

Validation Report
May 2022

Bangladesh: Dhaka Water Supply Sector Development Program

Reference Number: PVR-844
Project Number: 39405-013
Loan Numbers: 2382 and 2383



Raising development impact through evaluation

ABBREVIATIONS

ADB	–	Asian Development Bank
AEFS	–	audited entity financial statement
DMA	–	district-metered area
DMF	–	design and monitoring framework
DWASA	–	Dhaka Water Supply and Sewerage Authority
EIRR	–	economic internal rate of return
FY	–	fiscal year
GAP	–	gender action plan
km	–	kilometer
LGD	–	local government division
MODS	–	management, operation, and distribution services
NRW	–	nonrevenue water
O&M	–	operation and maintenance
PCR	–	project completion report
PMU	–	project management unit
SDP	–	sector development program

NOTE

In this report, “\$” refers to United States dollars.

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PROJECT BASIC DATA

Project number	39405-013	PCR circulation date	28 Sep 2021	
Loan numbers	2382/2383	PCR validation date	May 2022	
Project name	Dhaka Water Supply Sector Development Program			
Sector and subsector	Water and other urban infrastructure and services	Urban policy, institutional, and capacity development Urban water supply		
Strategic agenda	Environmentally sustainable growth			
Safeguard categories	Environment	B		
	Involuntary resettlement	B		
	Indigenous peoples	C		
Country	Bangladesh		Approved (\$ million)	Actual (\$ million)
ADB financing (\$ million)	ADF: 00.00	Total project costs	262.75	253.68
	OCR: \$200	Loan	200.00	189.54
		2382	150.00	139.52
		2383	50.00	50.02
		Borrower	62.75	64.14
		2382	62.75	64.14
		2383	0.00	0.00
	Beneficiaries	0.00	0.00	
	Others	0.00	0.00	
Cofinancier	—	Total cofinancing	0.00	0.00
Approval date	10 Dec 2007	Effectiveness date	11 Mar 2008	14 Dec 2008
Signing date	12 Dec 2007	Loan closing date	30 Jun 2014 30 Jun 2014	30 Jun 2016 30 Jun 2014
		2382		
		2383		
		Financial closing date		
		2382	—	22 Jan 2020
		2383	—	6 Oct 2014
Project officers ^a	T. Ueda M Tachiiri M. Sharma A. Matsunaga P. M. Almeida	Location	From	To
		ADB headquarters	Jul 2007	Dec 2007
		ADB headquarters	Jan 2008	Jun 2011
		ADB headquarters	Jun 2011	Feb 2018
		ADB headquarters	Mar 2018	Jan 2019
		ADB headquarters	Feb 2019	Jan 2020
IED review				
Director	N. Subramaniam, IESP			
Team leader	J. Jovellanos, IESP ^b			

ADB = Asian Development Bank, ADF = Asian Development Fund, IED = Independent Evaluation Department, IESP = Sector and Project Division, OCR = ordinary capital resources, PCR = project completion report.

^a Data provided by the PCR team.

^b Team members: B. Nguyen (quality reviewer), F. De Guzman (Senior Evaluation Officer), J. Supangco and J. Eerikainen (consultants).

I. PROJECT DESCRIPTION

A. Rationale

1. Bangladesh has one of the world's largest populations. At project appraisal in 2007, its population was about 140 million and estimated to reach 166.5 million by 2020, of which Dhaka,

its capital, was to have a share of about 13%.¹ As of 2004, about 25% of Bangladesh's population lived in urban areas which were having constraints on safe and reliable water supply. The Dhaka Water Supply and Sewerage Authority (DWASA) served around 70% of the urban population. DWASA's service coverage was estimated to decline to 48%. With increasing population, this could leave about 52% of the urban population with untreated water. Also, the water supply and sewerage authorities and pourashavas (peri-urban towns) were facing institutional and financial constraints that hindered the management, user charge recovery, and control of nonrevenue water (NRW).

2. The government requested the Asian Development Bank's (ADB) support through a sector development program to address the constraints; needed policy reforms; and investment requirements. The Dhaka Water Supply Sector Development Program (the project) was to support reforms in the urban water supply sector by assisting the government to improve the management and operation of urban water supply institutions. The project had three components: (i) distribution system and quality improvement; (ii) capacity building and institutional strengthening; and (iii) project management and implementation support.²

3. The sector development program included a program loan and a project investment loan. The financing modality was appropriate as the project would assist in developing the water supply sector by financing part of the investment requirements of several subprojects to be financed through the project loan. The program loan component was to improve sector policies and strengthen institutional capacity.

B. Expected Impact, Outcome, and Outputs

4. The project's envisaged impact was sustained economic growth and public health improvement in the country's urban centers, specifically in the Dhaka metropolitan area. The expected outcome was provision and sustainable operation of improved water supply services through rehabilitation and improvement of management and operation in the urban water supply institutions particularly in Dhaka.

5. The envisaged outputs under the program component were increased autonomy, improved local governance, and strengthened local institutional management framework; improved sector strategy and plan; improved financial sustainability in urban water supply sector; and strengthened DWASA organizational structure and financial management. The expected project loan outputs had three components: distribution system and quality improvement; capacity-building and institutional strengthening; and project management and institutional support.

C. Provision of Inputs

6. The project comprised two loans that were both approved in December 2007 and became effective a year later. The project loan was closed financially in January 2020 after one extension while the program loan was closed earlier in October 2014. The first loan's closing date was delayed due to slow start-ups associated with procurement delays; lengthy processes for obtaining permits from local authorities; additional pipeline length and service connections; among

¹ Bangladesh Bureau of Statistics, Statistics and Informatics Division, Ministry of Planning. 2021. *Bangladesh Statistics 2020*. Dhaka.

² ADB. 2007. *Report and Recommendation of the President to the Board of Directors: Proposed Loans and Technical Assistance Grant People's Republic of Bangladesh: Dhaka Water Supply and Sector Development Program*. Manila.

other things.³ Delays were also attributed to the changes in key government officials and DWASA management, as a result of the elections and delay in consultant recruitment and mobilization, and procurement of contractors due to DWASA's lack of experience, extended contract negotiations; and slow approval by DWASA Board and the Local Government Division (LGD).⁴ The LGD delayed two approved major civil works contracts that were subject for ADB's financial evaluation as it insisted to retender the contracts to which ADB objected. Furthermore, approval of the two contracts were delayed with the LGD and the Cabinet Committee on Government Purchase for more than 3 months for unspecified reason.⁵

7. The estimated project cost was \$262.75 million at appraisal. ADB was to fund \$200 million, of which 25% as a program loan and the rest as a project loan. The counterpart was to fund the balance of \$62.75 million. The total cost at completion decreased by 3.5% to \$253.68 million. ADB's disbursement comprised 75% and borrower the remaining balance. The financing cost ratio at appraisal between ADB and borrower was 76:24. At completion, it was 75:25 due to the higher borrower cost and lower loan utilization. Under the project loan, there were significant increases in civil works cost of about 7% (\$4.58 million) and equipment cost of 3,422% (\$12.0 million). The higher costs of civil works and equipment were due to the additional pipeline length and service connections, detailed design revisions, and higher bid prices.

8. On consulting services, it was estimated that the project would require 183 person-months of international consulting services and 664 person-months of domestic consulting services for the design and management; 80 person-months of international consulting services and 390 person-months of domestic consulting services for financial and capacity building; and 6 person-months of international consulting services and 36 person-months of domestic consulting services. However, the project completion report (PCR) did not provide the person-months of actual consultancy services mobilized for the project.⁶

9. The project was classified category B for both the environment and involuntary resettlement, and C for indigenous peoples. An initial environmental examination was prepared and found that the project would not have any significant negative environmental impacts. Environmental management plans included in the civil works contracts would mitigate any potential adverse environmental impacts that could be generated during construction. A resettlement framework was prepared during appraisal to guide the preparation of individual resettlement plans. The project did not adversely affect the indigenous peoples.

10. The project was categorized effective gender mainstreaming and a gender action plan (GAP) was developed and implemented in accordance with ADB policy. The GAP was revised following the government's request to make the activities and targets specific, measurable, achievable, relevant, and time bound. The revised GAP had 21 activities and 11 targets including the recruitment of 15% women officials in different levels of project implementation and women officials in project management unit (PMU); community-based organizations (CBO) including 30%

³ On the lengthy processes for obtaining permits, one major factor was local authorities' delay, such as the Dhaka City Corporation, in granting permits to contractors for road cutting. Other delaying factors were the binding contract effective date, performance guarantee and advance payment submission, and late payment of taxes and duties. These constrained contractors' financial availability and cashflow (footnote 15).

⁴ ADB (South Asia Department). 2009. Consultation Mission to Bangladesh: Dhaka Water Supply Sector Development Program. Back-to-office report. 29 March–9 April (internal).

⁵ ADB (South Asia Department). 2011. Consultation Mission to Bangladesh: Dhaka Water Supply Sector Development Program. Back-to-office report. 17–21 September 2011 (internal).

⁶ ADB. 2021. *Completion Report: Dhaka Water Supply and Sector Development Program in Bangladesh*. Manila.

women for identifying beneficiaries and 30% women members in a CBO; ensuring the employment of 25% women in earth work and maintenance of core labor standard; establishment of 2,000 house connections in different slum areas; and ensuring gender-related clauses (women involvement, privacy, wage rate) in all bidding or related agreements. GAP implementation resulted in the completion of 21 activities and achievement of 11 quantitative targets. Targets 10 and 11 were not achieved: less than 2,000 house connections were established in the different slum areas (target 10) and the required gender-related clause was included only in one contract agreement (target 11). Collecting, collating, and maintaining gender-based disaggregated information (activity 20) was not completed as not all project reports included this information.

11. An advisory technical assistance (TA) supported the project.⁷ It assisted the government, including assistance to the LGD and DWASA in preparing and implementing key policy reforms. DWASA benefited from the TA in improving its outdated accounting and management systems, technical preparation for optimization measures on existing water supply sources, and supporting the start-up of project implementation.

D. Implementation Arrangements

12. The implementation arrangements were as envisaged. For the program component, the Finance Division of the Ministry of Finance and the LGD of the Ministry of Local Government, Rural Development, and Cooperatives were the executing agencies, with DWASA serving as implementing agency for specific activities as noted in the policy matrix.⁸ For the project component, DWASA was the concurrent executing and implementing agency. An interministerial project steering committee (PSC) provided policy guidance and project coordination. A PMU was to report to the DWASA deputy managing director. In the four project zones, project coordination units were created and headed by a zonal executive engineer for management, operation, and distribution services (MODS). The design and management consultants and the financial and capacity building consultants supported the PMU, the project coordination unit, and the MODS; while the project performance monitoring and evaluation consultants supported the PMU.⁹ This validation finds the implementation arrangement appropriate.

13. There were 63 loan covenants and 21 policy actions under the project. Of the 63 loan covenants, 35 were complied with, 26 were complied with but with delays, and 2 were partly complied with. The two covenants partly complied with pertained to (i) PSC meetings not held regularly, as required, and (ii) delayed submission of audited project financial statement (APFS) and non-submission of the audited entity financial statement (AEFS) for fiscal year (FY) 2013.¹⁰ Of the 21 tranche policy actions, 4 were complied with and 17 were complied with but with delays.

II. EVALUATION OF PERFORMANCE AND RATINGS

A. Relevance of Design and Formulation

⁷ The TA was rated successful. It achieved most of the objectives and assisted the government and DWASA in achieving the policy reforms. ADB. 2008. *Technical Assistance Completion Report: Management Support for Dhaka Water Supply and Sewerage Authority in Bangladesh*. Manila.

⁸ Footnote 2, Appendix 4.

⁹ ADB. 2008. *Project Administration Memorandum: Dhaka Water Supply and Sector Development Program*. Manila.

¹⁰ The loan covenants that were partially complied: (i) PSC was to hold its first meeting within 3 months after the effective date and meet at least twice a year. The Project executing agency shall provide ADB with the minutes of PSC meetings (Schedule 5, para. 3); (ii) DWASA shall furnish to ADB, promptly after their preparation but in any event not later than six months after the close of the fiscal year to which they relate, certificate copies of such audited accounts and financial statements and the report of the auditors relating thereto... (PA Section 2.09 (a)).

14. The PCR rated the project highly relevant as the target outcomes were aligned with the country's development priorities and with ADB's country and sector strategies. ADB's Country Strategy and Program for Bangladesh, 2006–2010 (CSP 2006–2010) highlighted the need to support policy and institutional reform to improve sector governance and efficiency in urban water supply, while ADB's Urban Sector Strategy 1999 and Strategy 2020 focused on institutional and policy reforms to enhance operational efficiency and sustainability in infrastructure projects, and improve the delivery of infrastructure services.¹¹ The project was consistent with the government's seven-point agenda for poverty reduction—National Poverty Reduction Strategy 2005—and priorities for the urban water supply sector that the government laid out in its Sector Development Program—Water and Sanitation Sector 2006.¹²

15. The PCR considered the project highly innovative with its introduction of the district-metered area (DMA) approach and use of trenchless technology in 90% of the most congested streets in Dhaka, which resulted in reduced environmental, resettlement, and traffic disruption through minimal excavation.¹³ It also noted the project's transformational impact in DWASA's turnaround initiative. The program component design was appropriate as the policy matrix and design and monitoring framework (DMF) set out conditions and target indicators needed for the adoption of long-term policy reforms and promoting sustainable urban water supply. The project achieved DMF targets, while the number of DMAs was reduced.

16. This validation assesses that the project's design was appropriate. Its combination of policy reforms and investment components was suitable to Dhaka's water supply sector since the policy, governance, institutional, and management changes complemented the project's investments. It also notes the piloting on the use of the DMAs and the trenchless technology, which could be adopted and scaled up on similar or related projects in the future. Given the project's alignment with ADB's and the government's strategies and development priorities, and its innovative features, this validation assesses the project highly relevant.

B. Effectiveness in Achieving Project Outcome and Outputs

17. The PCR rated the project effective with achievement of five of the six outcome target indicators.¹⁴ One outcome indicator pertaining to meeting the World Health Organization's guidelines was partially achieved (68%), with only 106,662 service connections (target: 157,000) provided for the improvement of water quality on a round-the-clock basis. On output indicators, 43 of 52 were fully achieved while one target substantially achieved (i.e., 1,260 kilometers (km) (target: 1,536 km) of water distribution network were rehabilitated) and seven output targets were not fully achieved: 1,260 km (target: 1,536 km) of water distribution network were rehabilitated; 1,196 km (target: 1,600 km) of tertiary network were provided; rehabilitation of 106,662 service connections (target: 157,000) including new water meters; improved water

¹¹ ADB. 2005. *Country Strategy and Program in Bangladesh, 2006–2010*. Manila; ADB. 1999. *Urban Sector Strategy*. Manila; and, ADB. 2008. *Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank, 2008–2020*. Manila.

¹² Government of Bangladesh. 2005. *Poverty Reduction Strategy*. Dhaka; and Local Government Division of Bangladesh. 2005. *Sector Development Program, Water and Sanitation Sector in Bangladesh*. Dhaka.

¹³ DMAs are areas in a water distribution network isolated from the whole of the system. The flows in and out of the DMA can be metered or quantified. DMAs provide a more accurate way of tracking water user and loss in the system. https://search.yahoo.com/search?p=district%20metering%20area%20definition&fr=yset_chr_cnewtab&type=newtabv2Aug27&extInst=1

¹⁴ The outcome indicators achieved or exceeded included strengthened governance and organizational structure of DWASA; improved financial management and operational capacity of DWASA; improved access to water supply for more than 8 million people in the project areas; DWASA fully recovering costs for its operation and maintenance after adjusting for inflation; and collection efficiency of DWASA maintained above 90% (footnote 15).

connections and supply points for 1,274 registered slum areas (target: 2,000); installation of 200 chlorination units (target: 300) in water supply points; fielding of key consultants in July 2009 (target: January 2009); recruitment of key consultants and awarding of civil works packages (delayed); and completion of detailed feasibility study for a future water treatment plant in 2011, however, tender documents and bidding were processed under a different loan.¹⁵ Procurement of leak detection and other operation and maintenance (O&M) tools were not made due to lack of funds.

18. The PCR noted that the project had improved the water quality, quantity, pressure, and reliability in the target areas. These concerned unregistered connections that were either regularized or removed, and expanded coverage area; reduction of NRW from 40%–50% to 2%–14% in 2016 in commissioned DMAs; improvement in the metering and bill collection, and the reduction in DWASA operating ratio; and improved access to safe water for more than 10 million people, with supply operating more than 20 hours per day on average. On the institutional aspect, DWASA's governance and organizational structure was approved and implemented in 2007; computer-based financial management systems including double entry accounting system was implemented; quality assurance and O&M manuals were delivered; 5-year capacity building program for pourashava water sections and DWASA was implemented; a water conservation plan was implemented; tariff structure reform significantly improved water sector planning, management, financing, and O&M in Bangladesh; and the training the O&M staff and plumbers enhanced DWASA's operational management capacity.

19. Based on the project review missions, there were no environmental concerns encountered during the field site visits during implementation. The project had no significant adverse environmental impacts. The environmental management plan embedded in the civil works contracts mitigated site-specific impacts. It established a grievance redress mechanism with institutional safeguards. It did not require semiannual monitoring reports with regular reporting and disclosure on the ADB website that started only in the second semester of 2012. A resettlement framework was prepared during appraisal to guide the preparation of resettlement plans for each affected zone. With the change to design–build contracts, ADB approved six resettlement plans after contract award. The GAP did not achieve its two targets. Activity 20 was not completed as not all project reports included disaggregated data and information.

20. This validation finds that the project substantially achieved the intended project results. The outcome and output targets were mostly realized. This validation assesses the project effective.

C. Efficiency of Resource Use

21. The PCR rated the project efficient as the recalculated economic internal rate of return (EIRR) was 14.35%, lower than the 16.70% estimated at appraisal. However, the recalculated EIRR exceeded the social discount rate of 12%. The EIRR used financial costs (converted to economic costs using applicable and accepted conversion factors) and estimated replacement costs of meters and valves. This validation notes that the lower EIRR at completion was due to the higher capital and O&M costs and longer implementation period compared to the appraisal estimates. The PCR also applied a different approach in calculating economic benefits, although it was not adequately explained in the PCR, particularly the basis of the assumptions and values

¹⁵ ADB. 2013. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to Bangladesh for the Dhaka Environmentally Sustainable Water Supply Project*. Manila.

used such as willingness to pay.¹⁶ The PCR should have provided more details on the benefits identified and the methodology used for estimation. For example, PCR's estimate of savings from health costs overestimates health benefits as the methodology used attributed 34% of the decrease in waterborne diseases to the project without validating the assumption. On using willingness to pay to estimate the average cost of procuring water from piped water supply, the willingness-to-pay survey and estimation was not conducted under the advisory TA; hence, methodological concerns on the values used continue to persist and made the process of estimating benefits unreliable.¹⁷

22. The PCR noted that process efficiencies were satisfactory despite implementation delays and cost overruns. This validation finds this conclusion lacking with evidence, given that project delays were due to inefficiencies in processing permits, bid evaluation, and contracting. The LGD and Central Committee for Government Purchases took some time to provide their approval as the LGD was not keen to expedite the process in delegating operational matters to DWASA.¹⁸ Consultant procurement was delayed due to DWASA's lack of experience, extended contract negotiations and DWASA Board's and the LGD's approval were slow;¹⁹ and acquiring road cutting permission from the Dhaka City Corporation was also delayed.²⁰ Given that the recalculated EIRRs were higher than the 12% social discount rate, this validation assesses the project efficient.

D. Preliminary Assessment of Sustainability

23. The PCR rated project likely sustainable. It noted DWASA's institutional capacity and commitment to sustain the reform results. The recalculated financial internal rate of return was 5.22%, which was higher than the 3.99% estimated at appraisal. The reestimated weighted average cost of capital was 3.26%. A 0.87 operating ratio and a 1.48 interest coverage ratio, based on its 2019–2020 financial statements, indicated DWASA's sound financial position. The PCR noted DWASA's sustainability had improved due to the reduction of NRW; introduction of consumer metering, computerized billing, and more payment options that improved revenues from 64% to 98%; and installation of new connections and regularizing illegal ones. Assigning additional human resources for DMA management enhanced O&M efficiency. Operation manuals and training for MODS staff and DWASA enhanced efficiency and sustainability.

24. To enhance DWASA's financial sustainability, tariff increased by 5% annually from 2005 to 2020, except for 2015, 2017, and 2020 when tariffs increased by 10.4%, 17.8%, and 25% respectively. These recovered all costs, including recurrent, depreciation, interest, and inflation adjustments. This validation notes that the approved DWASA's organogram, improved staff training facilities and increase in the number of trainings and courses offered, and the recruitment of additional qualified staff for its various offices enhanced DWASA's performance. The combination of policies and investments ensured that stable governance, institutional structure, capacity building programs, and upgraded financial systems could provide a sustained

¹⁶ Footnote 6.

¹⁷ Component A targets were partially achieved, as a comprehensive survey to assess the willingness to pay and affordability in Dhaka, and extensive stakeholder consultations, including focus group discussions on the proposed tariff structures and options were not conducted (PCR, Appendix 9).

¹⁸ ADB (South Asia Department). 2008. Consultation Mission to Bangladesh: Dhaka Water Supply Sector Development Program. Back-to-office report. 27–31 January (internal).

¹⁹ Footnote 5.

²⁰ ADB (South Asia Department). 2009. Consultation Mission to Bangladesh: Dhaka Water Supply Sector Development Program. Back-to-office report. 15–23 July 2009 (internal).

operational environment for DWASA that could not be achieved through investments alone. Thus, this validation assesses the project likely sustainable.

III. OTHER PERFORMANCE ASSESSMENTS

A. Preliminary Assessment of Development Impact

25. The PCR rated the project's development impact highly satisfactory in achieving sustained economic growth and public health improvements in urban centers, particularly in the Dhaka metropolitan area. However, this validation notes that the PCR's DMF did not have impact indicators. The report and recommendation to the President's impact indicator was, by 2016 or 3 years after project completion, current economic growth at 6.5% was maintained and waterborne diseases were reduced by 20% in the Dhaka metropolitan area.²¹ The project was completed in June 2016 and the average gross domestic product growth for the period 2016–2019 was 6.68%, which exceeded the 6.5% target.²² Data on waterborne diseases for 2016–2019 in the Dhaka metropolitan area was not available.

26. The PCR enumerated the government's success in implementing policy reforms, institutional development, and physical interventions. However, it was difficult to attribute these in terms of directly contributing to the envisaged impact, due to the other factors affecting economic growth and public health. On balance, this validation assesses the project's development impact satisfactory.

B. Performance of the Borrower and Executing Agency

27. The PCR rated the performance of the borrower and executing agency satisfactory. The PCR noted that DWASA was committed to the project during design and implementation stages. Minimal adverse impacts occurred from delays in the procurement and acquisition of road-cutting permits, poor cost estimation, and late payment of taxes and duties. The managing and project directors monitored project progress and participated in the progress review meetings. DWASA complied with most loan and project covenants, and regularly submitted progress, environmental, and social monitoring reports. This validation notes that the delays in procuring and issuing road-cutting permits affected project implementation substantially and were the main causes of project delays. It noted that the project required a 2-year extension to complete most project outputs, while other outputs were transferred to another loan.

28. Although DWASA expedited the processing of project documents, these were delayed at the LGD and the Cabinet Committee on Government Purchase as DWASA reorganized based on its approved organogram. There were changes in key government posts and DWASA management after the December 2008 elections. Thus, government processes contributed to project delays. This validation finds the executing agency exerted considerable effort in expediting project processing and implementation. However, it was constrained by factors outside of its control as it had to follow existing government procedures. This validation assesses borrower and executing agency performance satisfactory.

C. Performance of the Asian Development Bank and Cofinanciers

²¹ Footnote 2.

²² Trading Economics. Bangladesh GDP. <https://tradingeconomics.com/bangladesh/gdp>

29. The PCR rated ADB's performance satisfactory. ADB mobilized 21 supervisory missions to monitor implementation. The PCR noted that ADB acted promptly on requests and reviewed and/or approved bid documents, contract awards, variations, loan reallocations, partial cancelations, and loan extension in an expeditious manner. ADB missions lacked participation of safeguards specialists, although safeguard concerns were discussed properly. ADB supported the contract management, financial reform, and enhanced institutional capacity through seminars and training on procurement and disbursement. ADB also communicated with the implementing agency and commented on the APFS received and status of audit observations. Based on ADB performance's assessment, this validation assesses ADB performance satisfactory.

D. Others

30. The government prepared its project completion report. On the four major assessment criteria, the government rated the project highly relevant, effective, efficient, without rating on sustainability, and an overall assessment was provided. The performance of the borrower and executing agency was rated satisfactory and ADB performance was assessed highly satisfactory.

IV. OVERALL ASSESSMENT, LESSONS, AND RECOMMENDATIONS

A. Overall Assessment and Ratings

31. The PCR rated the project successful overall. It rated the project highly relevant, effective, efficient, and likely sustainable. This validation assesses the project highly relevant. The project design was appropriate with innovative features, and appropriate mix of policy reforms and project investments. The project was effective as it achieved most of its outcome targets and outputs. The project was efficient with the recalculated EIRR higher than the social discount rate. The project was assessed likely sustainable as the recomputed financial internal rate of return was higher than the reestimated weighted average cost of capital. The policy actions and capacity building component ensured the sustainable operation of DWASA. Overall, this validation assesses the project successful.

Overall Ratings

Validation criteria	PCR	IED review	Reason for disagreement and/or comments
Relevance	Highly relevant	Highly relevant	
Effectiveness	Effective	Effective	
Efficiency	Efficient	Efficient	
Sustainability	Likely sustainable	Likely sustainable	
Overall assessment	Successful	Successful	
Preliminary assessment of impact	Highly Satisfactory	Satisfactory	Of the two impact targets, only one was available and met.
Borrower and executing agency	Satisfactory	Satisfactory	
Performance of ADB	Satisfactory	Satisfactory	
Quality of PCR		Satisfactory	Para. 35.

ADB = Asian Development Bank, DMA = district-metered area, IED = Independent Evaluation Department, PCR = project completion report, NRW = nonrevenue water.

Source: ADB (IED).

B. Lessons

32. The PCR identified several lessons from issues during project implementation.²³ This validation adds one sector and one project-level lesson. At the sector level, it is imperative that critical policies, governance, and institutional and regulatory aspects are addressed to optimize the investment projects' benefits. This is specifically crucial in instances where such aspects have remained unacted either due to lack of staff capacity or institutional complacency. One approach would be to incentivize relevant institutions to pursue the policy actions to completion such as providing a TA or program loan. At the project level, one approach to changing institutional mindset especially in the use of new technology would be a small-scale adaptation that is monitored and used as a sample case in the training conducted. The adoption of the DMA in monitoring water consumption and minimizing NRW was expedited through a small-scale pilot DMA to demonstrate its effectivity in controlling NRW. The same for trenchless technology where the most effective method for gaining acceptance was through a demonstration project or allowing the contractors to use the technology at their own risk without any decrease in contract price.

C. Recommendations for Follow-Up

33. The PCR made several recommendations to improve project implementation in the future. This validation recommends that ADB, through the Bangladesh Resident Mission, monitors the performance of DWASA on NRW and sufficiency of water tariffs for O&M, and, if possible, interest and amortization of loans, and the accumulation of a capital fund for future investments.

V. OTHER CONSIDERATIONS AND FOLLOW-UP

A. Monitoring and Reporting

34. DWASA submitted project quarterly progress reports on a regular and timely basis. It also submitted audited financial reports from FY 2008 to 2016, except the AEFS for FY2013; and three APFSs on time, while six were late. All AEFSs were delayed except for the 2008 statement. DWASA conducted baseline and end-line surveys as required under the loan agreement.

B. Comments on Project Completion Report Quality

35. This validation assesses the PCR's quality satisfactory. The PCR provided a comprehensive understanding and assessment of the project implementation experience.

²³ Some important lessons include (i) high readiness for loan approval would have mitigated delays in implementation; (ii) cost estimate needs to include additional contingencies to reduce the risk of cost overruns; (iii) midterm review mission made in 2012 could allow timely reassessment of the DMF and disbursement targets; (iv) contractors need to submit performance and advance payment securities on a prescribed date to minimize start-up delays; (v) during appraisal, a memorandum of understanding with time frames and fee computations needs to be agreed upon and incorporated in the legal agreements for obtaining permits; (vi) executing agency staff need to be involve earlier during construction and be more skilled in DMA management; (vii) assessment of nongovernment organization's effectiveness has to be strengthened; (viii) creating awareness among affected persons, ensuring stakeholder participation, and conducting community consultation on construction schedules would mitigate livelihood impacts and generated community support; (ix) granting legal water connections needs to be inclusive and contribute to the network's technical viability; (x) projects must allocate resources and provide for gender-based disaggregated baseline and end-line data collection surveys to ensure accuracy; and (xi) as an innovation in Bangladesh, the DMA approach poses challenges in terms of system sustainability, hence, the government and DWASA need to ensure funds are committed to regularly train staff to operate the system efficiently.

It followed the guidelines to prepare the PCR. However, there were few shortcomings. The EIRR's recalculation should have utilized the same methodology as used at appraisal. Using a different methodology in quantifying benefits provided a different perspective in the estimating benefits. Given the approach adopted, the PCR should have explained further the methodology used, including the assumptions and references. The health benefits may have been overestimated and adequate explanation was required.

C. Data Sources for Validation

36. Data sources used for this validation included the report and recommendation of the president, ADB's and government's PCRs, back-to-office reports, government and ADB strategies and policies, government project reports, and ADB guidelines.

D. Recommendation for Independent Evaluation Department Follow-Up

37. None.