<b>44%</b>	<b>55%</b>	<b>61%</b>	<b>66%</b>	<b>68%</b>	<b>70%</b>	<b>70%</b>	<b>71%</b>	<b>71%</b>	<b>71%</b>	<b>71%</b>

**Table A6.13:** PCR Backlog per fiscal year**Water Supply and Sanitation (WSS)**

PCR Due Year	2006	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
Missing PCRs	1	1	1	6	5	2	9	9	21	8	6	69
PCRs Available				3	1	2	1	1	2			10
<b>TOTAL</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>9</b>	<b>6</b>	<b>4</b>	<b>10</b>	<b>10</b>	<b>23</b>	<b>8</b>	<b>6</b>	<b>79</b>

Source: SAP data as at July 2017 (completion project and ongoing project with above 98% of disbursement rate); IDEV's EVRD System

Approval Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Missing PCRs	3	13	7	10	22	6	3	1	3	1	69
PCRs Available	3	2	3	1	1	1					10
<b>TOTAL</b>	<b>6</b>	<b>15</b>	<b>10</b>	<b>11</b>	<b>22</b>	<b>7</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>79</b>

Source: SAP data as at July 2017 and IDEV's EVRD System.

**Agricultural Water Management (AWM)**

PCR Due Year	2010	2011	2012	2013	2014	2015	2016	2017	Total
Missing PCRs	2		1	4	5	4	7	5	28
PCRs Available		2	1		1	2			6
<b>TOTAL</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>6</b>	<b>7</b>	<b>5</b>	<b>34</b>

Source: SAP data as at July 2017 (completion project and ongoing project with above 98% of disbursement rate); IDEV's EVRD System.

Approval Year	2005	2006	2007	2008	2009	2010	2011	2012	Total
Missing PCRs	3	8	3	1	7	2	2	2	28
PCRs available	2	3					1		6
<b>TOTAL</b>	<b>5</b>	<b>11</b>	<b>3</b>	<b>1</b>	<b>7</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>34</b>

Source: SAP data as at July 2017 and IDEV's EVRD System.

Table A6.14: Areas of disagreement between AHWS and IDEV Evaluation Data

#	AHWS Concerns	IDEV Response
1	<p><b>Increased access to improved water sources for RWSS</b></p> <p>i. The <b>Zambia National RWSS</b> project was executed between 2006 and 2010. Per the PAR log-frame, the planned beneficiaries in 2010 (the target year) should be <b>269,087</b> for water and <b>298,985</b> for sanitation corresponding to achievements of <b>239%</b> and <b>81%</b> for water supply and sanitation, respectively. It is not clear why IDEV projected target beneficiaries to 2015 (way above the project design period) to obtain 871,877 for water and 945,660 for sanitation, with lower achievements of <b>74%</b> and <b>26%</b>, respectively.</p> <p>ii. For both <b>Uganda RWSS Program</b> and <b>Uganda WSS Program</b>, where the Bank supported a national program through a joint fund, both the planned and achieved numbers are for the Program and reported in annual SPRs.</p> <p>For <b>Uganda RWSS Program</b>, from the SPR of 2010; or from the <b>EU WB Independent Evaluation</b>: actual beneficiaries for sanitation should be <b>5,116,825</b> (or <b>88%</b>) and not 1,917,000 (33%).</p> <p>iii. For <b>Uganda WSS Program</b>, consolidation of data from annual SPRs gave <b>2,312,678</b> (<b>96% of target</b>) and <b>4,782,921</b> (<b>199% of target</b>) beneficiaries for water supply and sanitation, respectively. IDEV reported achievements of 66% and 52% for water supply and sanitation, respectively.</p>	<p>i. IDEV used its evaluation (PER) of the Zambia RWSS in 2015 as source of evidence. The PCR (ADF/BD/IF/2018/66) for the Zambia RWSS was also prepared in 2015. According to the PCR, the program was substantially complete at the end of 2014.</p> <p>The Zambia RWSS's actual implementation period was 2006-2014 as against a planned implementation period of 2006-2010. IDEV used the planned number of beneficiaries indicated in the project appraisal report (PAR) (ADF/BD/WP/2006/114) for the year 2015. The planned beneficiaries indicated in the PAR (ADF/BD/WP/2006/114) are as follows:</p> <ul style="list-style-type: none"> <li>■ Increased proportion of rural population with access to clean and safe water from 37% in 2006 to 55% in 2010, 75% by mid-2015.</li> <li>■ Increased access to improved sanitation facilities from less than 13% in 2006 to 33% by 2010 and 60% by 2015.</li> </ul> <p>It is also important to mention that AHWS's PCR presents different data for the same indicator (see sections on "beneficiaries", "Progress towards the project's development objective (project purpose)" and "Rating" (see IPR methodology))</p> <p>ii. For both the <b>Uganda RWSS and WSS Programs</b>, IDEV relied on its estimations. In the case of the Uganda RWSS, the IDEV's PER found reliability issues with the sanitation data reported in the PCR:</p> <ul style="list-style-type: none"> <li>■ According to the JMP, rural sanitation coverage in Uganda in 2008 stood at 49 percent. However, Ministry of Health data show rural sanitation coverage to be higher, (62 percent in 2008 and 68 percent in 2009), against a national subsector target of 77 percent. (<a href="https://www.wsp.org/sites/wsp/files/publications/CSO-uganda.pdf">https://www.wsp.org/sites/wsp/files/publications/CSO-uganda.pdf</a>, page 25)</li> <li>■ There were no subsidies for rural domestic sanitation in Uganda, and funding levels for promotion sanitation were also low.</li> <li>■ The SPR 2016 report quoted the 2014 census as follows: "58 percent of rural population has improved toilets". It also indicated the difference in coverage figures between what was reported from district data and data from the Census due to the differences in defining an improved sanitation facility. The definitional difference is about the quality of facilities constructed by households.</li> <li>■ The SPR 2016 summarizes the issue of quality of sanitation data as follows, "there is no system in place to validate data on sanitation as it comes from the village health teams (VHTs) who collect that channeled through to the district and finally to the national level. The quality of data hampers planning" (SPR 2016, p106).</li> </ul> <p>The PCR's access figure is based on data from the annual SPRs without accounting for the difference between the dataset of the District Local Government (DLG) and that of the Uganda Bureau of Statistics (UBOS). For example, the UBOS classified the Town Boards as rural, and as such included them in estimating the aggregated rural access (SPR, 2006).</p> <p>iii. The <b>Uganda WSS Program</b> PAR (ADF/BD/WP/2011/104) indicates on page 4 the following:</p> <ul style="list-style-type: none"> <li>■ The objective of the proposed WSSP is to support the GoU's efforts to achieve sustainable provision of safe water and hygienic sanitation, based on management responsibility and ownership by the users, to 77% of the population in rural areas and 90% of the small towns' population by the year 2015.</li> <li>■ The WSSP will support three out of seven components of the ongoing Joint Water Supply and Sanitation Programme Support (JWSSP) activities. As the SPR data is not disaggregated by funding sources, the national SPR achievement rates should not entirely be attributed to the WSSP.</li> </ul> <p>Page 6 of the PAR indicates that: "The programme's target is to contribute to meeting the water and sanitation related MDGs by 2015. This implies an increase in the access to safe drinking water and improved sanitation to an additional 2.4 million people in rural and small towns."</p> <p>However, the PCR indicates a planned number of beneficiaries of 2,059,168 people and actual number of beneficiaries of 2,842,010 people (without indicating the source(s) or basis of these figures).</p>

#	AHWS Concerns	IDEV Response
2	<p><b>Estimation of new people gaining access to drinking water supply and improved sanitation services through UWSS projects</b></p> <p>AHWS assertions are: (i) IDEV used a target population of 3.4 million which was the <b>total population of Dar es Salaam in 2009</b>. Realistically, the Bank's investment of USD 22.4 million could never meet sewerage needs for 3.4 million people (would suggest unit costs of a paltry USD 6.6 per capita!). (ii) Indeed, as data in Table A6.7 of the Annex shows, the project achieved <b>92%</b> of its planned sanitation outputs; while the PCR reports <b>98%</b> achievement. Logically, such a high performance at output level could not have translated into the reported meagre 1.4% achievement at outcome level.</p> <p>AHWS also considers this project (approved in 2001) to be outside the evaluation period.</p>	<p>IDEV used available data, including the Government Completion Report and other development partners that co-financed the project – mainly the World Bank (ICR report, ICR review note prepared by IEG) to estimate the missing data.</p> <p>The project was a jointly co-financed with other development partners such as the World Bank, the EIB, Private Operator and GVT/DAWASA. The total cost of the project was UA 114,87 million.</p> <p>ICR indicated on page 30 the following:  <b>Indicators</b>.....: Population with improved sanitation  <b>Targets</b>.....: None  <b>Realized (2009/10)</b>: 476,000 (1.4%) - Percentage reported by NBS Survey of Nov. 2009 applied to population of 3.4 million.</p> <p>This is part of the eight projects approved during the period 2000-2004 and implemented during the evaluation period (2005-2016). IDEV also conducted post evaluations for these eight projects.</p>
3	<p><b>Water Schemes Functionality</b></p> <p>AHWS reported higher functionality rates than the reported average rates in literature. A review of PCRs of RWSSI projects (e.g., Tanzania, Uganda, Ghana and Rwanda) gave functionality in the range of range of <b>80 and 92%</b> as tabulated in a matrix and shared with IDEV.</p>	<p>IDEV used its evaluations (PER, PPER and impact) and the literature to estimate functionality of the facilities.</p> <p>From the matrix shared with IDEV, only Zambia National RWSS, Uganda National RWSS and Uganda RWSS presented data on functionality rate. However, the PCRs did not indicate the sources and methods for computing the functionality figures. For Ghana, the PCR only indicated that "Majority of water facilities was functional at time of PCR mission." Regarding the PCR for Rwanda National RWSS and that of Ethiopia RWSS, no data on functionality rate were provided.</p> <p>Furthermore, the PCRs were prepared at project completion (when the cumulative disbursement rate reached 98%). However, the IDEV evaluations were done after the PCRs (2-3 years later). In effect, the PCRs and IDEV project evaluations were done at two different time periods. Although the PCRs found the level of functionality ranging from 80 to 92%, the post evaluation estimated the functionality level to be around 66%.</p>

#	AHWS Concerns	IDEV Response																																							
4	<p><b>Outputs for UWSS - Kenya data in Table A6.7 of the Annex 6 (also relates to Executive Summary).</b></p> <p>AHWS questions the source of the 50% achievement for sanitation outputs for the Kenya UWSS project. Page 7 of the PCR enumerates the various outputs and gives an <b>overall rating for outputs of 4 – “Outputs surpassed appraisal targets”</b>. Therefore, the achievement for Kenya should be at least 100% instead of the given 50%.</p>	<p>IDEV used its PER done in 2017. The PER provided the achievement rate of 50% of the sanitation outputs. In the case of the PCR, there is no data on the levels of achievements of the main expected sanitation outputs (See PAR in page 6, 7 and 8). As the table below from the PAR indicates, the PCR mainly reports on three of the sanitation outputs without targets.</p> <p>Furthermore, the reported <b>“outputs surpassed appraisal targets”</b> is referring to overall water and sanitation (WSS) outputs, not for sanitation only.</p>																																							
		<table border="1"> <thead> <tr> <th>Output Description</th> <th>Expected Outputs (A)</th> <th>Actual Outputs (B)</th> </tr> </thead> <tbody> <tr> <td>Support the development of public and community managed toilet blocks in Migori (LWWSB)</td> <td>5</td> <td>?</td> </tr> <tr> <td>Acquisition of exhauster in Migori (LWWSB)</td> <td>1</td> <td>?</td> </tr> <tr> <td>Toilet blocks in selected schools in rural areas (LWWSB)</td> <td>50</td> <td>?</td> </tr> <tr> <td>Rehabilitation of treatment sewerage (LWWSB)</td> <td>2</td> <td>?</td> </tr> <tr> <td>Development of ablution blocks (LWWSB)</td> <td>10</td> <td>?</td> </tr> <tr> <td>Rehabilitation of the sewerage network in Muranga (TWSB)</td> <td>600</td> <td>?</td> </tr> <tr> <td>Development of public toilets (TWSB)</td> <td>10</td> <td>?</td> </tr> <tr> <td>Provision of Exhausters (TWSB)</td> <td>2</td> <td>?</td> </tr> <tr> <td>Extension of trunk sewer lines (Kibera)</td> <td>?</td> <td>?</td> </tr> <tr> <td>Connections of ablution blocks to the sewers (Kibera)</td> <td>0</td> <td>4</td> </tr> <tr> <td>Construction of Ablution blocks in six villages in Kibera</td> <td>0</td> <td>20</td> </tr> <tr> <td>Rehabilitation of sewers (Kibera)</td> <td>0</td> <td>3125</td> </tr> </tbody> </table>	Output Description	Expected Outputs (A)	Actual Outputs (B)	Support the development of public and community managed toilet blocks in Migori (LWWSB)	5	?	Acquisition of exhauster in Migori (LWWSB)	1	?	Toilet blocks in selected schools in rural areas (LWWSB)	50	?	Rehabilitation of treatment sewerage (LWWSB)	2	?	Development of ablution blocks (LWWSB)	10	?	Rehabilitation of the sewerage network in Muranga (TWSB)	600	?	Development of public toilets (TWSB)	10	?	Provision of Exhausters (TWSB)	2	?	Extension of trunk sewer lines (Kibera)	?	?	Connections of ablution blocks to the sewers (Kibera)	0	4	Construction of Ablution blocks in six villages in Kibera	0	20	Rehabilitation of sewers (Kibera)	0	3125
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#	AHWS Concerns	IDEV Response
5	<p><b>Relevance of design (page 12 and in Executive Summary page viii)</b></p> <p>It is stated that only 44 percent (18 out of 41 projects) were rated satisfactory in terms of relevance of design. However:</p> <ul style="list-style-type: none"> <li>■ It appears that some projects like Uganda RWSS and Mali RWSS that were rated satisfactory in the PERs that IDEV shared with AHWS are not listed among the 18.</li> <li>■ At least 4 WSS projects that had no ratings should not be part of the calculation: Ethiopia RWSS and Tanzania RWSS (which were impact studies), Rwanda 1 and Zimbabwe Urgent WSS.</li> <li>■ It is unclear why findings on the relevance of design for WSS clusters and those for the AWM cluster are lumped together. If the findings cannot be presented separately for each cluster (UWSS, RWSS, and AWM), we propose to <b>differentiate the findings for the 32 WSS projects from those of the 9 AWM projects</b>. In that case, it can be shown that <b>at least 68 percent</b> (19 projects out of 28 rated WSS projects) were rated satisfactory in terms of relevance of design.</li> </ul> <p>[the 19 projects are calculated from the 18 reported minus 1 AWM project + Uganda RWSS + Mali RWSS]</p>	<p>The evaluation team did not consider the rating provided in the PER without reviewing the evidence supporting such rating. Accordingly, the team re-assessed the available evidence on relevance of design for all projects, including those without rating. As a result, only 18 of the 41 projects were found without major shortcomings.</p> <p>Of the 18 out of 41 projects rated satisfactory, 4 were for AWM, 6 for RWSS, 7 for UWSS and 1 for Sectoral Adjustment.</p>

## Annex 7: Rating Matrix – Triangulating the sources of evidence

Criteria	Sources of Information	Country Case Studies	Literature & Policy Review	Portfolio Review	Comment	Proposed Rating
<b>Evaluation Questions</b>	<b>PER Assessment</b>	<b>Cluster Evaluation<sup>81</sup></b>	<b>Country Case Studies</b>	<b>Literature &amp; Policy Review</b>	<b>Portfolio Review</b>	<b>Comment</b>
<b>RELEVANCE</b>						
<b>Relevance of Objectives</b>	All 41 PERs cited at least one key Bank policy document as basis for project objective.	71% of PARs explicitly referenced MDGs in terms of intervention objectives.  Bank approach to water sector was reflected in all projects examined in cluster analysis.	Confirmed by the participatory process by Bank and RMCs in project development.	Aligned to (i) Bank's Strategy Ten-Year (TYS 2013-2022); (ii) Africa Water Vision for 2025 (AFDB, 2016); MDGs, World Water Vision 2025 and RMC national plans and targets aligned to MDGs (Appropriate Dates)	All 41 projects reviewed	Satisfactory
<b>Extent to which the objectives of the Bank strategies, policies and initiatives, in the water sector, are aligned with the Bank corporate policies, the country's development priorities and international targets.</b>						
<b>Extent to which the objectives of Bank interventions, in the water sector, are aligned with the country's development strategies, Bank strategies, and beneficiaries need.</b>						
<b>Extent to which the water sector high-level objectives are reflected in the development agendas and policies of countries.</b>						
<b>Relevance of design</b>	Around 44% (18 out of 41 projects) were rated satisfactory or higher in terms of relevance of design.  Review of evidence (content analysis) provided in PERs to support the rating indicated that only design of 18 projects was good with minors shortcoming but of no serious consequence.	The dominant approach used was "demand-driven" with mixed effectiveness depending on quality of local collaboration and nature of interference.	It has now been widely acknowledged that despite its fundamental importance in preventing waterborne illness (which contributes to malnutrition, thereby hindering overall development objectives), has not been attributed the same degree of political attention or funding as access to clean water.  Stakeholders in 6 of 10 case studies cited insufficient support to private sector.	Design weaknesses due to: (i) insufficient focus on sanitation with regard to WASH sector theory of change; (ii) inappropriate choice of technology; and (iii) inadequate private sector participation.	All 41 projects reviewed presented the weaknesses in at least one of 9 AWM projects.	Unsatisfactory
<b>Extent to which design interventions is conducive to achieving results</b>						
<b>EFFECTIVENESS</b>						

Criteria	Sources of Information				Proposed Rating	
	Evaluation Questions	PER Assessment	Cluster Evaluation <sup>a1</sup>	Country Case Studies		Literature & Policy Review
<b>A. Water Supply and Sanitation Outputs</b>						
<b>A1 Urban WSS Outputs</b>						
<ul style="list-style-type: none"> <li>Extent to which <b>Urban Water</b> Physical Outputs have been achieved</li> </ul>	Under-utilization of Urban water infrastructure associated with: (i) insufficient water availability at source; (ii) inappropriate distribution network; (iii) design shortcomings; (iv) unstable power supply for pumping; (v) absence of appropriate management structure.	All UWSS projects, except for Kenya and Senegal, achieved more than 75% of revised physical infrastructure outputs			Nine of the 15 urban WSS projects were scaled down (revised) mainly for financial constraints.	Satisfactory (marginal)
<ul style="list-style-type: none"> <li>Extent to which <b>Urban Sanitation</b> Outputs have been achieved</li> </ul>		Only 42% of Urban sanitation cluster projects achieved more than 75% of expected physical outputs				Unsatisfactory
<ul style="list-style-type: none"> <li>Extent to which <b>Urban institutional strengthening and capacity-building</b> outputs have been achieved</li> </ul>	The support activities were focused on providing equipment and studies		Bank also provided institutional strengthening and capacity building for improved service delivery and better operations and maintenance.			Satisfactory (marginal)
<b>A2 Rural WSS Outputs</b>						
<ul style="list-style-type: none"> <li>Extent to which <b>Rural Water</b> Physical Outputs have been achieved</li> </ul>	All 16 Rural projects, except Uganda WSSP, produced more than 75% of their revised expected water infrastructure outputs, with six projects exceeding target outputs.				Six of 16 projects were scaled for financial constraints and changes in technology, leading to reduced output quantity and quality.	Satisfactory (marginal)



Criteria	Sources of Information				Country Case Studies	Literature & Policy Review	Portfolio Review	Comment	Proposed Rating
	PER Assessment	Cluster Evaluation <sup>61</sup>	Country Case Studies	Literature & Policy Review					
<p>Extent to which <b>Rural Sanitation</b> Physical Outputs have been achieved</p>	<p>The number of household latrines constructed through the RWSS cluster projects, was relatively low (90,910 latrines) compared to the real needs and below target (70%<sup>63</sup> achievement). The limited number of household latrines could be attributed to the strategy used by the Bank for its sanitation interventions, with countries choosing their priorities<sup>64</sup> and challenge of overall gap in the WSS sector.</p>	<p>Around 64% of 14 RWSS cluster projects achieved more than 75% of the expected sanitation facilities. The remaining five projects (Burkina Faso, Chad, Ghana, Zambia-National RWSS, and Uganda WSS) provided less than 65% of their expected sanitation facilities.</p>	<p>With the exception of Rwanda and Zimbabwe, the rural sanitation projects did not consider adequate disposal of waste management.</p>					Unsatisfactory	
<p>Extent to which <b>Rural institutional strengthening and capacity-building</b> outputs have been achieved</p>	<p>The RWSS interventions produced substantial outputs in terms of capacity development and awareness campaigns.</p>	<p>The RWSS cluster project exceeded its targets (by 12% on average) in the number of people trained in the management of WSS systems and facilities (around 11,600) and masons (more than 3,000). About 5,300 people and 5,000 communities/clubs were reached through project activities in community awareness raising and sensitization about improved sanitation and hygiene practices.</p>	<p>Several mechanisms were nonetheless described by which the AfDB built capacity during projects.</p>			<p>About 10% of project resources was allocated to capacity development and awareness creation, which substantially exceeded their targets.</p>		Highly Satisfactory	

Criteria	Sources of Information				Proposed Rating	
	Evaluation Questions	PER Assessment	Cluster Evaluation <sup>a1</sup>	Country Case Studies		Literature & Policy Review
<b>B. Water Supply and Sanitation Outcomes</b>						
<b>B1 UWSS Outcomes</b>						
<ul style="list-style-type: none"> <li>Extent to which UWSS interventions increased access to and use of improved water sources.</li> </ul>	<p>13 of 15 UWSS cluster projects achieved significant outcomes in terms of access to portable water. The benefits of UWSS were most clearly manifested in Morocco and Mauritius, where the governments integrated UWSS with tourism and small- and medium-sized business opportunities within their integrated development strategy and plans.</p>	<p>UWSS support provided potable water to about 6 million (79%<sup>85</sup>) of the target of around 8 million people in the project areas. Only four of 11 cluster UWSS projects (36%) met their anticipated beneficiaries, while 72% of projects met at least 75% of anticipated beneficiaries.</p>				Satisfactory

Criteria	Sources of Information			Literature & Policy Portfolio Review		Proposed Rating
	PER Assessment	Cluster Evaluation <sup>61</sup>	Country Case Studies	Literature Review	Portfolio Review	
<p>Extent to which <b>UWSS institutional development and capacity building</b> Outcomes have been achieved</p>	<p>Improved access to potable water was spatially uneven in terms of distribution and challenged by failure to deliver uninterrupted potable water supply. No urban water project achieved potable water supply 24 hours per day to all customers.</p> <p>Capacity issues also constrained the performance of the UWSS sanitation interventions</p>	<p>The performance of the water utilities in the project cluster was generally poor (Annex 4, Table A4.2)</p> <p>The UWSS Cluster Evaluation Report, with large gaps in water-service coverage.</p> <p>Limited capacity to ensure adequate service delivery</p>	<p>The capacity of the water utilities was inadequate in almost all of the 10 countries case studies and also in the project cluster countries (except Morocco).</p>	<p>The capacity of the water utilities in Africa are generally underperforming, relatively weak customer performance. It is reported that, on average, the continent's urban water utilities lose about 50% of the water they produce. Inadequate capacity of the water utilities was corroborated by the recent World Bank study (2017)</p>		Unsatisfactory
<b>B2 RWSS Outcomes</b>						
<p>Extent to which <b>RWSS interventions increased access to and use of improved water sources.</b></p>	<p>Except for Zimbabwe, RWSS projects also reduced the time required for fetching water by users.</p>	<p>Rural water project cluster provided access to 83% of target population.</p> <p>Around nine of 15 cluster RWSS projects (60%) met or exceed their anticipated potential beneficiaries, while 80% of projects met at least 75% of anticipated potential beneficiaries</p>	<p>Effective and sustainable access to and use of water sources were affected over time by limited functionality of facilities and insufficient quality of water.</p>	<p>The findings on water functionality was corroborated by World Bank WASH Poverty Diagnostic study (Alejandro et al., 2017), RWSN data, etc.</p>		<p>Satisfactory (coverage access)</p> <p>Unsatisfactory (Effective or Universal access)</p>



Criteria	Sources of Information			Country Case Studies	Literature & Policy Review	Portfolio Review	Comment	Proposed Rating
	PER Assessment							
<p>Extent to which <b>RWSS interventions increased access to and use of improved sanitation services</b></p>	<p>Availability of sanitation services was considerably reduced over time, mainly because of inadequate facility maintenance and waste management, and/or non-functionality of facility.</p>	<p>Only 46 % of the targeted 15 million in the cluster projects had access to improved sanitation services.</p> <p>Only three of 13 cluster Rural Sanitation projects (23%) met their anticipated beneficiaries, while 31% of projects met at least 75% of anticipated beneficiaries</p>	<p>Except for Morocco and Rwanda (with access coverage rates of 77% and 62% in 2015, respectively), all country case studies found low access rates.</p>	<p>Findings are corroborated by the following studies: "Hygiene and Sanitation Education in the Rural Water Supply and Sanitation Operations of the AfDB" (AfDB, 2012) and the Impact Evaluation of Zambia and Malawi WSS Projects (AfDB, 2016e).</p>				Unsatisfactory
<p>Extent to which <b>RWSS increased adoption of key hygiene Behaviors/practices</b></p>	<p>Frequent open defecation. Infrequent hand-washing. Unsafe storage of water within households.</p>	<p>Three RWSS projects (in Burkina Faso, Ghana and Senegal) reported improvements in reducing open defecation but the practice was still common in the project areas especially in Chad, Tanzania, and Zimbabwe.</p>	<p>Overall, the prevalence of open defecation in rural areas across the 10 countries improved from 27.2% in 2005 to 20.6% in 2015. While open defecation occurs in both rural and urban settings, this practice is more common in rural settings. The scant data available on handwashing facilities with soap and water suggests that it is low, averaging 20.7% in urban areas and 7.3% in rural.</p>	<p>The RWSS participatory methods (e.g., SARAP/PHAST and Community-Led Total Sanitation) were not as effective as desired in fostering the desired behavior change to sustain good sanitation and hygiene practices. (AfDB, 2012b)</p>				Unsatisfactory

Criteria	Sources of Information				Proposed Rating			
	Evaluation Questions	PER Assessment	Cluster Evaluation <sup>a1</sup>	Country Case Studies		Literature & Policy Review	Portfolio Review	Comment
<b>C. AWM Interventions</b>								
<ul style="list-style-type: none"> <li>■ Extent to which AWM Outputs have been achieved</li> </ul>			<p>The project cluster delivered 68% of the target outputs (including feeder roads, wells, toilets, storage and drying facilities, rural markets, etc.).</p> <p>Output level was adversely affected by incomplete land development component (46 of target achieved).</p>			<p>Beyond limitations associated with cost over-runs and changes in technology to address design shortcomings, corrective actions during implementation were not always implemented in a timely manner to ensure that expected outputs were in compliance.</p>		Unsatisfactory

Criteria	Sources of Information			Country Case Studies	Literature & Policy Review	Portfolio Review	Comment	Proposed Rating
	PER Assessment	Cluster Evaluation <sup>61</sup>						
<p>Extent to which AWM interventions <b>increased access to water for irrigation</b></p>	<p>None of the AWM projects aiming to increase access to water for agriculture reached its target.</p>	<p>Only 35% of the AWM projects' target number of smallholder farmers gained access to water for irrigation or livestock. With the exception of Mali, the irrigated hectares developed were around 66% of the overall target.</p>					<p>Some AWM projects (notably Kenya Green Project, etc.) produced positive results regarding water resource and environmental conservation</p>	<p>Unsatisfactory</p>
<p>Extent to which AWM interventions <b>increased crop production and productivity</b></p>		<p>While the AWM projects reduced the drudgery of fetching water for domestic and farm use, their contribution to improvement in crop production and productivity fell short of predetermined targets.</p>		<p>Findings corroborated by previous evaluations (AFDB, 2011; AFDB, 2013)</p>				<p>Unsatisfactory</p>

Criteria	Sources of Information				Proposed Rating			
	Evaluation Questions	EFFICIENCY	Cluster Evaluation <sup>a1</sup>	Country Case Studies		Literature & Policy Review	Portfolio Review	Comment
Economic Performance	All projects for which EIRR are available, except Mauritius, have post-completion EIRR higher than opportunity cost of capital (at 10-12%), (Annex 6, Table A6.10)					There is an increasing adoption of EIRR measures in water sector of projects appraisals, from 52% for projects appraised during 2005-2010 to 77% during 2011-2016	EIRR calculations appear to be applied with varying degree of rigor across PARs and PERS	Satisfactory
Financial Performance	Of 13 out of 36 projects for which FIRRs were calculated, only 6 presented the required weighted average cost of capital for comparison (Annex 6, Table A6.11).	The financial performance is rated as unsatisfactory mainly due to low revenue generation relative to investment and operating costs.	Country studies found that poor revenue generating capacity of service providers compromised the operational quality of the system and its maintenance.	Sanitation projects usually have inadequate database for assessing financial viability at both the Bank and RMCs (AfDB, 2014).				Unsatisfactory
Timeline	All projects reviewed suffered substantial time overrun.	The average project age (from approval to completion) was 84 months (7 years), equivalent to an average delay of 18 months relative to the planned duration at appraisal. The project age ranged from 49 months for Zimbabwe's urgent WSS rehabilitation to 141 months (11 years and 9 months) for the Zambia National RWSS Program.	Delays in disbursements were the most widely cited barrier to efficiency. Low technical and financial capacity of the implementing partners were among the most commonly cited reasons for the delay.					Unsatisfactory



Criteria	Sources of Information			Country Case Studies	Literature & Policy Review	Portfolio Review	Comment	Proposed Rating
	Evaluation Questions	PER Assessment	Cluster Evaluation <sup>a1</sup>					
<b>SUSTAINABILITY</b>								
Technical Soundness	<p>Eleven of the 15 urban water supply projects provided good technical designs and advanced technology for sustaining project benefits.</p> <p>RWSS sanitation infrastructure characterized by poor maintenance and inadequate project design, which relied on waste removal services that were non-existent in rural areas.</p> <p>Technical soundness of the sanitation component of UWSS projects, such as latrines were inappropriate for the needs of some beneficiary countries.</p>	<p>The Bank's water components, including both rural water and agricultural water, were assessed as satisfactory in terms of technologies, but they were not always appropriate to the local context.</p>	<p>Hygiene issues also undermined sustainability of the benefits from latrines in most countries, and especially school latrines.</p> <p>Sustainability, both financial and operational, was an important challenge across all RMCs selected for case study, resulting from a mixture of issues including low capacity, structural issues related to decentralization, supply chain and parts quality, and cost.</p>	<p>Procurement of equipment and spare parts remained a challenge in the water sector.</p>	<p>In terms of capacity governing the new water infrastructure, to maintain sufficient capital assets in both local government and etc.), and to communities-address water maintenance challenges of water was not always infrastructure explicitly was found to address in be an important project appraisal risk for the sustainability of water projects benefits.</p>	<p>Procurement of equipment and spare parts needed to maintain infrastructure, to maintain sufficient capital assets in both local government and etc.), and to communities-address water maintenance challenges of water was not always infrastructure explicitly was found to address in be an important project appraisal risk for the sustainability of water projects benefits.</p>	Satisfactory (marginal)	

Criteria	Sources of Information				Proposed Rating	
Evaluation Questions	PER Assessment	Cluster Evaluation <sup>81</sup>	Country Case Studies	Literature & Policy Review	Portfolio Review	Comment
Financial viability	<p>UWSS generally under-performed, mainly due to low revenue generation relative to the high investment and operating costs, as well as a high level of non-revenue water.</p> <p>All RWSS sanitation projects and those with sanitation components suffered from a lack of appropriate and affordable waste-water tariffs and collection procedures.</p>	<p>UWSS experienced weak financial viability due to the poor performance of utilities. Government subsidies were needed in all the RMCs for the financial health of water supply and sanitation utilities to be secured.</p> <p>None of the RWSS project established the means to ensure the financial viability of both water and sanitation systems.</p> <p>Four of 9 AWM projects established the means to ensure financial viability of implemented infrastructure</p>	<p>By far the greatest threat to the sustainability of the water and sanitation infrastructures identified by interviewees was the financial viability of the water system, although four that assessed to ensure RMCs (Ghana, Mauritania, Rwanda and Senegal) were able to ensure the financial viability of a water supply system.</p> <p>Challenges on the side of the consumer included an unwillingness to pay and low payment compliance.</p> <p>Challenges on the side of the administration included a lack of political will to increase tariffs, as well as difficulty in creating and implementing equitable tariff structures with reliable collection schemes.</p>	<p>Cost recovery is a key issue that must be strategically and systematically assessed to ensure that an intervention will be financially viable.</p> <p>Long-term financial viability is essential to ensuring infrastructure can be operated and maintained over time without external support.</p>		Unsatisfactory

Criteria	Sources of Information			Literature & Policy Review	Portfolio Review	Comment	Proposed Rating
	Evaluation Questions	Cluster Evaluation <sup>61</sup>	Country Case Studies				
Institutional and Capacity Strengthening	PER Assessment	Institutional and capacity development were often an integral component of the Bank's water sector projects, limitations were present in terms of sustaining and enhancing this capacity	Country case studies highlight RMCs weak institutional memory, compounded by high government/utility staff turnover. Government institutional structure of ministries responsible for WSS and AWM varies widely between countries, although in most countries, it seems that responsibilities are split across two or more ministries. The consolidated structure appears to be in Kenya, where the Ministry of Water and Irrigation deals with both aspects of water management. In Morocco, there is an inter-ministerial water council that comprises all the departments involved in water.	Results from the Bank's building programs, such as one-off workshops and mentoring over time have been mixed (AFDB, 2015). The evaluation of the IWRM strategy found that the Bank's operations modestly contributed to institutional capacity building in RMCs, and tended to instead focus on project management. The private sector has taken on an increasingly important role in water infrastructure operation and maintenance, but more capacity needs to be built.			Unsatisfactory

Criteria	Sources of Information				Proposed Rating				
	Evaluation Questions	Institutional and Capacity Strengthening	PER Assessment	Cluster Evaluation <sup>a1</sup>		Country Case Studies	Literature & Policy Review	Portfolio Review	Comment
						When a capacity-building activity is planned by a government, its format is not always appropriate (e.g., sending public servants to conferences instead of providing them with project management training).			
Beneficiary Ownership and participation in maintenance		In 75% of cases, water sector projects created the conditions to build a sense of ownership among beneficiaries. Evidence is insufficient to assess the extent to which this sense of ownership was, or will be, maintained over time.  The AWM projects also promoted ownership by inviting beneficiaries to manage their own project activities through their own institutional structures.	All the UWSS projects promoted ownership and partnership through the participation of the relevant stakeholders at the national, regional and district levels regarding the sources of water, technology and service choice and prices.		Community-based organizations (e.g., Water Users Associations) have been used to fill the roles of project management, asset ownership and financing, but building these institutions is slow and involves sensitization, mobilization and securing willingness to participate, including operation & maintenance (O&M) financing.		In general, projects mobilized community ownership by integrating a broad stakeholder approach from project conceptualization to implementation.	Satisfactory	

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## Endnotes

1. See, however AHWS's different assessment in Annex 6 Table 14, point 5.
2. Approved amount for agricultural projects with water management components.
3. Agricultural uses of water include irrigation, drainage, diversions, water storage, ground water recharge and surface water management, salinity control and land reclamation, water-logging, watershed management, flood control, climate change mitigation, drought resilience, water harvesting and conservation.
4. It illustrated the amount of renewable freshwater that is available for each person each year using the 'Falkenmark indicator' or 'water stress index'. If the amount of renewable water in a country is below 1,700 m<sup>3</sup> per person per year, that country is said to be experiencing water stress; below 1,000 m<sup>3</sup> it is said to be experiencing water scarcity; and below 500 m<sup>3</sup>, absolute water scarcity.
5. The level of 'water stress' is calculated as the ratio of total fresh water withdrawn by all major sectors to the total renewable fresh water resources in a particular country or region" (UN, 2016).
6. Agricultural water management activities involve variable combinations of irrigation, drainage and flood control, water conservation and storage, on farm water management, and institutional support to improve sustainability, user operation and management.
7. The term "operations" refers to the financial instruments used to fund a project (loans and grants).
8. Two RWSS projects have an impact evaluation report.
9. As at May 2017.
10. Seventy-six are investment projects and 33 are studies.
11. The Bank's window here does not include the MIC Technical Assistance Facility and Special Relief Fund and the African Development Fund window does not include the Fragile States Facility. These excluded funds are included in the group "others".
12. SAP database as at June 2017.
13. Gambia, Kenya KOSFIP, Mali AWM project, Senegal PADERCA, Burundi RWSS, Ethiopia RWSS, Mauritania RWSS, Rwanda PNEAR II, Senegal RWSS, Zambia RWSS, Morocco Projects 8 and 9, Mozambique UWSS, Mauritania UWS, Cameroon Urban Sanitation Project, Congo Urban Sanitation Project, Mauritius Sanitation Project, and Morocco Water Sector Adjustment Project.
14. See, however AHWS's different assessment in Annex 6 Table 14, point 5.
15. An element of top-down targeting was inevitable due to the absence of a number of early steps that needed to be taken at Local Government Authorities level, including orientation for staff and "promotion of demand at the community level".
16. The intervention strategy used in this case included community participation, a demand-driven and integrated value-chain development approach, infrastructural development, capacity building and empowerment processes.
17. In Mali, the poor mobilization of the beneficiaries' contribution to the project was indicative of low ownership. This may suggest inappropriate beneficiaries' participation during the design stage.
18. Land morphology and the consequences of storm runoff were improperly assessed. The primary thickener that prevents the direct sludge discharge from the treatment plant was abandoned. In addition, the technical options were not the best adapted to the Senegalese context. The activated sludge process, which is based on aerobic biological treatment, is widely used in industrialized countries, mainly in Europe and North America. Although the systems have been well-tested, particularly in France, their operation has little flexibility and they are not easily adaptable to the context of African countries, especially in terms of energy consumption, as they do not tolerate significant flow changes.
19. There were three technical options. The technical choice made had conclusive advantages, but caused adverse results in terms of cost, operation and maintenance requirements.

20. The choice of technology was inappropriate. Meters acquired in Nyahururu and Muranga south were incompatible with the requirement of the water services provider and remain largely unused. Pressure reducing valves were used in The Murang'a South Water and Sanitation Company Ltd, but staff were not trained in their use and nor were operational manuals provided, while the automatic data logger was fitted with proprietary software by a supplier from the United Kingdom, and thus the device was costly to maintain. Moreover, the project design did not clearly define the distribution network or clarify the connectivity between the new system and the old one.
21. Ghana, Tanzania DWSSP and MoWSSP, Mauritania, Cameroon, Congo and the Comoros.
22. Vis-à-vis natural disasters, such as droughts, pollution, erosion, siltation, etc.
23. Burundi, Senegal, Zambia National Rural WSS, Mauritania, Uganda RWSS and Rwanda PNEAR I.
24. Poor consideration of water management at the design stage destabilized the community structure and became a source of conflict.
25. A high percentage of leakage (58%) was encountered in the old systems of the Mauritania project. In addition to the water loss, the wastewater infiltrated from septic tanks and the sewage network will find its way into the water supply network through leakage points.
26. The unique new water system (Mbeni) built under the project in 2015 was still not operational at the time of the evaluation mission (July 2017), with the risk that non-functional electrical equipment will deteriorate before use. The Mbeni commune refused to manage the system due to its high operational cost (diesel pump water scheme).
27. If the Tanzania Dar es Salaam WSS Project is excluded, this percentage rises to 90% of a target population of 5.1 million.
28. In the case of the Mozambique Niassa project, for instance, the PER revealed that from the regulator report (CRA, 2015) water is pumped to the network 19 hours a day in Lichinga and 16 hours a day in Cuamba. The figure in Lichinga will worsen due to the increase of the town's population against static production capacity.
29. From 18 hours a day in 2007/08 to 12 hours a day in 2015/16.
30. Fewer parameters tested than required.
31. An average of 2.3 mg/l biochemical oxygen demand (BOD) against a target of 10mg/l and total suspended solids (TSS) of 1.6mg/l against a target of 15mg/l.
32. Since July 2011, the purification rate is no longer determined due to lack of a flow meter.
33. It should be noted, however, that due to the importance of the issue of wastewater usage in market gardening, ONAS has established partnerships with the Spanish Cooperation Agency through the FAO to promote market gardeners' access to quality water in peri-urban areas (Greater Niayes). In addition, other research programs on the safe reuse of wastewater for agriculture were ongoing (WHO/FAO/CREDI Project).
34. If the Tanzania Dar es Salaam WSS Project is excluded, this percentage rises to 83% of a target population of 2.2 million.
35. Only two households had latrines instead of the target of 200 households in Mankessim, and only 12 households had latrines compared with a target of 400 in Huni Valley. The low household latrine uptake adversely affected the testing of innovative technologies, which included ecological sanitation and reuse of urine and excreta/ feces.
36. The number of ventilated improved pit (VIP) latrines for public institutions was reduced by 47% on account of higher than anticipated costs.
37. Ten of the 16 RWSS projects targeted household latrines.
38. Excluding the larger number of latrines planned in the cluster projects (e.g., 440,000 and 950,000 latrines for Zambia National RWSS and Uganda RWSS, respectively) for which the level of achievement is not monitored and reported.
39. Household sanitation is by most national policies a household responsibility.
40. This was used by Ghana within the African Water Facility Trust Fund.



41. The term coverage refers to whether there is an improved water supply near a dwelling. In the case of rural areas, typically, countries have set standards for a maximum distance, such as 1 km or 1.5 km. However, there may be cases when a person or household has coverage but does not use the supply because they are excluded due to non-payment or for some other reason.
42. The estimation of the number of project cluster beneficiaries was based on the limited available data, and on assumed water use (potential coverage) rather than on the actual use of water (effective coverage). It is important to mention that in countries, such as Malawi and Uganda, the indicator of access is defined differently. For Malawi, it is about "Percentage of households within 500 m (rural) of an improved water source" or "Percentage of people whose average total time to collect drinking water (from the main source) is less than 30 minutes". For Uganda the access indicator is about "Percentage of people within 1 km (rural) of an improved water source. In addition, "Access coverage" is referred to in Ethiopia's universal action plan.
43. The policy and literature review report in page 36 states that: "It is reported that over 30% of water points in rural areas are non-functional ..."
44. In the Albertine region, functionality was low in some sub counties because the water was so salty that the communities had to abandon it. The technology of hand pumps was not suitable in the sub-counties of Rwebisengo and Kanara, located in Albert rift valley.
45. The project failed to effectively resolve the issue of the high iron content in the groundwater. As a result, most of the boreholes with high iron content were abandoned.
46. The analysis of self-reported data of the water point survey shows that about 89% of the water points are functional.
47. 90% of the water towers, 100% of the boreholes and 75.4% of the monitored standpipes are functional and in good condition overall.
48. Only one out of three laboratories built by the project for water quality control is operational (the one located in N'Djamena).
49. Although CWSTs acknowledged in interviews with the evaluation team that they were responsible for periodic testing of water quality at all water schemes, they stated that they were only able to occasionally carry out this mandate.
50. Although the National Water Quality Management Strategy required routine water quality monitoring by the districts, this was insufficiently implemented.
51. Cases were observed of water facility breakdowns not repaired, and of vandalism of water taps by the population which were not replaced.
52. The functionality of the water and sanitation infrastructure was reduced largely as a result of the breakdowns and the unused idle capacity of some facilities.
53. Although a spare-parts distribution network for hand pumps has been established at the regional level to ensure availability of spare-parts, the assessment found the network limited in providing necessary spares to adequately address the breakdowns in a timely manner. This contributed to the non-functionality of 40% of the water point system boreholes with hand pumps.
54. Breakdown of pumps, drilling generators and even a lack of fuel (diesel) were reported by the ASUFOR managers, especially in the southern intervention area of the sub-program.
55. It was also reported that some pit latrines had already collapsed, which may be linked to poor construction techniques and/or lack of effective supervision.
56. The participatory and interactive methods used to produce and communicate messages have practically not evolved since their introduction in the 1980s. SARAR (Self-esteem, Associative strength, Resourcefulness, Action planning, Responsibility) and PHAST (Participatory Hygiene and Sanitation Transformation) take the lion's share, along with the Community Led Total Sanitation method, which has been used in the sanitation sector for some years now (AfDB, 2012b).
57. World Bank national accounts data, and OECD National Accounts data files. Accessed at: <http://data.worldbank.org/indicator/NV.AGR.TOTL.ZS>
58. Irrigation schemes comprise: intake, earth dams, canals (main, secondary and tertiary), irrigation pumps, livestock watering system, and erosion control structures, etc.
59. This can include feeder roads, wells, toilets, storage and drying facilities, meetings sheds, day care centers, rural market structures, agro processing equipment, veterinary clinics, and milk collection centers, etc.

60. This site was given a priority because it presented some advantages including large surface area to be served (6,467 ha) and the number of farms to be served (967). The source is gravity feed with low cost while other identified sources needed pumping works hence they were costly.
61. In Kenya KOSFIP, the targeted infrastructure was not completed on time. It has remained incomplete due to lack of funds. Some farmers have spent their money to buy pumps while others use bucket irrigation thus the full potential of irrigation has not been realized.
62. The construction/rehabilitation of dams and water reservoirs for irrigation were canceled during the Mid-Term Review.
63. The Kenya Green Zones project did not include an objective to increase access to water as it was mainly concerned with water conservation.
64. The water-users' organizations have not yet gained the required financial autonomy. Due to the technology choice, the electricity costs of operating the system are high.
65. The Rice Farmers' Cooperative Society failed to provide adequate incentives for gate operators and other members of the Scheme Management Committee. Due to the lack of incentives, the operators did not maximize their efforts in drainage and irrigation as the high tides occurred late at night and early in the morning.
66. Including O&M facilitation, availability of recurrent funding, spare parts, workshop facilities etc.
67. Institutional and capacity development focus on the extent to which the Bank assistance has helped develop and improve the organizational structure, systems and procedures, and technical and managerial capability of the government or key sector institutions to formulate, design and implement interventions (project, strategies, policies, etc.).
68. Basket funds are a mechanism for pooling funds from various sources, typically governments, donors and the private sector to support priorities and ensure adequate resource allocation for agreed upon program areas. (<https://www.jhsph.edu/ivac/resources/basket-funds-a-pooled-arrangement-to-finance-primary-healthcare-delivery-and-address-the-funding-flow-in-nigeria/>).
69. The document states that "the Bank will support the engagement of the private sector in a wide range of water related economic and social infrastructure operations by expanding the scope of its two main financing channels to support the development of PPPs and direct private sector investments through dedicated lending".
70. Specifies that its African Financing Partnership will coordinate co-financing with private finance institutions to avoid duplication of efforts, and that feasibility studies and economic and sector work will play an important role in attracting investment finance.
71. This initiative that the Bank jointly initiated with the Bill and Melinda Gates Foundation aims to mobilize financial resources from various stakeholders to invest in successful pilot projects and sustainable sanitation business models in urban and peri-urban areas in Africa. The initiative aims to establish alternative financing structures, technical solutions and responsibilities of sector players.
72. The Bank is also developing, together with UNEP, a Water Supply and Sanitation Atlas to support policy formulation around the scaling-up of drinking water, wastewater and sanitation initiatives, particularly in urban areas. The Atlas will explicitly address the role and opportunities available to the private sector.
73. The agriculture sector accounted for 18% of the Bank operations during 2005-10, but only 3% of ESW. In contrast, the multisector accounted for 58% of ESW, and 20% of Bank operations over the same period. It is important to mention that the agriculture sector includes also agricultural operations from department other than OSAN.

74. See AHWS concerns in table 14, point 4 of this annex.
75. See AHWS concerns in table 14, point 3 of this annex.
76. With an adjusted definition of functionality to exclude low yielding (less than 10 liters per minute) and unreliable boreholes (down time of more than one month per year), non-functionality increased to 55 percent (Kebede et al., 2017). Research conducted by the RiPPLE program in SNNPR, for example, indicates that 43 to 65 percent of water points or schemes were nonfunctional. Moreover, problems are not restricted to more complex schemes with deep boreholes and motorized pumps. In Mirab Abaya woreda, for example, nearly 50 percent of offplot, communal water points equipped with hand pumps were not working at the time of survey (Calow et al., 2013)
77. In 2016, 40% of water points were reportedly non-functional, with many failing in the first year after construction.
78. Subsector monitoring data remain poor and inhibit efforts for needs-based planning and investment targeting. The de jure planning process is predicated on having a detailed understanding of water-point location and performance. However, district and subdistrict staff are not undertaking routine monitoring and are unclear on roles and responsibility for data collection as well as how the database is updated with the information collected. This means district, regional, and national stakeholders do not have a clear picture of the quantity, location, or functional status of the water points that exist.
79. More than 38 percent of all improved water points and around 46 percent of all water schemes in Nigeria are nonfunctional (deemed out of service in 2015, at the time of the survey). Further, nearly 30 percent of water points and water schemes appeared to fail in the first year of operation after construction, presumably because of poor build quality (World Bank, 2017).
80. It has been estimated that the handpump, which provides nearly half of the protected water supplies for Africa's rural population, has a functionality rate of about 66% (RSWN, 2010).
81. Sources of data include project-level evaluations: PARs, PCRs, PERs, PPERs, Impact Evaluations, and IDEV calculations.
82. Ten of the 16 RWSS projects targeted household latrines.
83. Excluding the larger number of latrines planned in the cluster projects (e.g., 440,000 and 950,000 latrines for Zambia National RWSS and Uganda RWSS, respectively) for which the level of achievement is not monitored.
84. Household sanitation is by most national policies a household responsibility.
85. If the Tanzania Dar es Salam WSS Project is excluded, this percentage rises to 90% of a target population of 5.1 million.
86. If the Tanzania Dar es Salam WSS Project is excluded, this percentage rises to 83% of a target population of 2.2 million.



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African Development Bank





## About this Evaluation

This report summarizes the findings, lessons and recommendations from an independent evaluation of the support provided by the African Development Bank Group to the water sector from 2005 to 2016. This includes support for Water Supply and Sanitation (WSS, UA 3.7 billion over the evaluation period) and for Agricultural Water Management (AWM, UA 2.2 billion). It aimed to inform the Bank's strategies and operational approach to water sector assistance by taking stock of the results of the Bank's assistance and drawing lessons for future work.

All public and private sector operations in WSS and AWM, and institutional strengthening and capacity building activities, approved during the evaluation period are included in this evaluation - 274 WSS operations and 144 AWM operations in all. The evaluation is based on a policy and literature review; a portfolio review; 41 project evaluation reports across 23 countries; and 10 country case studies. The sector evaluation is supported by three stand-alone project cluster evaluations, on rural WSS, urban WSS and AWM.

The Bank's water sector interventions were found to be relevant, and they delivered substantial outputs, although output levels remained below expectations. Achievement of outcomes was found moderate (particularly in the area of sanitation), leading to overall effectiveness being rated as unsatisfactory. Efficiency was likewise found unsatisfactory, and the results achieved are unlikely to be sustained. Multiple internal and external factors contributed to this results performance, including those related to development partnerships, knowledge work, and managing for development results. The evaluation makes recommendations in the areas of policy and strategy, participatory approach, results measurement and knowledge sharing.



# IDEV

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