



## 1. Project Data

<b>Project ID</b> P103999	<b>Project Name</b> BD: Chittagong Water Supply Improvement		
<b>Country</b> Bangladesh	<b>Practice Area(Lead)</b> Water		
<b>L/C/TF Number(s)</b> IDA-47340,IDA-60930,TF-58153	<b>Closing Date (Original)</b> 31-Dec-2015	<b>Total Project Cost (USD)</b> 161,276,208.07	
<b>Bank Approval Date</b> 23-Jun-2010	<b>Closing Date (Actual)</b> 31-Dec-2020		
	<b>IBRD/IDA (USD)</b>	<b>Grants (USD)</b>	
Original Commitment	170,000,000.00	0.00	
Revised Commitment	183,011,932.82	0.00	
Actual	161,276,208.07	0.00	
<b>Prepared by</b> Kishore Laxmikant Nadkarni	<b>Reviewed by</b> Fernando Manibog	<b>ICR Review Coordinator</b> Ramachandra Jammi	<b>Group</b> IEGSD (Unit 4)

## 2. Project Objectives and Components

### a. Objectives

**Original objective:** The objective of the Project is to increase the sustainable access to safe water and improved sanitation, as well as to support the establishment of a long-term water supply, sanitation, and drainage infrastructure and operational management program in Chittagong (Schedule 1 of the Financing Agreement dated July 26, 2010 and paragraph 20 of the Project Appraisal Document).

For the ICRR, the original objective is parsed as follows:



**Objective 1:** To increase sustainable access to safe water in Chittagong.

**Objective 2:** To increase sustainable access to improved sanitation in Chittagong.

**Objective 3:** To support the establishment of a long-term water supply, sanitation, and drainage infrastructure development and operational management program in Chittagong.

Under a Level I project restructuring in 2014, the PDO was revised as follows:

**Revised objective:** The objective is to increase access to safe water and improve CWASA's institutional capacity and investment planning for sanitation and drainage in Chittagong City, (Schedule 1 of the Financing Agreement dated April 15, 2014). (CWASA refers to the Chittagong Water Supply and Sewerage Authority).

For the ICRR, the revised objective is parsed as follows:

**Revised Objective 1:** To increase access to safe water in Chittagong City.

**Revised Objective 2:** Since the original Objective 2 was dropped under the 2014 restructuring, this objective is not included for further assessment in the ICRR.

**Revised Objective 3:** To improve CWASA's institutional capacity and investment planning for sanitation and drainage.

**Split evaluation:** The 2014 restructuring resulted in a change in the PDO which reduced the ambition of the project, accompanied by significant changes in PDO indicators and intermediate results indicators (IRIs). Consequently, a split evaluation is undertaken in the ICRR.

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

Yes

**Did the Board approve the revised objectives/key associated outcome targets?**

Yes

**Date of Board Approval**

16-Apr-2014

**c. Will a split evaluation be undertaken?**

Yes

**d. Components**

(Reference PAD paras. 24 to 26 and Annex 4 and ICR paras. 9 to 11)



The project components at appraisal are indicated below. Changes in these components during project restructurings are discussed later in Section 2 under the respective restructurings.

**Component 1: Water Supply and Sanitation:** (appraised cost US\$164.4 million; revised cost after restructuring US\$240.5 million; actual cost at completion US\$209.7 million).

Component 1 was to consist of the following subcomponents:

1. Construction of a water treatment plant (WTP) at Modunaghat with a water treatment capacity of delivering 90 million liters per day (mlpd).
2. Transmission system for treated water from the Modunaghat WTP, including rehabilitation of the pumping station at Patenga.
3. Rehabilitation and extension of CWASA's water distribution system, including extension of the water supply and sanitation system to selected urban slums.
4. Extension of water supply and sanitation service provision to urban slums.
5. Implementation of a pilot septic sludge handling system.
6. Supply of water supply related operational equipment, spare parts, and technical assistance for improvement of operations and maintenance (O&M) of CWASA's water supply facilities.
7. Technical assistance to CWASA for contracts management, engineering design reviews, and supervision for construction/rehabilitation activities.
8. Technical assistance for studies related to saline intrusion of the Halda river.

**Component 2: Sewerage and Drainage:** (appraised cost US\$9.5 million; revised cost after restructuring US\$5.3 million; actual cost at completion US\$4.2 million).

Component 2 would consist of technical assistance to be provided for the following subcomponents:

1. Confirmation, packaging and design of priority sewerage and sanitation investments.
2. Updating of drainage master plans and identification of priority investments. .
3. Rehabilitation of storm-water drainage canals.
4. Development of storm-water drainage and sewerage/sanitation plans.
5. Development of an institutional framework for provision of sewerage/sanitation and drainage services among the principal stakeholder agencies:

**Component 3: Institutional and Operational Development and Project Management Support:** (appraised cost US\$12.9 million; revised cost after restructuring US\$11.9 million; actual cost at completion US\$11.0 million).



Component 3 would consist of the following subcomponents:

1. Support for comprehensive institutional development of CWASA: Technical assistance, including consultancy services, equipment and supporting systems would be provided to CWASA for (i) modernization of CWASA's operational system and facilities; (ii) capacity building at all operational levels to improve CWASA's efficiency in delivering services; (iii) establishment of expanded facilities to support CWASA's expansion of delivery of services; and (iv) relevant training to CWASA staff.
2. Direct support to the PMU: This would include: (i) provision of a team of experts to support the PMU's core team; (ii) equipment and systems for oversight and monitoring functions; and (iii) technical assistance for financial management, procurement and contracts management, environmental and safeguards monitoring.

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

**Project Cost**: At appraisal, the total project cost was estimated at US\$186.8 million. Under restructurings, including the Additional Financing, the estimated total cost was increased to US\$257.6 million. At project completion, the actual cost as reported in the Data Sheet of the ICR was US\$196.4 million. However, there are some discrepancies in the ICR in reporting the actual cost at completion - Annex 3 of the ICR provides a figure of US\$225 million. The project team clarified to IEG that the difference was due to cancellations of unused funds that were not reflected in the Annex 3 figures.

**Financing**: At appraisal, the project was financed by an IDA grant of US\$170 million. Under the Additional Financing, the IDA contribution was increased by US\$47.49 million, resulting in total IDA financing of US\$217.49 million. After project restructurings, which included some cancellations, the IDA contribution was reduced to US\$183.1 million. At project closing, the amount of IDA funds disbursed was US\$161.3 million. The unutilized balance was cancelled.

**Borrower Contribution**: At appraisal, the planned contribution from the Borrower was US\$16.8 million. After project restructurings, the planned contribution was increased to US\$52.3 million. At project completion, the actual Borrower contribution was US\$35.2 million.

**Dates**: The project was approved on June 23, 2010 and became effective on October 27, 2010. The original closing date was December 31, 2015. This was extended four times by a total of 60 months (five years) to December 31, 2020.

**Mid-Term Review (MTR)**: A Mid-Term Review was carried out in December 2013.

**Restructurings**: During its implementation period (2010 to 2020), the project underwent six restructurings as follows:

**First Restructuring**: (March 2014, disbursed amount US\$6.98 million or 4.3 % of total IDA funding).

This was a Level I restructuring resulting in significant changes in project scope that reduced the ambition of the project in regard to achieving improved access to sanitation. Changes were made in the PDO and



associated PDO indicators, intermediate result indicators (IRIs) and targeted outputs. Principal changes included:

Changes in PDO: The PDO was revised to " the objective of the project is to increase access to safe water and improve CWASA's institutional capacity and investment planning for sanitation and drainage in Chittagong City".

Changes in PDO Indicators: (ICR para. 24 and Table 1).

Dropped indicators: All indicators related to improved access to sanitation were dropped. This included the indicators in regard to:

- Number of people in project area ward slums with access to safe water and improved sanitation.
- Clarified institutional mandates and responsibilities for sewerage and drainage.
- Establishment of a pilot septic sludge handling system.

Also dropped was the indicator "CWASA maintains O&M cost coverage from total revenues".

New indicators added:

- CWASA to cover O&M costs from direct water sales revenues.
- CWASA to maintain a Water Utility Maturity level of at least 3.0.
- Total value of priority sewerage and drainage investments of at least US\$150 million to be identified and ready for financing.

Changes in Intermediate Results Indicators (IRIs): (ICR Annex 1 - Results Framework).

New indicators were added as follows:

Under Component 2:

- Sanitation and drainage strategy and Master Plans to be prepared and approved by CWASA's Board.

Under Component 3:

- Institutional development program to be prepared and approved by CWASA.
- Percentage of institutional development activities supported by the project that are completed and approved by CWASA's Board.
- Number of staff trained under approved staff training and development program.
- Standard operating procedures (SOPs) and O&M manuals are prepared and staff trained in their use.
- CWASA's Board to prepare and approve commercial management plan; management information systems plan; customer services improvement plan; and staff training and development program.
- Number of zonal offices to be refurbished and equipped under the project.



Changes in Project Components: (ICR para. 15 and Restructuring Paper, Section on Proposed Changes).

Component 1: The component was renamed "Water Supply Improvement". The component was revised to focus only on water supply improvement. Activities related to increasing access to improved sanitation were dropped. The scope of the water distribution network was reduced to focus on priority investments identified through hydraulic network analysis. The scope of water supply improvement in Low-Income Areas (LICs) was reduced to focus only on two pilot slums selected by CWASA based on an assessment of needs as well as other factors such as availability of water and the need to complete essential transmission and distribution network improvements.

Component 2: The component was renamed "Investment Planning for Sanitation and Drainage". The component was amended to focus only on provision of technical assistance for improving strategic and investment planning for sewerage and drainage in Chittagong City. Physical investments related to rehabilitation of drainage canals were dropped because priority needs were not identified, the institutional framework for drainage activities was not clear, and CWASA lacked the relevant experience.

Component 3: The component was renamed "Institutional Capacity Development and Project Management Support". There were no significant changes. The nature and scope of activities were better defined. Nine new intermediate results indicators were added to enable better tracking of progress in achieving the objective.

**Second Restructuring:** (June 2017, disbursed amount US\$98 million, 62% of total IDA funding)

This was a Level I restructuring. Additional Financing was approved through an IDA grant of US\$47.49 million partly to cover cost overruns resulting from increased costs of water supply improvements, including transmission and distribution networks, and effects of exchange rate variations. The Borrower's contribution was increased by US\$35.6 million (from US\$16.8 million to US\$52.4 million).

**Third Restructuring:** (August 2019, disbursed amount US\$127 million, 78% of total IDA funding).

This was a Level II restructuring. Component costs were revised due to cost savings realized from competitive bidding for contracts. An amount of US\$10 million was cancelled from the IDA credit. Reallocations were made between categories.

**Fourth Restructuring:** (March 2020, disbursed amount US\$148.23 million, 92% of total IDA funding).

This was a Level II restructuring. The closing date was extended by 2.5 months to June 30, 2020 due to allow for delays due to COVID-19 impacts.

**Fifth Restructuring:** (June 2020, disbursed amount US\$148.23 million, 92% of total IDA funding).

This was a Level II restructuring. The closing date was extended by 6.5 months to December 31, 2020 to allow for delays due to COVID-19 impacts.

**Sixth Restructuring:** (December 2020, disbursed amount US\$161.3 million, 100% of total IDA funding).

This was a Level II restructuring. An unutilized amount of US\$10 million was cancelled from the IDA credit.



### 3. Relevance of Objectives

#### Rationale

Reference PAD paras. 1 to 5 and ICR paras. 28 to 30).

**Country and Sector Context:** At appraisal in 2010, out of an estimated population of 142 million, 36 million (25%) lived in urban areas. Of these, about 71% had access to safe water supply through piped water supply (39%) and hand pump tube wells (32%). However, household access to water reached only a small proportion of the population living in low-income neighborhoods and/or newly developed areas. Access to improved sanitation services covered only about 50% of the population in urban areas. Inadequate drainage systems in most urban areas exacerbated the water supply and sanitation situation. While overall responsibility for the water supply and sanitation sectors fell under a central government ministry, the sectors were managed by Water Supply and Sewerage Authorities (WASAs) in the larger cities (including Chittagong) and by water supply and sanitation departments of local governments in the smaller cities.

Overall, the water supply and sanitation sectors were adversely impacted by significant capacity constraints in the responsible institutions leading to inefficient operations, excessive and poorly targeted subsidies, and inequitable access, especially for the lower-income segments. The Government of Bangladesh (GoB) recognized the importance of addressing the sector issues under various national-level strategies and plans including the National Strategy for Accelerated Poverty Reduction II (FY2009-2011); National Policy for Safe Water Supply and Sanitation; National Sanitation Strategy; and Pro-Poor Strategy.

However, key issues that still remained to be addressed adequately were (i) improving and extending the sectors' infrastructure to meet existing and growing demand and (ii) improving the efficiency and sustainability of urban water and sanitation utilities, and improving accountability to stakeholders. Chittagong was (and remains) Bangladesh's second largest city (after Dhaka). However, at appraisal, access to piped water supply was available to only about 7% of the population and sanitation services were seriously deficient, particularly in the urban slums and low-income communities (LICs). CWASA is the main institution responsible for the water and sanitation services in Chittagong. However, CWASA's functioning was affected by operational and management capacity constraints and a lack of clarity in the institutional responsibilities particularly for the sewerage and drainage sectors. The Chittagong Water Supply Improvement and Sanitation Project (the Project) aimed to provide support in addressing these issues.

**Alignment with the Country Partnership Framework:** At appraisal, the project's objective was consistent with the Country Assistance Strategy (CAS) for 2011 to 2014 and the revised objective remains consistent with the latest Country Partnership Framework (CPF) for Fiscal Years 2016 to 2020. The CPF has three focus areas (i) Growth and Competitiveness; (ii) Social Inclusion; and (iii) Climate and Environment



Management. The project's objective is consistent with the following CPF objectives (CPF para. 46, Table 8):

- CPF Objective 1.3 "improved delivery of basic services in urban areas.
- CPF Objective 2.3 "Improved social protection coverage to the poor".
- CPF Objective 3.2 "improved water resource infrastructure for climate resilience".

The CPF confirms that, to support inclusive growth, the World Bank Group (WBG) activities will aim to consolidate the equity and access gains, and to address challenges related to quality improvements in health, access to clean drinking water and sanitation, and education and skills management. (CPF para. 46).

**Alignment with National Priorities:** At appraisal, the project's objective was consistent with the national priorities prevalent at the time as reflected in the GoB's national-level strategies and plans mentioned earlier above, and the revised objective remains consistent with the national priorities indicated in the GoB's Seventh Five Year Plan for the period 2016 to 2020 which specifies inclusive growth and eradication of poverty and includes strategies and targets related to water supply and sanitation. (ICR para. 30).

**Prior Bank Experience:** The Bank has been involved in Bangladesh's water supply and sanitation sector since the 1960s including two water supply related projects in Chittagong, the last of which was completed in 1988. The latest Bank engagement in the sector is the Dhaka Water Supply and Sanitation Project.

**Relevance of Project Development Objectives:** Given the context described above, the PDO was consistent (and remained consistent) with the priorities in the national programs and the Country Assistance Strategy/Country Partnership Frameworks. The PDO indicators and intermediate results indicators (IRIs) were largely relevant, measurable and adequate for signaling attribution of results to the project interventions, except as discussed later in Section 4 in the ICRR.

## Rating

Substantial

## 4. Achievement of Objectives (Efficacy)

### OBJECTIVE 1

#### Objective

To increase the sustainable access to safe water in Chittagong.

#### Rationale

The ICR provides a diagrammatic presentation of the theory of change (TOC). To increase access to safe water in Chittagong, it was necessary to (i) increase water treatment capacity; (ii) rehabilitate and expand the water transmission and distribution network; (iii) increase the number of new/rehabilitated piped household



water connections and increase the number of new/rehabilitated community water points; and (iv) strengthen the institutional capacity of CWASA to deliver efficient water supply services. The project would provide inputs for financing investments and technical assistance. The inputs for investment financing would directly lead to relevant physical outputs including (i) increase in water treatment capacity; (ii) rehabilitation and expansion of the water transmission and distribution network; and (iii) increase in the number of new/improved piped water household connections and new/improved community water points. The inputs for financing of technical assistance would lead to capacity building outputs of strengthening CWASA's institutional capacity in regard improved delivery of water supply services. These outputs would directly lead to the outcome of increased access to safe water for the population in Chittagong, including in selected low-income slum areas. The longer-term outcome would be improved health and living conditions for the population in Chittagong.

The causal links and full results chain in the TOC in regard to Objective 1 were clear. The PDO and intermediate results indicators (IRIs) adopted were relevant, measurable, and appropriate for assessing the achievement of the objective. One area which could have been defined further was the meaning of "safe water". No metrics were provided in regard to the minimum expected standards to be applied in assessing the quality of the water.

**Outputs and Intermediate Results Indicators:** (as reported in the ICR Annex 1 - Results Framework).

For assessment of efficacy under the original objectives, the ICRR assesses the achievement against the original targets.

#### **Targeted outputs and IRIs:**

##### Targets achieved or overachieved

- Volume of safe water produced by CWASA (in million liters per day - mlpd) (baseline 172 mlpd; original target 260 mlpd; revised target 360 mlpd; actual 360 mlpd; achievement level against original target 209%).
- Length of new pipelines installed (baseline 0 km; original target 65 km; revised target 60 km; actual 111 km; achievement level against original target 171%).
- Length of pipelines replaced and/or rehabilitated (baseline 0; original target 65 km; revised target 73 km; actual 69 km; achievement level against original target 106%).
- Piped water household connections benefiting from rehabilitation under the project (baseline 0; original target 15,000; revised target 17,000; actual 17,200; achievement level against original target 101%).
- Number of water utilities supported under the project (baseline 0; original target 1; revised target 1; actual 1; achievement level against original target 100%).

##### Targets underachieved

- New piped household connections established under the project (baseline 0; original target 25,000; revised target 10,000; actual 13,300; achievement level against original target 53%).
- Improved community water points constructed or rehabilitated under the project (baseline 0; original target 1000; revised target 150; actual 160; achievement level against original target 16%).



- Number of other water service providers supported by the project (baseline 0; original target 10; revised target 2; actual 2; achievement level against original target 20%).

**Other outputs:**

- A Water Treatment Plant (WTP) with a capacity to deliver 90 mlpd of treated water was constructed and made operational, albeit with some delay as compared to the original schedule.
- Selected low-income communities were provided with water supply service.

**PDO Indicators:**

- Number of people in urban areas provided with access to improved water sources under the project (baseline 0; original target 100,000; revised target 648,000; actual 790,000; achievement level 790%). The target was several times overachieved.
- Number of people in the project area ward slums with access to safe water and improved sanitation services (baseline 0; original target 250,000; revised target 0; actual 16,642; achievement against original target 6.6%). The target was not achieved.

**Outcomes:** The PDO indicator in regard to the number of people provided with access to improved water services under the project was overachieved several times over. The project benefited from the increase in the scope of this objective under the restructurings and the much longer than planned implementation period. Most targets in regard to construction and improvement of water supply related infrastructure, including water treatment capacity, transmission and distribution network improvement, and household/community connections were achieved or overachieved. The target for production of treated water was exceeded by 38% and for the number of connections (household and community-points) was exceeded by 13%. The total number of beneficiaries was estimated at 790,000 exceeding the target of 100,000 several times over. The ICR (para. 40, footnote 9) indicates that this increase in number includes the effects of a change in the basis of computation. At appraisal, the assumption was that, on average, one new household connection would serve four persons; with the planned installation of 25,000 new household connections, the original target for increased access was 100,000 beneficiaries. At the 2014 restructuring, the target for new household connections was reduced but that for community water connections was increased. As compared to a new household connection, the new community connections were estimated to benefit 26 persons per connection. This led to an increase in the targeted number of beneficiaries to 648,000. The actual achievement was estimated at 790,000 beneficiaries. The ICR (para. 34) indicates that the project measured access to safe water utilizing the definition employed under the WHO-UNICEF Joint Monitoring Programme (JMP) which refers to water sources that, by nature of their construction or through active intervention, are protected from outside contamination, particularly fecal matter. These include piped water into a dwelling, plot or yard, and other improved sources. However, the ICR does not provide any other metrics in regard to acceptable water standards for assessing the quality of the water supplied.

The PDO indicator in regard to the number of people in the project area slums with access to safe water and improved sanitation was not achieved.

On balance, while the achievements in regard to overall increase in access to safe water would normally have merited a High rating, taking into account the low achievement of improved access to water supply in slums



(low-income communities or LICs), the ICRR rates the efficacy for Objective 1 as Substantial with moderate shortcomings.

**Rating**  
Substantial

## **OBJECTIVE 1 REVISION 1**

### **Revised Objective**

To increase access to safe water in Chittagong City.

### **Revised Rationale**

As indicated earlier in Section 2, the original PDO was revised under the 2014 project restructuring. Regarding the objective of increasing access to safe water, the revised PDO dropped the word "sustainable" that was used in the original PDO and changed "Chittagong" to "Chittagong City". The ICRR has parsed the Revised Objective 1 as indicated above.

The theory of change (TOC) remains essentially the same as discussed under Objective 1 above.

**Outputs and Intermediate Results Indicators:** (as reported in the ICR Annex 1 - Results Framework).

For assessment of efficacy under the revised objectives, the ICRR assesses the achievement against the revised targets.

### **Targeted outputs and IRIs:**

Targets overachieved, achieved or substantially achieved

- Volume of safe water produced by CWASA (in million liters per day - mlpd) (baseline 172 mlpd; original target 260 mlpd; revised target 360 mlpd; actual 360 mlpd; achievement level against revised target 100%).
- Length of new pipelines installed (baseline 0 km; original target 65 km; revised target 60 km; actual 111 km; achievement level against revised target 185%).
- Length of pipelines replaced and/or rehabilitated (baseline 0; original target 65 km; revised target 73 km; actual 69 km; achievement level against revised target 95%).
- New piped household connections established under the project (baseline 0; original target 25,000; revised target 10,000; actual 13,300; achievement level against revised target 133%).
- Piped water household connections benefiting from rehabilitation under the project (baseline 0; original target 15,000; revised target 17,000; actual 17,200; achievement level against revised target 101%).
- Improved community water points constructed or rehabilitated under the project (baseline 0; original target 1000; revised target 150; actual 160; achievement level against revised target 107%).
- Number of water utilities supported under the project (baseline 0; original target 1; revised target 1; actual 1; achievement level against revised target 100%).



- Number of other water service providers supported by the project (baseline 0; original target 10; revised target 2; actual 2; achievement level against revised target 100%).

**Other outputs:**

- A Water Treatment Plant (WTP) with a capacity to deliver 90 mld of treated water was constructed and made operational, albeit with some delay as compared to the original schedule.
- Selected low-income communities were provided with water supply service.

**PDO Indicators:**

- Number of people in urban areas provided with access to improved water sources under the project (baseline 0; original target 100,000; revised target 648,000; actual 790,000; achievement level against revised target 122%). The target was overachieved.

**Outcomes:** The PDO indicator in regard to the number of people provided with access to improved water services under the project was overachieved. The project benefited from the increase in the scope of this objective under the restructurings and the much longer than planned implementation period. Most targets in regard to construction and improvement of water supply related infrastructure, including water treatment capacity, transmission and distribution network improvement, and household/community connections were achieved or overachieved. The revised target for production of treated water was fully achieved and the number of connections (household and community-points) was exceeded by 13%. The total number of beneficiaries was estimated at 790,000 significantly exceeding the revised target of 648,000. Reasons for the increase in the number of beneficiaries as compared to appraisal estimates are given above under Objective 1. As mentioned under Objective 1 above, the ICR does not provide any other metrics in regard to acceptable water standards for assessing the quality of the water supplied.

Given the significant overachievement in the estimated number of beneficiaries of improved access to safe water, the ICRR rates the efficacy for Revised Objective 1 as High.

**Revised Rating**

High

**OBJECTIVE 2**

**Objective**

To increase the sustainable access to improved sanitation in Chittagong.

**Rationale**

At appraisal, sanitation services in Chittagong lagged significantly behind needs. Sanitation services were particularly weak in the urban slums (LICs). Responsibility for sanitation, sewerage and drainage services was fragmented between different institutions, notably CWASA (Chittagong Water and Sanitation Agency), CCC (Chittagong City Commission), and CDA (Chittagong Development Authority). Together with capacity constraints and funding limitations, this limited the possibility for significant immediate expansion of services. The focus under the project was on (i) piloting core approaches, including community-based



services;(iii) improving the institutional framework for provision of sanitation, sewerage and drainage services; and (iii) limited investments in interventions with more immediate returns. The ICR provides a diagrammatic presentation of the theory of change (TOC) as follows: The project would provide inputs through technical assistance and limited investment financing to CWASA, CCC and CDA which would lead to the following outputs: (i) selected LICs (Low Income Communities) would be provided with improved sanitation services; (ii) a pilot septic sludge handling system would be implemented; (iii) prioritized drainage canals would be rehabilitated; and (iv) sewerage and drainage master plans would be prepared and priority investments identified. These outputs would contribute to outcomes of (i) increased delivery of sanitation services to underserved areas; (ii) improved management of on-site sanitation facilities; and (iii) establishment of a long-term sanitation, sewerage and drainage program in Chittagong. The longer-term outcomes would be (i) improved health and productivity of the population and (ii) improved sustainability of the services.

While the TOC's causal links and full results chain were clear, the risks in regard to achievement of the outputs and outcomes were not adequately assessed. The weaknesses in the institutional structure led to serious delays in implementation of the component, leading to dropping of the objective at the 2014 restructuring.

#### **Outputs and Intermediate Results Indicators** (ICR Annex 1 - Results Framework).

The efficacy of achievement of Objective 2 is assessed based on achievements as compared to the original targets.

- Establishment of pilot septic sludge handling system. The target was not achieved

#### **PDO Indicator:**

- Number of people in project area ward slums with access to safe water and improved sanitation (baseline 0; original target 250,000; actual 16,642; achievement level against original target 6.6%). The target was not achieved.

**Outcomes:** As acknowledged in the ICR (para 35),the project was not able to increase access to improved sanitation among the population of Chittagong. Objective 2 regarding providing sustainable access to improved sanitation services was only negligibly achieved. The focus under the project was on improving access to sanitation in slum areas, and this was not achieved. The PDO single indicator in this regard had an achievement level of only 6.6% as compared to the original target (ICR para. 35). The pilot septic sludge handling system, which was intended to serve as a model for future interventions, was not established.

**Rating**  
Negligible

### **OBJECTIVE 2 REVISION 1**

#### **Revised Objective**

Objective 2 was dropped at the 2014 project restructuring. Consequently, there was no Revised Objective 2.

#### **Revised Rationale**



Under the 2014 project restructuring, the PDO was revised to focus on providing increased access in regard to water supply alone, and the objective regarding increasing access to improved sanitation was dropped.

### Revised Rating

Not Rated/Not Applicable

## OBJECTIVE 3

### Objective

To support establishment of a long-term water supply, sanitation and drainage infrastructure development and operational management program in Chittagong.

### Rationale

At appraisal, sewerage and drainage services in Chittagong were lagging significantly behind needs due to a lack of clarity in institutional responsibilities for infrastructure development and operation among the main institutional bodies involved and limitation of available funds. The ICR provides a diagrammatic theory of change (TOC). The project would provide inputs through financing of technical assistance and investments which would lead to required outputs including: (i) confirmation, packaging and design of priority sewerage and sanitation investments; (ii) updating of drainage master plans and identification of priority drainage investments; (iii) rehabilitation of a limited number of drainage canals on a priority basis; and (iv) development of storm-water drainage and sewerage/sanitation plans. These outputs would lead to the outcomes of (i) establishing a long-term water supply, sanitation and drainage infrastructure development and operational program in Chittagong and (ii) improving CWASA's investment planning for sanitation and drainage in Chittagong. The longer-term outcomes would be improved sustainability of sanitation and drainage services in Chittagong with benefits for the health and productivity of the population of Chittagong.

The TOC's causal links and results chain were clear. The PDO indicators and IR indicators were valid, relevant and measurable, and were adequate in signaling that the results obtained were attributable to the project activities.

**Outputs and Intermediate Results Indicators:** (ICR Annex 1 - Results Framework).

In regard to establishment of an infrastructure development program for water supply, sanitation and drainage in Chittagong:

- Establishment of a development program for water supply: The target was not achieved.
- Establishment of a master plan for sanitation: The target was achieved.
- Establishment of a master plan for drainage. The target was achieved.
- Mandates and responsibilities for sanitation and drainage in Chittagong to be clarified. The target was achieved.
- Establishment of a mutually agreed framework between CWASA, CCC and CDA, under which CWASA was to take responsibility for development and O&M of the sanitation system and CCC was to be responsible for the drainage system. However, the ICR notes (para. 36) that roles and



responsibilities related to fecal sludge management were not established. The target was partially achieved.

In regard to the establishment of an operational management program for water supply, sanitation and drainage infrastructure in Chittagong:

- Establishment of an operational management program for water supply by CWASA. The target was achieved.
- Establishment of an operational management program for sanitation. The target was not achieved.
- Establishment of an operational management program for drainage, The target was not achieved.

#### **PDO Indicators:**

- Clarified institutional mandates and responsibilities for sewerage and drainage established (baseline - no; target - yes; revised target - yes; actual - yes). The target was partially achieved.
- CWASA achieves O&M cost coverage from total revenues (baseline 99%; original target 100%; actual 92%; achievement level against original target 92%). The target was underachieved.
- CWASA maintains O&M cost coverage from direct water sales revenues (baseline 93%; original target 100%; revised target 85%; actual 86 %; achievement level against original target 92%). The target was underachieved.

**Outcomes:** In regard to the targeted establishment of long-term infrastructure development plans, the project achieved the targets to establish master plans for sanitation and drainage but did not achieve that in regard to water supply. Other significant achievements were the establishment of an institutional framework for defining and demarcating responsibilities between CWASA, CCC and CDA in regard to sanitation and drainage. Regarding establishment of operational management programs, while one was set up for water supply CWASA, those for sanitation and drainage were not completed at project closing. Regarding the PDO indicators for this objective, the target in respect of clarified mandates was partially achieved except in sludge management. Targets in regard to CWASA's O&M cost coverage were underachieved.

On balance, taking into account the underachievement of the PDO indicators, the ICRR rates efficacy for Objective 3 as Modest.

#### **Rating**

Modest

### **OBJECTIVE 3 REVISION 1**

#### **Revised Objective**

To improve CWASA's institutional capacity and investment planning for sanitation and drainage in Chittagong City.

#### **Revised Rationale**

At the project restructuring in 2014, the project component for sanitation and drainage was modified to drop activities related to carrying out investments for physical infrastructure for significant lack of progress in



identifying priorities, preparing procurement documents, and unclear institutional framework in regard to responsibilities. The component was amended to focus only on providing technical assistance for strategic and investment planning for sanitation and drainage. The ICR provides a diagrammatic presentation of the TOC. The project would provide inputs by financing technical assistance, including consultancies, supporting equipment and systems, and relevant training for CWASA staff. These inputs would directly contribute to outputs related to strengthening CWASA's institutional capacity, including for planning and operations. The outputs would include: (i) improvements in CWASA's organizational framework; (ii) development of plans for Management and Information Systems, Commercial Management, and Customer Services Improvement; (iii) development of a decentralized management model including Standard Operating Procedures (SOPs) and O&M Manuals; and (iv) relevant training to the concerned CWASA staff in regard to improved planning and operationalization of the improved procedures and practices. These outputs would lead to the outcome of strengthened planning and operational capacity for CWASA, including for sanitation and drainage. The longer-term outcomes would be improved performance by CWASA in delivering water supply, sanitation, and drainage services to the population in Chittagong City contributing thereby to improved health and productivity benefits for the population.

The TOC's causal links and full results chain were clear. The PDO indicators and the IR indicators were relevant, measurable and adequate for signaling attribution of the results to the project interventions.

#### **Outputs and Intermediate Result Indicators:** (ICR Annex 1 - Results Framework)

##### Targets overachieved, achieved or substantially achieved

- Sanitation and drainage strategy and master plan prepared by CWASA and approved by CWASA's Board. The target was achieved.
- Volume of safe water produced by CWASA (million liters per day - mlpd): (baseline 172 mlpd; target 360 mlpd; actual 360 mlpd; achievement level 100%).
- Volume of safe water sold/billed by CWASA (million liters per year- mlpv): (baseline 45,554 mlpv; target 105,120 mlpv; actual 92,471 mlpv; achievement level 88%).
- Institutional development plan prepared by CWASA and approved by CWASA's Board. The target was achieved.
- Plans for Management and Information Systems, Commercial Management, and Customer Services Improvement prepared by CWASA and approved by CWASA's Board. The individual targets were achieved.
- Standard Operating Procedures (SOP) and O&M Manuals prepared by CWASA and staff trained in their use. The target was achieved.
- Percentage of institutional capacity development activities supported by the project that are completed and approved by CWASA's Board. (baseline 40%; target 60%; actual 98%; achievement level 163%).
- Staff training development program prepared by CWASA and approved by CWASA's Board. The target was achieved.
- Number of staff trained under approved training and development programs: (baseline 0; target 350; actual 467; achievement level 134%).
- Number of zonal offices refurbished and equipped under the project (baseline 0; target 4; actual 4; achievement level 100%).

##### Targets underachieved



- CWASA's bill collection rate (baseline 99%; target 99%; actual 83%; achievement level 84%).

**PDO Indicators:**

- CWASA to achieve O&M cost coverage from direct water sales revenues (baseline 93%; original target 100%; revised target 85%; actual 86%; achievement level 101%). The revised target was achieved.
- CWASA to achieve a Water Utility Maturity (WUM) target level (target 3.00; actual; 3.06; achievement level 102%). The target was achieved. (The WUM proposes a generic assessment framework under which the utility's maturity level is assessed using five broad institutional dimensions (i) organizational behavior; (ii) structure/processes; (iii) capabilities; (iv) organizational; tools; and (v) influence. Each dimension is defined by four or five attributes adding up to a total of 22. (ICR para. 41, footnote 10).
- Total value of priority sanitation and drainage investments identified, prepared, and ready for financing (baseline 0; original target US\$150 million; revised target US\$150 million; actual US\$476 million; achievement level 317%). The target was substantially overachieved.

**Targets underachieved**

- CWASA's bill collection rate (baseline 99%; target 99%; actual 83%; achievement level 84%)

**Outcomes:** In regard to improving CWASA's institutional capacity, most targets in regard to outputs and intermediate results indicators were achieved or overachieved. The PDO indicator targets regarding CWASA's utility maturity level and O&M cost coverage through direct water sales were met. The ICR reports (para. 41) that the achievement of the target regarding utility maturity level was confirmed by an independent audit in 2019. The maturity level indicates that actions to realize strategies and policies are in place in CWASA to sustainably execute its mandate and achieve its organizational objectives. The ICR reports that the graduation in maturity level was underpinned by successes across multiple attributes including strategic and customer orientation, technical operations, commercial orientation, and financial management. The ICR reports (para. 42) that CWASA has put in place a 5-year Strategic Plan, and made significant improvements in enhancing commercialization, accountability, and effectiveness of key technical operational processes including development and utilization of SOP and O&M Manuals. The ICR reports (para. 42) that these improvements have resulted in service improvement in regard to supply reliability, water pressure and customer service, which were confirmed by a Customer Satisfaction Survey in 2018. However, significant weaknesses still remain in CWASA's financial situation including bill collection rates that were less than targeted and less than full coverage of its O&M costs.

In regard to improving CWASA's investment planning for sanitation and drainage, the PDO indicator in regard to identification and preparation of priority investments was substantially overachieved. The ICR reports (para. 43) that priority investments totaling US\$476 million have been identified and prepared for execution (compared to the target of US\$150 million). These strategic investments are contained in two master plans - for sanitation and drainage respectively - approved for Chittagong City in 2017. The plans specify priority investments up to 2030. The sanitation master plan will be implemented by CWASA while CCC will be responsible for implementing the drainage master plan. The ICR reports (para. 43) that three projects identified in the master plans have secured funding from the Government, indicating a start of implementation of the master plans. With the capacity building and clarification of institutional responsibilities supported by the project, the major constraints that led to the dropping of the original Objective 2 in regard to improving



access to sanitation are being addressed and the prospects of successful implementation of the priority sanitation investments have improved.

Based on the foregoing, taking into account the overachievement of all three PDO indicators, and while noting the persisting weaknesses in CWASA's financial self-sustainability with less than full coverage of O&M costs, the ICRR rates the efficacy for the Revised Objective 3 as Substantial.

**Revised Rating**  
 Substantial

**OVERALL EFFICACY**

**Rationale**

As discussed earlier in Section 4, the ICRR ratings are:

Objective 1 - Substantial with moderate shortcomings

Objective 2 - Negligible

Objective 3 - Modest

Based on the above, the ICRR rates overall efficacy as Modest.

**Overall Efficacy Rating**

Modest

**Primary Reason**

Low achievement

**OVERALL EFFICACY REVISION 1**

**Overall Efficacy Revision 1 Rationale**

As discussed earlier in Section 4, the ICRR ratings are:

Revised Objective 1 - High

Revised Objective 2 - Not rated (Objective 2 was dropped at the 2014 project restructuring)

Revised Objective 3 - Substantial

Based on the above, the ICRR rates the revised efficacy as Substantial.

**Overall Efficacy Revision 1 Rating**



Substantial

## 5. Efficiency

### Economic Efficiency

**At appraisal:** The economic efficiency of the project was assessed using a cost-benefit methodology based on an incremental net benefits approach, i.e. incremental costs and benefits attributable to the project derived from a comparison of the "with project" and "without project" scenarios. The analysis was carried out only for the water supply component under the project (covering about 90% of project costs). Economic costs included the capital investment costs, estimated O&M costs, and periodic re-investment costs. Economic benefits included (i) incremental consumption due to the project; (ii) health and cost savings from households switching from non-network sources to piped water supply that replaces existing water supply; (iii) time cost savings by bringing water closer to the households; and (iv) improvement in unaccounted water with the rehabilitation of the water supply transmission and distribution networks. The indicators of economic viability adopted were the Economic Internal Rate of Return (EIRR) and the Economic Net Present Value. The valuation was carried out for a period of 25 years using a discount rate of 10%. Based on this, the appraisal estimates of economic viability were: EIRR 16.7% and ENPV BDT 5,531 million. (PAD - Annex 9).

**Post-completion:** For the ICR, the post-completion analysis (ICR - Annex 4) has been carried out using the same methodology as at appraisal to enable comparisons with the appraisal estimates. However, the analysis includes some changes in assumptions. The main assumptions are indicated below:

Incremental consumption due to the project: (i) includes incremental consumption by existing customers as well as new customers provided with piped water connections; (ii) bases valuation on prevailing water tariff rates which were assessed to be low and therefore not indicative of peoples' willingness-to-pay.(WTP). It should be noted that this valuation is conservative since the prevailing tariffs are low and an alternative valuation of benefits based on WTP estimation from customer surveys would likely result in higher valuation than assumed in the ICR.

Cost-savings on non-incremental water source switching: (i) estimated on the basis of households switching from non-network sources to piped water from the network for reasons of health and cost saving; (ii) estimates that more than 1 million people were relying on non-network sources before the project; (iii) assumes that 50% of this number would switch to piped water supply from the project.

Time cost saving by households: (i) estimates that 13,300 piped water connections provided by the project would benefit over 65,000 households; (ii) .estimates time saving per household was 1 hour per day; (iii) bases valuation on opportunity cost of the time spent on water collection. This was valued using average labor costs in Chittagong as a proxy for the cost of time spent on water collection.

Reduction in unaccounted for water: (i) according to CWASA, the level of unaccounted for water was 27% in 2019. This level was higher than assumed at appraisal; (ii) the post-completion analysis assumes that, in the absence of the project, this level would have been higher and would increase in the future; (iii) .bases valuation on average water supply tariffs.

Based on the above, the post-completion estimates of the project's economic efficiency are:



EIRR - 22% (exceeding the estimates of 18.5% at appraisal and 16.7% at Additional Financing).

ENPV - BDT 10,761 million (exceeding the appraisal estimate of BDT 5,531 million).

The ICR notes (para. 47) that the post-completion economic viability indicators were higher than the appraisal estimates despite the delays that occurred in project implementation, and this was mainly due to the higher than expected benefits derived from time-cost savings (due to reduction in time spent on water collection) which were valued at the opportunity cost of wages that would have been lost due to time spent non water collection. This valuation was fortuitously increased by the significant increase in average labor costs over the implementation period of the project.

**Implementation Efficiency**

Project duration: As compared to the planned implementation period of 5,5 years, the actual implementation period was 10.5 years including four extensions of the project's closing date. As acknowledged in the ICR (para. 50), there were substantial delays in the early years of implementation mainly due to weaknesses in procurement processes and capacity. Two of the extensions were for reasons exogenous to the project - the impact of national elections and floods in 2018 and the COVID-19 pandemic in 2019-2020.

Project cost: As compared to the estimated cost of US\$186.8 million at appraisal, and the supplementary funding of US\$83.1 million provided through the Additional Financing in 2017, the actual project cost at completion was US\$196.4 million. During the implementation period, there were three cancellations of IDA funding for a total of US\$34.5 million. The cancellations resulted from a combination of factors including dropping of some of the originally planned investments (in regard to sanitation and drainage) and cost savings resulting from competitive bidding for contracts.

**Assessment of Efficiency**

Although the estimated post-completion economic viability indicators are higher than those estimated at appraisal, as noted in the ICR (Annex 4), this occurred despite the much longer than planned implementation period, and was principally the result of exogenous factors - an unanticipated increase in labor costs that contributed to increased value of time cost saving benefits - one of the principal components of project benefits. The project's implementation period was substantially longer than planned partly as a result of serious delays in the earlier period of implementation. While project costs were substantially lower than estimated at appraisal and Additional Financing, this also included the effect of dropping of some activities related to the sanitation and drainage component. On balance, the ICRR concurs with the ICR rating and rates the project's efficiency as Modest.

**Efficiency Rating**

Modest

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

Rate Available?	Point value (%)	*Coverage/Scope (%)
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Appraisal	✓	16.70	90.00 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	22.00	93.00 <input type="checkbox"/> Not Applicable

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

## 6. Outcome

Indicator	Before Restructuring	After Restructuring
<b>Relevance</b>	<b>Substantial</b>	<b>Substantial</b>
<b>Efficacy</b>	<b>Modest</b>	<b>Substantial</b>
Objective 1	Substantial	Not rated
Objective 2	Negligible	Not rated
Objective 3	Modest	Not rated
Revised Objective 1	Not rated	High
Revised Objective 2	Not rated	Not rated
Revised Objective 3	Not rated	Substantial
<b>Efficiency</b>	<b>Modest</b>	<b>Modest</b>
<b>Outcome Rating</b>	<b>Moderately Unsatisfactory</b>	<b>Moderately Satisfactory</b>
<b>Outcome Value</b>	<b>3</b>	<b>4</b>
Disbursement	US\$ 6.98 million	US\$154.84.3million
<b>Disbursement percentage</b>	<b>4.3%</b>	<b>95.7%</b>
Weight value	0.13	3.83
<b>Total weight</b>	<b>0.13 + 3.83 = 3.96 (rounded to 4.00)</b>	---
<b>Overall Outcome Rating</b>	<b>Moderately Satisfactory</b>	

- a. **Outcome Rating**  
Moderately Satisfactory

## 7. Risk to Development Outcome

**Technical and operational risks:** These are rated Moderate. While CWASA has the requisite technical capacity to carry out its operations, its operating efficiency will depend on its ability to maintain and operate



its equipment and facilities in good working order. Timely and adequate availability of financial resources to cover its O&M expenses will be crucial for efficient performance. Despite the support of the project, CWASA was not able to reach full cost coverage of its O&M expenses from its water sales revenues. Continued government support for improving its operating revenues will be a key requirement for future sustainability.

**Financial risks:** These are rated Moderate. As discussed above, continued government support would be needed to enable CWASA to realize sufficient operating revenues through its water and sanitation activities. However, tariffs for these activities are affected by political and social considerations, resulting in lower than cost-recovery levels. In addition, as reported in the ICR (para. 89), CWASA has accumulated high levels of debt and, starting from the year 2024, it will face increasing debt service levels. These obligations will have to be factored in the setting of adequate levels of tariffs.

**Institutional capacity risks:** These are rated Moderate. While CWASA's institutional capacity has been significantly strengthened under the project, sustainability of these gains will require continued commitment from CWASA management along with strong support from the government. Lacking these, the gains could be progressively eroded.

**Sanitation service delivery risks:** These are rated Moderate. CWASA's model for service delivery to LICs relies on community-based organizations as key stakeholders in the process. Critical to success would be the ability of these organizations to carry out their responsibilities. Future scaling up of the current pilot-level activities will depend upon demonstrated success in applying this model.

## 8. Assessment of Bank Performance

### a. Quality-at-Entry

The project represented a re-engagement by the Bank with CWASA after a period of two decades. The strategic relevance and PDO were well aligned with the GoB's development agenda and the Bank's Country Assistance Strategy. The project design included a poor-inclusive and comprehensive approach by including service provision to low-income communities (LICs) and initiating steps to address the sanitation and drainage issues by improved planning and development. The project design followed a phased-support approach by laying emphasis on priority water supply related investments while laying the foundation for future greater involvement in the sanitation and drainage sectors. Pilot activities were included to test and demonstrate approaches that had not been explored e.g. community-based water supply and sanitation services and a pilot septic sludge handling system with the aim of scaling-up based on experience. The Bank's appraisal took into account the need to balance investments in physical infrastructure with substantial institutional development. Technical, financial and economic aspects were well covered at appraisal. Appropriate arrangements were included in regard to environmental and social safeguards. The risk assessment was relevant and adequate mitigation measures proposed. However, as recognized in the ICR (para. 83), the project design and preparation had some deficiencies including incomplete diagnostics for sanitation and drainage activities; weaknesses in the PMU, particularly in regard to procurement management, (iii) insufficient readiness for implementation; and (iv) some



weaknesses in the M&E system - the ICR indicates that this was particularly the case for sanitation activities and led to the dropping of the objective at the 2014 restructuring.

### **Quality-at-Entry Rating** Moderately Satisfactory

#### **b. Quality of supervision**

The project experienced serious delays in the earlier years of project implementation. While the project was approved in June 2010, by the time of the first restructuring in 2014, only about 4% of the IDA funds had been disbursed. Implementation progress picked up after the Mid Term Review (MTR) in 2013 that led to the 2014 Level I restructuring. The restructuring reduced the project scope to selected critical works and technical assistance activities and the amount of the credit was reduced from US\$170 million to US\$157.8 million. This resulted in a revised PDO, and substantial changes in the Results Framework, including the PDO and IR indicators, as well as targets. Key support provided following the restructuring included technical assistance for CWASA's institutional strengthening program; an assessment of LICs provided through the Bank's Water and Sanitation Program; and hydraulic modeling of the distribution network as a basis for rationalizing CWASA's water distribution network. Following the restructuring, the project supervision team proactively followed up with CWASA and the PMU on implementation progress including technical quality management of the subprojects, contract management, and administrative actions required to expedite progress. Hands-on support, coaching and training, including in regard to procurement and financial management, were provided by Bank specialists as needed. However, one significant shortcoming during project supervision was the failure to address the substantial weaknesses in the M&E system that led to limited use of the M&E data for decision-making, identifying implementation problems and taking remedial actions in regard to improving project implementation progress. (This is discussed later in the ICRR in Section 9 under M&E Utilization).

The Bank fielded a total of 20 supervision missions during the implementation period. The project had three TTLs over its span. The missions were adequately supported by safeguard and fiduciary specialists. The back-to-office reporting in the ISRs was candid with PDO ratings ranging from unsatisfactory to satisfactory over the implementation period. Following the 2014 restructuring, implementation progress was consistently rated at Moderately Satisfactory until project closing.

On balance, given the substantial delays in implementation in the earlier years of project implementation, and inability to address some persistent weaknesses in the M&E system, the ICRR rates Bank performance during Supervision as Moderately Satisfactory.

### **Quality of Supervision Rating** Moderately Satisfactory

### **Overall Bank Performance Rating** Moderately Satisfactory



## 9. M&E Design, Implementation, & Utilization

### a. M&E Design

The ICR indicates (para. 69) that the project's M&E system was developed to optimize use of CWASA's routine monitoring and reporting system used for producing CWASA's Management Information Report. It was complemented with other project management reports. The project-related M&E system included a well-developed Results Framework including PDO indicators and Intermediate Result Indicators with intermediate and final targets. In most cases, baseline values were included. The indicators were relevant, measurable and generally adequate for signaling attribution of results to the project interventions. However, the ICR notes (para. 69) that there was one significant deficiency in regard to the PDO objective "To increase the sustainable access to sanitation". None of the PDO indicators adopted at appraisal was explicitly related to this outcome. The PDO indicator used for assessing access to sanitation actually related only to access to safe water. The indicator was dropped at the 2014 restructuring with the dropping of the objective of increased sustainable access to sanitation.

### b. M&E Implementation

Shortcomings in the M&E framework as designed were addressed during project implementation, particularly at the 2014 restructuring under which the PDO was revised and the PDO indicators and IR indicators formulated and aligned with the PDO, along with revisions in the associated targets based on experience. The Results Framework was strengthened through additional IR indicators, particularly in regard to the objective of CWASA's institutional strengthening and investment planning,. This included a new PDO indicator Water Utility Maturity level which measured utility institutional strength across key dimensions (discussed earlier in Section 4 under Revised Objective 3). The PDO indicator target regarding number of people gaining access to improved water supply was revised twice - under the 2014 restructuring and the 2017 Additional Financing. Under the latter, the target was revised upwards by over four times while the target for number of connections increase only slightly. The ICR reports (para. 70) this was due to revisions reported by CWASA regarding the number of beneficiaries supported per water connection. The ICR acknowledges (para. 70) this reflects a weakness in the M&E design which persisted for some time during implementation as well. The ICR reports (para. 71) that tracking and reporting of indicators faced challenges from a lack of dedicated staff within the PMU, resulting in irregular progress reporting and difficulty in validating authenticity and reliability of the information through comparison between different sources.

### c. M&E Utilization

The ICR reports (para. 72) that utilization of the project's M&E system was limited top providing updated information on project progress required for reporting to the Bank's supervision missions. The ICR further reports that lack of progress shown in the M&E results at early stages of project implementation did not prompt any appropriate remedial actions. Continued weaknesses in the M&E system hampered the PMU's ability in regard to decision-making and meeting project deadlines. The ICR reports that that M&E data were not used in contract management processes to flag issues and prompt actions to address poorly performing contracts.



## Assessment of M&E Quality

Based on the shortcomings identified above, the ICRR concurs with the ICR rating and rates the quality of the M&E system as Modest.

### M&E Quality Rating

Modest

## 10. Other Issues

### a. Safeguards

#### Environmental and Social Safeguards

At appraisal, the project was designated a Category B project that triggered two safeguard policies, Environmental Assessment (OP/BP 4.01) and Involuntary Resettlement (OP/BP 4.12). These were maintained through all subsequent project restructurings. Two policy frameworks were developed: the Environmental and Social Management Framework (ESMF) and the Resettlement Policy Framework (RPF).

**Environmental:** The ICR reports (paras 74 and Annex 7 - paras. 4 to 11) that Environmental Impact Assessments (EIAs) were prepared for the execution of the contracts for the WTP, transmission and distribution pipelines, and pumping stations. It affirms that provisions of the ESMF and EIAs complied with the provisions of OP/BP 4.01. The implementation of the safeguard measures was the responsibility of the contractors, with supervision by the PMU. The Bank team followed the progress of implementation, including through site visits. The safeguard measures being followed were found to be satisfactory. No cases of significant non-compliance were reported in the ICR.

Annex 7 to the ICR confirms (para. 12) that routine safeguard activities under the project were implemented by including the provisions in the contractual obligations. However, it observes that implementation of the "Capacity Building and Technical Assistance" part of the activities was poor and most of the resources allocated for this purpose could not be utilized. In paras. 6 to 12, it identifies some environment-related capacity-building issues that were not satisfactorily addressed during implementation. These include: (i) the Environmental Management Framework (EMF) described in the PAD was ambitious and some of the components could not be provided; (ii) most of the capacity building components identified at appraisal could not be implemented, partly due to the lack of support from CWASA management which did not accept the need for a separate environment focused unit in CWASA; and (iii) the intended training did not make any headway. The Annex also indicates the need for publishing the Water Resources Study that was carried out in regard to dealing with the issue of salinity of water sources (including from the Halda River) since the issue is of critical importance in ensuring quality of treated water from the Modunaghat WTP supported under the project.

**Social:** The ICR reports (para. 76) that the mitigation measures stipulated in the RPF were fully implemented. Possible sources of adverse impacts were anticipated for all major works with adequate mitigation provided. No acquisition of private land was required during implementation. Required lands were obtained through intergovernmental transfers. Civil works for transmission pipelines and the distribution network were implemented in a manner to minimize disruptions to businesses and the population. The only



resettlement impact under the project was the displacement of two temporary makeshift structures (affecting three households) which was done in accordance with an Abbreviated Resettlement Plan reviewed and cleared by the Bank's Regional Safeguards Advisor. The ICR reports (para. 78) that, during the Covid-19 outbreak, CWASA suspended all construction and civil works at all worksites and re-started work on a limited scale in the middle of June 2020 when the lockdown was withdrawn. The ICR affirms that the interim guidance note was implemented to the extent possible including through provision of extra and safer labor camps, daily temperature and symptom checks for all workers and contractors, and on-site handwashing and wearing of facemasks. However, practicing social distancing among workers was a challenge. Annex 7 (para. 13) affirms that a Grievance Redress Mechanism (GRM) was set up under the project but reports that beneficiaries were unaware of the GRM and the redress process. It recommends that the GRM should be a critical component of citizen engagement and should receive widespread publicity in the project areas.

The ICR does not report what were the Safeguards ratings in the last ISR before project closing. The ICR Annex 7 (para. 22) confirms that CWASA's overall social safeguards performance was always rated satisfactory.

## **b. Fiduciary Compliance**

**Procurement:** The ICR reports (para. 79) that, despite some issues, procurement was generally carried out in accordance with the Procurement Guidelines and the Consultant Guidelines (for the original project) and Procurement Regulations (for the Additional Financing). The main issues faced were related to inadequate procurement capacity in the PMU due to delays in recruitment of procurement staff and consultants in the PMU. This contributed to significant delays at the start of the project. The ICR reports that the issue was resolved later during implementation with the provision of dedicated procurement staff in the PMU. The Bank supervision team also provided capacity-building support. However, weaknesses in the project's M&E system (discussed earlier in Section 9) led to limited utilization of the system for monitoring of contracts, another factor contributing to delays in implementation. Despite these deficiencies, the ICR reports that, overall, CWASA was able to successfully complete procurement processes for five high-value works contracts executed with adequate quality. The ICR reports that there was one case of fraud in regard to oversight of procurement and controls in contract management during the second half of project implementation. This involved an international consulting firm engaged under a supervision contract. The Bank's INT (Integrity Vice Presidency) found that the firm, along with its sub-contractor firm, engaged in various forms of fraud and corruption, including corrupt payments to key officials. The ICR does not report on the actions taken after the investigation. In reviewing the draft ICRR submitted to them for comments, CWASA commented as follows: "CWASA is totally unaware of of this allegation. As far as we know, no such case was found about the key officials' involvement in corrupt practices". (Letter dated November 16, 2021 from the CWASA Managing Director to the Bank's Country Operations Manager in Dhaka).

**Financial Management:** The ICR reports (Annex 8) that, during project implementation, annual external audits for the project were conducted on a regular basis and audit reports were duly submitted to the Bank for review. However, from time to time, there were some significant issues in regard to compliance:

- Initial delays in submission of quarterly unaudited financial reports (IUFR).



- No internal audit was carried out for the first three years of the project as an internal auditor was not appointed until after the MTR. An internal audit report was submitted only towards the end of the project.
- During the first four years of implementation, submission of CWASA's entity audit reports was significantly delayed. Even by the end of the project, the delay had been brought down to about one year which the ICR claims was remarkable progress.
- There was a two year delay in setting up the Project Audit Committee that reviewed the audit reports.

The ICR does not report on the fiduciary (procurement and financial management) ratings in the last ISR before project closing.

**c. Unintended impacts (Positive or Negative)**

The ICR does not report any significant unintended impacts.

**d. Other**

**Gender:** The project's objective included increasing access to safe water. The project interventions included increasing and improving the number of household and community connections which led to convenience and time saving benefits for the households. Although gender was not specifically a focus under the project, to the extent that women played a special role within households in regard to ensuring adequacy of water and the health of children, they benefited from the project interventions.

**Poverty Reduction:** The original project had a component focused on increasing access to safe water and sanitation for urban slums and low-income communities. The objective in regard to sanitation was dropped at the 2014 restructuring and the scope of the water supply component reduced to address the needs of two slums on a pilot basis. Nevertheless, the project supported CWASA to prepare a model for providing community-based water supply and sanitation services. CWASA expects to be able to scale-up the delivery based on the experience with pilot schemes.

**Institutional Strengthening;** This was a major focus area under the project and the achievements were discussed earlier in Section 4 of the ICRR.

**Mobilizing Private Sector Support:** This was not a focus under the project.

**11. Ratings**

Ratings	ICR	IEG	Reason for Disagreements/Comment
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Outcome	Moderately Satisfactory	Moderately Satisfactory	
Bank Performance	Satisfactory	Moderately Satisfactory	The ICRR rates Bank performance for Quality-at-Entry as Moderately Satisfactory due to insufficient readiness for implementation and weaknesses in the M&E framework and Bank performance during Supervision as Moderately Satisfactory in view of delays in the earlier years of implementation and persistent weaknesses in the M&E system.
Quality of M&E	Modest	Modest	
Quality of ICR	---	Substantial	

## 12. Lessons

The ICR (paras. 94 to 98) provides a number of lessons learned from the project's experience. Based thereon, IEG derives the following lessons:

**Defining the scope of the project based on incomplete diagnostics can adversely affect project performance.** The project's experience has shown that large infrastructure works, such as the water treatment and transmission/distribution facilities supported under the project, need to be preceded by robust preparation and analytical works that clearly define the priorities to be followed during implementation. Uncertainty in this regard led to delays in identifying and initiating priorities to be addressed for improving CWASA's network. It was only after a hydraulic modeling exercise was carried out at the 2014 restructuring that the network improvement priorities were established and addressed.

**Establishment of a well-staffed and well-equipped Project Management Unit prior to the start of implementation is crucial for ensuring efficient implementation:** The absence of a strong, well-staffed and well-managed PMU was a critical factor in the significant delays in the earlier years of implementation. In the case of the project, adequate staffing of the PMU, including consultants, dedicated staff with designated functions, and a project manager were not in place until after the 2014 restructuring i.e. four years into project implementation. This contributed in part to the delayed completion of the project.

**Adequate attention needs to be paid throughout project implementation to ensuring that the project's M&E system remains updated and functional:** The experience under the project showed that M&E analysis and data were not readily available to PMU staff to monitor implementation progress and initiate remedial actions. The ICR notes that this contributed to the delays in implementation.



**Institutional development of a utility is a long process and, if possible, should build on the client's own program/platform:** The ICR assesses that CWASA's ownership of the institutional strengthening and reforms supported under the project was reinforced by the fact that this was built on the already ongoing "Go-Ahead" Program that was being implemented by CWASA. CWASA's continuing strong commitment to institutional reform would be crucial in sustaining the institutional improvement gains made under the project.

### 13. Assessment Recommended?

No

### 14. Comments on Quality of ICR

The ICR is well-written, candid, and generally follows the OPCS guidelines (except in regard to length - 26 pages compared to the recommended 15 pages). The ICR provides a good theory of change in regard to the causal links and full results chain, and the reporting is outcome-focused. The analysis is generally evidence based but constrained to some extent by weaknesses in the project's M&E system. The ICR does have some shortcomings. In regard to the technical assistance provided under the project, it focuses more on reporting project outputs but does not provide sufficient information on the impacts of the outputs e.g. operationalization of the plans/programs and evidence of improved performance. The ICR also has some inconsistencies in reporting of project costs as provided in the Data Sheet and Annex 3.

On balance, the ICRR rates the quality of the ICR as Substantial with minor shortcomings.

#### a. Quality of ICR Rating

Substantial