

Validation Report
August 2021

Bangladesh: Khulna Water Supply Project

Reference Number: PVR-792
Project Number: 42171-013
Loan Number: 2756

Independent
Evaluation  ADB

Raising development impact through evaluation

ABBREVIATIONS

ADB	–	Asian Development Bank
DMF	–	design and monitoring framework
EIRR	–	economic internal rate of return
FIRR	–	financial internal rate of return
GAP	–	gender action plan
IEE	–	initial environmental examination
JICA	–	Japan International Cooperation Agency
km	–	kilometer
KWASA	–	Khulna Water Supply and Sewerage Authority
LGD	–	Ministry of Local Government, Rural Development and Co-operatives
O&M	–	operation and maintenance
PCR	–	project completion report
PMU	–	project management unit
RRP	–	report and recommendation of the President
SDR	–	special drawing right
TA	–	technical assistance
WACC	–	weighted average cost of capital

NOTE

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

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PROJECT BASIC DATA

Project number	42171-013	PCR circulation date	22 Dec 2020	
Loan number	2756	PCR validation date	Aug 2021	
Project name	Khulna Water Supply Project			
Sector and subsector	Water and other urban infrastructure and services	Urban policy, institutional and capacity development Urban water supply		
Strategic agenda	Environmentally sustainable growth Inclusive economic growth			
Safeguard categories	Environment		B	
	Involuntary resettlement		A	
	Indigenous peoples		C	
Country	People's Republic of Bangladesh		Approved (\$ million)	Actual (\$ million)
ADB financing (\$ million)	ADF: 75.00	Total project costs	363.53	323.73
	OCR: 0.00	Loan	75.00	64.04
		Borrower	104.57	119.05
		Beneficiaries	0.00	0.00
		Others	0.00	0.00
Cofinancier	Japan International Cooperation Agency	Total cofinancing	183.96	138.64
Approval date	14 Jun 2011	Effectiveness date	25 Sep 2011	4 Jan 2012
Signing date	27 Jun 2011	Loan closing date Financial closing date	30 Jun 2018	30 Jun 2019 29 Dec 2019
Project officers	Md. Islam	Location Bangladesh Resident Mission	From Jan 2012	To Nov 2013
	E. Morsheda	Bangladesh Resident Mission	Nov 2013	Mar 2019
	Md. Alam	Bangladesh Resident Mission	Mar 2019	May 2020
IED review Director Team leader	N. Subramaniam, IESP S. Palle Venkata, Senior Evaluation Specialist, IESP*			

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.

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I. PROJECT DESCRIPTION

A. Rationale

1. Limited access to water supply was a critical issue facing residents in Khulna, Bangladesh, where piped supply was available to less than 25% of the population. The water distribution system was old and poorly maintained. Water losses were 36%, and supply was intermittently available only for 5.3 hours per day, while quality was low. Surveyed households (59%)

considered the water dirty, and 55% rated the service unsatisfactory.¹ Alternative water sources, such as shared public taps and privately built tube wells, were widely used throughout the city. Households not connected to the system often spent an average of 90 minutes per day fetching water. This posed a particular burden on women, who usually managed potable water for the whole family.

2. Khulna's major source of water supply was groundwater. Total abstraction of groundwater by deep, privately built, and hand-pumped tube wells was 113,000 cubic meters per day, putting the sustainability of its groundwater at risk due to overextraction. Khulna is also vulnerable to the impacts of climate change, where sea level rise is expected to exacerbate salinity intrusion in river water. The improvement of the water supply system in Khulna was essential.

3. In 2011, the government requested the Asian Development Bank (ADB) for a loan of \$75 million equivalent to SDR46.93 million from its concessional ordinary capital resources to finance the Khulna Water Supply Project. The project aimed to develop a sustainable water supply system in Khulna by augmenting water sources, extending the distribution network, and strengthening corporate management.² The government as the borrower, relented ADB loan proceeds to Khulna Water Supply and Sewerage Authority (KWASA), which was established in February 2008.³ Japan International Cooperation Agency (JICA) cofinanced the project and a bilateral loan agreement was approved between the government and JICA in March 2011. The ADB loan and JICA loan targeted different outputs of the project. Coordination arrangements for cofinancing were detailed in a procedural agreement between ADB and JICA.

B. Expected Impact, Outcome, and Outputs

4. According to the project's design and monitoring framework (DMF), as shown in the report and recommendation of the President (RRP), the project's expected impact was improved urban services in Khulna. Its intended outcome was expanded and reliable access to potable water in Khulna. There were three targeted outputs: (i) augmentation and sustainable management of water sources in Khulna, (ii) extension of distribution system and efficient water supply delivery in Khulna, and (iii) professional and sustainable management of the water supply system by KWASA.

C. Provision of Inputs

5. ADB approved the project and signed the loan agreement in June 2011. The loan became effective in January 2012, more than 6 months after signing. The project was completed in December 2018, 1 year later than scheduled. It was due to a 2-year delay in land acquisition stemming from the involvement of several government agencies and the need to sign memorandums of understanding with the Roads and Highways Department and Bangladesh Railway before major civil works contracts could be implemented. The loan closing date was extended from June 2018 to June 2019,⁴ and it financially closed in December 2019 when ADB cancelled the undisbursed balance of SDR134,732.

¹ The survey covered 3,000 households randomly selected in the city. It was conducted under ADB. 2008. *Small Scale Technical Assistance to the People's Republic of Bangladesh for Supporting the Establishment of Khulna Water and Sewerage Authority*. Manila.

² ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Technical Assistance Grant People's Republic of Bangladesh: Khulna Water Supply Project*. Manila.

³ Under Statutory Regulatory Order No-43-law/2008-law/division pass-2/K 1/2007.

⁴ ADB (South Asia Department). 2018. Approval of (i) minor change in scope, and (ii) extension of loan closing date. Memorandum. 28 June 2018 (internal).

6. At appraisal, the total project cost was \$363.53 million equivalent, with an ADB loan of \$75 million (20%), a JICA loan of \$183.96 million (51%), and government counterpart financing of \$104.56 million (29%). The actual project cost was \$323.73 million, or 89% of the appraised estimate, of which 20% was from ADB, 43% from JICA, and 37% from the government. The lower project cost was largely because of the cancellation of a consultancy package on groundwater monitoring.

7. The project was to have three consultancy packages: (i) design and supervision, (ii) corporate management support, and (iii) groundwater monitoring. Design and supervision and corporate management support consultants were engaged through the quality- and cost-based selection method. The recruitment of a groundwater monitoring consultant was unsuccessful because of the lack of qualified firms. It was cancelled in June 2017 because government adopted a strategy to reduce groundwater dependency and shift to surface water for potable water sources. Nine civil works packages were procured under the project. The delay in loan effectiveness meant delays in signing these contracts.

8. The project was classified category B for environment, A for involuntary resettlement, and C for indigenous peoples. It had an effective gender mainstreaming theme, and a gender action plan (GAP) was implemented, which aimed to improve women's access to safe, reliable, and affordable water supply and reduce the incidence of water-borne diseases and lower medical costs.

9. A capacity development technical assistance (TA) was attached to the loan to support the executing agency in implementing the project. ADB funded this \$0.70 million TA which was implemented from July 2011 to June 2016.⁵ The TA completion report rated it successful, noting it achieved its intended outcome of enhanced implementation capacity of the executing agency and its planned and additional outputs.⁶ The TA closing date was extended three times and the outputs were delivered in 56 months against the planned 18 months. Since the TA was supporting the implementation of the project, it had to be extended due to the delays in civil works and the government's request for a feasibility study and a master plan preparation for wastewater/sludge management system for Khulna.

10. A policy and advisory TA on strengthening the resilience of the water sector in Khulna to climate change was implemented from February 2009 to June 2011.⁷ The TA assessed the impacts of climate change on the water sector and identified and analyzed structural and nonstructural adaptation options essential to the climate resilience design of the facilities financed under the project.

D. Implementation Arrangements

11. KWASA was the executing and implementing agency, and it established a project management unit (PMU) to select consultants, procure and supervise civil works, monitor compliance with safeguards, coordinate with stakeholders, and report implementation progress. The PMU had a project manager for the ADB component and another for the JICA component. The PMU was under the supervision and guidance of a national level interministerial steering

⁵ The actual amount used was \$627,505.

⁶ Appendix 10 of the project completion report (ADB. 2020. *Completion Report: Khulna Water Supply Project in Bangladesh*. Manila.)

⁷ ADB. 2008. *Technical Assistance to Bangladesh for Strengthening Resilience of the Water Sector in Khulna to Climate Change*. Manila.

committee,⁸ chaired by the Secretary of the Local Government Division, and members from the Department of Environment (Khulna division); the Economic Relations Division; Finance Division; Planning Commission; Implementation, Monitoring, and Evaluation Division, KWASA; and Khulna City Corporation.

12. There were 24 loan covenants and 15 more in the project agreement, but no changes were made during implementation. KWASA complied with 38 of the 39 covenants—with partial compliance related to land acquisition and involuntary resettlement. Compensation was paid in full under the approved resettlement plan. However, the expected livelihood restoration was only partly accomplished, and the planned formal training was not undertaken because of the lack of interest among target participants.

13. Project risks identified were inadequate project management capacity of KWASA, financial sustainability, land acquisition and resettlement, and increased salinity level of river water in the dry season. Measures taken to mitigate these risks were the support for recruitment and training of managers and engineers, introduction of revenue enhancing measures such as volumetric tariffs and charges on private wells, provision of resources for consultation with local communities on resettlement plan, and an impounding reservoir to store water during the rainy season, which can be used during the dry season, to dilute the saline water.

II. EVALUATION OF PERFORMANCE AND RATINGS

A. Relevance of Design and Formulation

14. The project completion report (PCR),⁹ rated the project relevant. At appraisal, the project was strategically aligned with the development priorities of the government, where the improvement of water and sanitation was part of its seven-point agenda for reducing poverty under the National Poverty Reduction Strategy, 2005.¹⁰ Upgrading the water supply and distribution system and providing an additional source of improved potable water were identified as high priorities in the government's draft Sector Development Plan, 2011–2025.¹¹ The project was also aligned with ADB's strategies and policies. ADB's Country Strategy and Program, 2006–2010 for Bangladesh defined urban water supply as a focus area and set the target of achieving a 50% reduction in the number of people without access to safe drinking water.¹² The project was consistent with ADB Strategy 2020,¹³ where water supply and sanitation were integral components of ADB's infrastructure operations, and its Water Operational Plan 2011–2020,¹⁴ which emphasized managing the water demand–supply gap, water quality, sanitation, and climate change.

15. The project was aligned with the strategies and policies of government and ADB at completion. The Bangladesh Water Act, 2013, established a new, integrated approach to the development, management, extraction, distribution, use, and protection of water resources.¹⁵ The 2014 National Strategy for Water Supply and Sanitation was formulated with the aim of ensuring

⁸ The steering committee was established for the JICA feasibility study and was expanded into the interministerial committee for this project

⁹ ADB. 2020. *Completion Report: Khulna Water Supply Project in Bangladesh*. Manila.

¹⁰ Government of Bangladesh. 2005. *Poverty Reduction Strategy*. Dhaka.

¹¹ Government of Bangladesh. 2011. *Sector Development Programme (SDP) Water Supply and Sanitation Sector in Bangladesh, 2011–2025*. Dhaka.

¹² ADB. 2005. *Country Strategy and Program: Bangladesh, 2006–2010*. Manila.

¹³ ADB. 2008. *Strategy 2020: Working for an Asia and Pacific Free of Poverty*. Manila.

¹⁴ ADB. 2011. *Water Operational Plan 2011–2020*. Manila.

¹⁵ Government of Bangladesh. 2013. *Bangladesh Water Act 2013*. Dhaka.

universal access to sustainable and safe water supply, sanitation, and hygiene services.¹⁶ ADB's Country Partnership Strategy for Bangladesh, 2016–2020, identified easing infrastructure constraints as a strategic priority and investment area, including combining improvements in water supply and sanitation with better services for urban health and skills training.¹⁷ The project was also aligned with the operational priorities of ADB's Strategy 2030 on making cities more livable, tackling climate change, and strengthening governance and institutional capacity.¹⁸

16. The project design incorporated lessons and recommendations from previous sectoral interventions in Bangladesh and other countries on cofinancing, tariff setting, and financial management.¹⁹ The project complemented parallel ADB-financed projects on drainage improvement under the City Region Development Project²⁰ and solid waste management under the Urban Public and Environmental Health Sector Development Program.²¹ It had good technical design elements such as the automated supervisory control system, locating the intake facility up river to avoid salinity, and an impounding reservoir to store low-chloride fresh water during rainy season for diluting the high-chloride water during the dry season.

17. The project was implemented largely as designed, although some output targets and dates were adjusted in June 2018 to respond to the delays in loan effectivity and land acquisition. Implementation delays, because of land acquisition problems, were identified as risks in the RRP. Land acquisition took more than 2 years since approvals were needed from several ministries, clearly justifying the changes to target dates. However, it is not clear why the output indicators were changed. The target for the accomplishment of the outputs became 2019, from 2017, while that for the outcome to 2020. Changes in target outputs included reductions in scope.²² Project outcome targets, safeguards, and gender mainstreaming did not change.

18. Since the project was well designed and aligned with strategies and policies of the government and ADB, this validation assesses the project relevant.

B. Effectiveness in Achieving Project Outcomes and Outputs

19. The PCR rated the project effective in achieving its outcome and outputs. The project achieved all its four outcome indicators and two were exceeded. The number of households with access to piped water increased from 15,032 (23%) in 2010 to 40,000 (60%) in 2019, just below the 62% target, and those headed by women increased from 2,876 (23%) in 2010 to 7,162 (57%) in 2019, although below the 62% target. The average duration of supply increased from 5.3 hours per day in 2009 to 24 hours per day in 2020 as planned, while the share of water samples meeting government's quality standard achieved the 100% target ahead of 2020.

20. Under output 1, all three targets were achieved—additional production capacity of 110 million liters/day, limited KWASA's groundwater abstraction in Khulna to a maximum of

¹⁶ Government of Bangladesh. 2014. *National Strategy for Water Supply and Sanitation*. Dhaka.

¹⁷ ADB. 2016. *Country Partnership Strategy: Bangladesh, 2016–2020*. Manila.

¹⁸ ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific*. Manila.

¹⁹ ADB. 2009. *Evaluation Study on the Urban Sector and Water Supply and Sanitation in Bangladesh*. Manila.

²⁰ ADB. 2010. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of Bangladesh for the City Region Development Project*. Manila.

²¹ ADB. 2009. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of Bangladesh for the Urban Public and Environmental Health Sector Development Program*. Manila.

²² The length of the new pipe network was reduced from 758 kilometers (km) to 650 km; number of household connections from 50,019 to 40,000; number of connections for women-headed households from 14,187 to 6,800; and number of water user groups from 1,500 to 250.

50 million liters/day and maintained groundwater level at a maximum of 6 meters drawdown. All five changed targets for output 2 were achieved, with three exceeded: (i) 708.06 kilometers (km) of new pipe network in 2019, 93% of the original target of 758 km; (ii) 40,000 households connected as per the revised targets, but lower than the original, although the households headed by women exceeded the original target; (iii) water losses were reduced from 36% in 2009 to 20% in 2019 as planned; (iv) 255 water-user groups were formed—less than the original target but exceeding the revised one; and (v) 45% (planned 30%) women's representation and 45% (planned 30%) of leadership positions held by women. On output 3, all four changed target indicators were achieved, and two were exceeded: (i) average response time to customers' complaints using online system was kept under 30 minutes as planned; (ii) 94% of the planned revenue was collected throughout the implementation period against a 90% target; (iii) by 2019, 95% of the planned posts were filled, with equal opportunities for male and female—target was 90%; and (iv) 90% of the planned training was conducted, providing equal opportunities to male and female staff members.

21. The project safeguards categories were appropriate. An initial environmental examination (IEE) was prepared in 2011 to ensure alignment with JICA's Guidelines for Environmental and Social Considerations (2002)²³, ADB's Safeguard Policy Statement (2009)²⁴, and Bangladesh environmental impact assessment requirements. The IEE included a detailed environmental management plan covering both construction and operations commensurate with the type and scale of the project. No major concerns or significant environmental issues were identified during public consultations, and although a grievance redress system was established, no grievances were reported. Eight environmental monitoring reports were prepared between June 2015 and December 2019, and all were disclosed on the ADB website.

22. An involuntary resettlement plan was prepared in 2011 and later updated and finalized only in 2014 because of the project delays. The project affected 146 titled and 380 non-titled households. The project required 77.06 acres of land, of which 75.68 acres were acquired from private land holders and 1.38 acres through interministerial transfer from government departments. An initial poverty and social analysis was prepared in April 2011. KWASA submitted five quarterly land acquisition and resettlement reports and 11 semiannual social monitoring reports between 2014 and 2019. At completion, no outstanding grievance cases were unresolved. The PCR noted that 11 affected households in the Pabla area had ownership disputes. The compensation package was delivered to the district commissioner's account and would be accessible to the landowners after legal resolution.

23. The PCR assessed the GAP implementation effective. At completion, the planned activity was completed, and all 12 quantitative targets were achieved including those on women's participation in community consultations, awareness raising events, and inclusion of relevant clauses on core labor standards such as equal pay for work of equal value, and occupational health and safety. A series of practical gender benefits were generated, including (i) improved access to safe, reliable, and affordable water; (ii) reduced incidence of water-borne diseases and the resulting reduction in cost of medical treatment and nursing sick family members; (iii) reduced accidental risk of women and girls due to installation of community taps that helped avoid collecting water from distant locations especially during rainy seasons; (iv) increased social cohesion due to installation of community taps, which meant no quarrelling over long queues at water points or tube wells; and (v) women's economic empowerment. The project generated strategic gender benefits, where improved access to water supply reduced the time constraints

²³ JICA. 2013. *The Basics of Environmental and Social Considerations*. Tokyo.

²⁴ ADB. 2009. *Safeguard Policy Statement*. Manila.

of women and girls and increased their incomes. Gender equality in decision-making and leadership, and capability in managing community water collection points were improved.

24. Since the original outcome and most of the output targets were achieved, although with a delay of 2 or 3 years, and even if accomplishments fell short, at least 80% of the originally planned targets were realized. This validation assesses the project effective.

C. Efficiency of Resource Use

25. The PCR rated the project efficient, indicating that the reevaluated economic internal rate of return (EIRR) of 13.7% was higher than the 13.6% at appraisal and above the benchmark of 12%. This suggested that the project was economically viable. The PCR's reevaluation of the EIRR was largely consistent with the approach taken at appraisal and aligned with ADB guidelines.²⁵ Economic investment costs were updated based on actual expenditures, and annual operation and maintenance (O&M) costs were adjusted accordingly. Non-incremental economic benefits of the project were (i) savings of resource costs associated with existing non-piped supplies under the without-project scenario; and (ii) economic value of savings of time spent on fetching water. The incremental benefits were estimated using consumers' willingness to pay data. Savings from water losses were also included as economic benefits. Sensitivity analysis of the PCR reevaluation ascertained that the project would remain economically viable under two adverse scenarios—a 10% increase in O&M cost and a 10% decrease in revenue would only marginally reduce the EIRR to 13.66% and 13.01%, respectively.

26. However, this validation notes that the economic analysis included assumptions that were either without a clear explanation or inconsistent with those of the PCR. In response to this assessment from the Independent Evaluation Department, the PCR team at the Bangladesh Resident Mission presented a revised economic analysis with greater clarity in the assumptions made. The reestimated EIRR was above 12%, which hinged on the assumption that access to piped water produced a time value saving of 73 minutes per day for households that used private tube wells before the project (and 91 minutes per day for households that used public tube wells before the project). Time value savings were based on the experience and assessment of the executing agency.²⁶

27. The project was extended for 1 year, even though land acquisition was delayed by more than 2 years. Two government agencies under different ministries were involved in the land acquisition process and the project needed approvals from others. While KWASA awarded contracts for the pipe networks in April and August 2014, the major portion of the large-diameter pipe-laying work could not begin until the memorandums of understanding were signed with the Roads and Highways Department in April 2016 and with the Bangladesh Railway in June 2016. Pipe-laying work, the installation and testing of electromechanical components, and phase-wise commissioning of the system were delayed. Nevertheless, the project mitigated the adverse impacts and completed all activities by the extended closing date, with all outputs achieved or exceeded at only 89% of the original appraisal cost estimate. The project's process efficiency is considered satisfactory.

²⁵ ADB. 2017. *Guidelines for the Economic Analysis of Projects*. Manila.

²⁶ The PCR team cited a KWASA communication as evidence for this value of time savings. However, at the time of appraisal (as stated in the RRP), the time value savings was assumed to be 91 minutes per day for public tube well users and zero for private tube well users.

28. Considering the satisfactory process efficiency, and the estimated EIRR exceeding the 12% threshold, although with overstated assumptions on time value savings, this validation assesses the project efficient.

D. Preliminary Assessment of Sustainability

29. The PCR rated the project likely sustainable. The recomputation of the project's financial internal rate of return (FIRR) largely followed the approach taken at appraisal and was in accordance with the general principles and sector-specific considerations outlined in ADB's guidance note.²⁷ At appraisal, the FIRR was -2.7%, below the weighted average cost of capital (WACC) of 0.4%, reflecting the low level of the planned tariff, determined according to the assessment of the willingness to pay and affordability. The PCR used the actual project costs and implementation period to update the financial analysis. The recalculated FIRR was 8.35%, which was substantially higher than the WACC of 1.25%. This suggested that the project was financially viable. The project remained viable even under adverse assumptions of a 10% increase in O&M cost—6.92% FIRR, or a 10% decrease in revenue—6.12% FIRR.

30. This validation finds the assumed increases in water tariffs in the financial analysis to be optimistic and much higher than those granted by the government so far—an annual increase of 5%.²⁸ In the revised analysis, the PCR team substantiated the assumption on future tariffs by citing KWASA's proposed tariff plan. According to this plan, there will be a 30% increment in 2022, and a regular annual increment of 5% (that is allowed by the Water Supply and Sewerage Authority Act) over 4-year tariff cycles: 30% in 2025 and 2029, 25% in 2033 and 2037, and 20% in 2041. However, this plan is yet to receive approval from the Ministry of Local Government, Rural Development and Co-operatives (LGD). The validation finds the FIRR to be highly sensitive to this assumed increase in water tariffs. For a 10% decrease in revenue for example, the FIRR falls below the WACC.

31. The supervisory control and data acquisition system enabled KWASA to monitor the reservoir and overhead tank levels in real time and to provide timely analysis on key operational parameters. Operational efficiency improved with substantial reduction in physical water losses in the system. Revenue collection improved due to the customer metering program. An annual increase in water tariff by 5% has been approved by the government to cover O&M costs. The project strengthened KWASA's corporate management, including the implementation of a corporate business plan, formation of community groups in low-income areas to ensure water supply, and the roll out of online customer services. The surface water treatment plant helped protect ground water resources.

32. This validation notes that the project is subject to low risks across institutional, managerial, technical, operational, environmental, and social aspects. The project is likely to be financially viable considering the long-term tariff plan submitted by KWASA and the expectation that the LGD will approve the plan. The validation thus assesses the project likely sustainable.

²⁷ ADB. 2019. *Financial Analysis and Evaluation: Technical Guidance Note*. Manila.

²⁸ The Excel spreadsheet provided for this validation contains two versions of economic analysis. The old version estimation of economic benefits for 2018–2019 was divided by a factor of 0.7 to arrive at the annual revenue for 2019 used in the financial analysis.

III. OTHER PERFORMANCE ASSESSMENTS

A. Preliminary Assessment of Development Impact

33. The PCR rated the project's development impact satisfactory. The location of the intake facility reduced saline intrusion. The operation of the new surface water treatment plant limited groundwater abstraction to a more sustainable level. The extended distribution network significantly increased the number of household connections, while physical water losses were reduced. The improved facilities also reduced the average time to fetch water, from 90 minutes in 2009 to 15 minutes in 2020 in informal settlements. For women-headed households in these areas, the time was reduced from 110 minutes in 2009 to 20 minutes in 2020. In other areas, households were connected to piped water supply. The project improved KWASA's capacity, technical and engineering expertise, project implementation and management, human resources, and financial management. This validation assesses the development impact of the project satisfactory.

B. Performance of the Borrower and Executing Agency

34. The PCR rated the performance of the borrower and the executing agency satisfactory. The government established KWASA in February 2008. The Economic Relations Division of the Ministry of Finance was available during loan review and working meetings. The interministerial steering committee met at least once every 4 months. However, the PCR noted that the committee could have resolved land acquisition issue better. KWASA demonstrated strong commitment and ownership and achieved high project readiness. Despite its lack of experience in ADB-financed projects, KWASA implemented the project appropriately. The PMU regularly submitted all required quarterly progress, and environmental, and social monitoring report. This validation assesses the performance of the borrower and the executing agency satisfactory.

C. Performance of the Asian Development Bank and Cofinancier

35. The PCR rated ADB's performance satisfactory. Throughout project implementation, ADB effectively identified and facilitated the resolution of project-related issues through review meetings with the borrower and the executing agency, and regular project review missions. ADB headquarters initially administered the project, but the resident mission took over in June 2011. ADB fielded 12 missions, including an inception mission in 2012, a midterm review mission in March 2018, and 10 project review missions from July 2013 to December 2019, comprising 227 person-days of inputs. The back-to-office reports were detailed, identified issues, reported on safeguards compliance, and made appropriate recommendations.

36. This validation finds ADB's safeguard work quality satisfactory at appraisal and at supervision. The IEE, environmental monitoring reports, social monitoring reports, and resettlement plans were disclosed on the ADB website. ADB advised KWASA to carry out source water quality monitoring and initiate dialogue with the government, noting the challenges to water quality from agriculture, municipal, and industrial pollution. This validation assesses ADB's performance satisfactory.

37. JICA financed and administered most output 1 activities of the project. The coordination arrangements for cofinancing were detailed in a procedural arrangement between ADB and JICA. The PCR mentioned that a steering committee established at feasibility study by JICA was expanded to a level of interministerial steering committee to guide the PMU. This validation assesses JICA's performance satisfactory.

IV. OVERALL ASSESSMENT, LESSONS, AND RECOMMENDATIONS

A. Overall Assessment and Ratings

38. The PCR rated the project successful. It rated the project relevant (based on its alignment with ADB and country strategies and appropriate design), effective (based on the achievement of outcomes and outputs), efficient (based on the EIRR), and likely sustainable (based on improved institutional capacity and the FIRR). This validation assesses the project relevant because of its alignment with strategic priorities of government and ADB, and its appropriate design. It assesses the project effective since it substantially delivered all its outputs and achieved its outcome. It assesses the project efficient based on the estimated EIRR, which was still above the 12% threshold. This is due to the high time-value savings arising from access to piped water noted by KWASA for the households using private tube wells before the project. The validation assesses the project likely sustainable based on KWASA’s long-term tariff plan which the LGD is yet to approve. The FIRR is generally above the WACC, except when revenue is assumed to decrease by 10%. Overall, this validation assesses the project successful.

Overall Ratings

Validation Criteria	PCR	IED Review	Reason for Disagreement and/or Comments
Relevance	Relevant	Relevant	
Effectiveness	Effective	Effective	
Efficiency	Efficient	Efficient	
Sustainability	Likely sustainable	Likely sustainable	This rating is based on the long-term tariff plan for cost recovery submitted by KWASA and the expectation that the Ministry of Local Government, Rural Development and Co-operatives will eventually approve this plan.
Overall Assessment	Successful	Successful	
Preliminary assessment of impact	Satisfactory	Satisfactory	
Borrower and executing agency	Satisfactory	Satisfactory	
Performance of ADB	Satisfactory	Satisfactory	
Quality of PCR		Satisfactory	Para. 43.

ADB = Asian Development Bank, IED = Independent Evaluation Department, PCR = project completion report. Source: ADB (IED).

B. Lessons

39. The PCR identified six lessons. First, better management of complex government approval processes by the steering committee is needed to avoid significant delays in land acquisition for major civil works contracts. Second, changes to project works can be avoided by giving due consideration at appraisal to government’s policies. Since government wanted to reduce extraction from ground water, KWASA considered surface water as the primary water supply solution for Khulna and excluded the rehabilitation of deep tube wells from the project. Third, the midterm review mission should have been fielded much earlier and not so close to the original project closing date so that changes to output targets and schedules in the DMF could look more justifiable. Fourth, the adoption of technological solutions, such as supervisory control and data acquisition, can make monitoring and supervision more efficient. Fifth, ADB’s close collaboration and arrangements with JICA from the planning stage, and during implementation,

helped complete all project components at the same time. Sixth, conducting a feasibility study on the masterplan for wastewater management was an efficient use of TA resources since it resulted in an ADB-financed sewerage project for Khulna.²⁹

40. This validation supports the above lessons and offers three additional project level ones. First, strong commitment, ownership, and accountability of executing agencies, combined with timely technical support and capacity building, can make a significant difference to project readiness and implementation. This was demonstrated by the performance of KWASA which was established just 3 years before project approval and had no prior experience with ADB projects. Second, holistic and in-depth assessment of project context and adequate stakeholder consultations are important to ensure that project design remains relevant and serves the best interest of its target beneficiaries. For example, to accommodate community preferences, the project switched from the planned 250 community water taps to 1,097 individual water connections and four community water taps in low-income communities. Third, a flexible approach, without strict adherence to established procedures, is required when providing water supply services to disadvantaged households. Such an approach by KWASA helped women-headed households get connected to water supply while the required paperwork was yet to be completed.

C. Recommendations for Follow-Up

41. The PCR included various recommendations: (i) land acquisition should begin early to avoid delays in project implementation, (ii) KWASA staff should be exposed to the best practices of better performing water utilities overseas, (iii) KWASA should use a full enterprise resource planning to support all aspects of administrative and business processes including customer facing and asset management to improve its institutional efficiency, (iv) KWASA should plan to meter all connections to government utility departments to help reduce physical water losses, (v) KWASA should seek government approval of its corporate business plan, (vi) the compensation package for 11 affected households with ownership disputes should be followed up, and (vii) the resolution of the pending six audit observations should be resolved. This validation supports these recommendations.

V. OTHER CONSIDERATIONS AND FOLLOW-UP

A. Monitoring and Reporting

42. ADB monitored project implementation through 10 loan review and a midterm review missions. ADB guided KWASA's performance, project implementation progress, and compliance with safeguards requirements. KWASA regularly submitted the quarterly progress reports. Project financial statements were audited by the government's Foreign-Aided Projects Audit Directorate, and PMU submitted the audits to ADB on time. There were no qualified audit opinions, but at the time of PCR completion, six audit observations were pending.³⁰

B. Comments on Project Completion Report Quality

43. The PCR was well prepared and consistent with the guidelines. It provided a comprehensive description of the project design and implementation process and presented an

²⁹ ADB. 2020. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of Bangladesh for the Khulna Sewerage System Development Project*. Manila.

³⁰ Para. 35 of the PCR.

objective and convincing assessment of the achievement of outputs and outcomes. Major implementation issues were clearly identified. The environmental and social safeguards and GAP were succinctly summarized. The economic and financial reevaluations were consistent with ADB guidelines, with calculations presented in supporting spreadsheets. However, a few assumptions made in the economic analysis were too optimistic. The PCR's lessons and recommendations were relevant and useful. Overall, this validation assesses the quality of the PCR satisfactory.

C. Data Sources for Validation

44. Data sources for this validation included the PCR, RRP and its linked documents, loan and project agreements, back-to-office mission reports, safeguard assessments, environmental and social monitoring reports, government and ADB strategies and policies, and ADB guidelines.

D. Recommendation for Independent Evaluation Department Follow-Up

45. The PCR recommended that a project performance evaluation report be prepared in 2022, and this is supported by the validation.