



1. Project Data

Project ID

P122269

Project Name

BD: Rural Water Supply Project

Country

Bangladesh

Practice Area(Lead)

Water

L/C/TF Number(s)

IDA-50750

Closing Date (Original)

30-Jun-2017

Total Project Cost (USD)

84,930,200.00

Bank Approval Date

22-Mar-2012

Closing Date (Actual)

31-Dec-2017

IBRD/IDA (USD)

Grants (USD)

Original Commitment

75,000,000.00

0.00

Revised Commitment

49,543,798.00

0.00

Actual

41,608,626.74

0.00

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2. Project Objectives and Components

a. Objectives

The project development objectives stated in the Financing Agreement (p .4) and Project Appraisal Document (p.5) is **“to increase provision of safe water supply and hygienic sanitation in the rural areas of the Recipient's country, where shallow aquifers are highly contaminated by arsenic and other pollutants such as salinity, iron, and bacterial pathogens, and to facilitate early emergency response”**.



The PDO was revised in June 2015 through a Level I restructuring, the revised PDO was **“to increase the provision of safe water supply and hygienic sanitation in selected rural areas of Bangladesh”**.

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

24-Jun-2015

c. Will a split evaluation be undertaken?

Yes

d. Components

a. Components

1. Rural Piped Water Supply (Appraisal Estimate Total US\$43.4 million, [IDA US\$30.7 million], Actual IDA US\$11.0 million) * see note concerning component cost data at the end of this sub-section

This component planned to finance 125 rural piped water schemes through a public-private participation (PPP) approach. The project aimed to mobilize private sector groups including entrepreneurs, NGOs, contractors and cooperatives) to construct and operate the schemes on behalf of Union Parishads (UPs- the lowest level of elected rural local councils), through a competitive process. Through restructuring in 2015, component's scope was reduced from 125 schemes to 35. The number of household connections was revised down from 71,506 to 14,000 households, due to slow progress in household connections.

2. Rural Non-Piped Water and Supply (Appraisal Estimate Total US\$25.10 million [IDA US\$25.10 million], Actual IDA US\$18.2 million) *.

This component planned to construct 14,000 water points and in addition 6,000 water point sources in disaster/flood affected areas. Nongovernment support organizations (SOs) helped to establish Union Water Supply and Sanitation Committees to mobilize communities, prepare action plans and train UPs and community groups, as well as managing and supervising the non-piped schemes. Department of Public Health Engineering (DPHE) hired contractors, through open competition, to construct the non-piped options. During the 2015 restructuring the planned 6,000 non-piped options in disaster-affected areas were dropped. The project team informed IEG that by the time of Mid Term Review DPHE had taken no action to identify the disaster-prone areas, hence no related activity had been initiated under this component therefore no funds were allocated for installation of hand pumps or other appropriate non-piped options in the area where water supply was severely affected by climate change and/or recurrent floods. Given the absence of progress on this sub-component, the total allocation was of US\$6.97 million was cancelled during project restructuring”.



3. Capacity Strengthening and Technical Assistance (Appraisal Estimate Total US\$17.7 million [IDA US\$14.83 million], Actual IDA US\$4.3 million for Capacity Strengthening and US\$4.2 million for Sanitation) *.

This component provided technical assistance (TA) in a number of areas to improve implementation including: (i) activities to promote a stakeholder dialogue, and develop a longer term sector framework on institutional management; (ii) capacity strengthening of DPHE personnel and government officials involved in the project; (iii) technical and social monitoring and evaluation to assess project achievements; (iv) community mobilization and development of action plans for non-piped water supply schemes, as well as community awareness building, hygiene promotion, and capacity building on hygienic sanitation practices; (v) pilots to promote demand for improved sanitation and hygiene; (vi) construction of hygienic sanitation facilities for poor households; (vii) financial audit and benchmarking of private sponsors' performance; and (viii) monitoring of groundwater resources.

During 2015 restructuring, the construction of improved latrines was moved to a separate component (Rural Sanitation), due to the works nature of the activities. Since the related activities such as developing business models, engaging and training businesses, identifying eligible households took more time than anticipated, the original target of 316,200 latrines was revised this to a more realistic scope of 50,000.

With the shifting of sanitation to a new Component 3, Capacity Strengthening and Technical Assistance was renumbered as Component 4. During the 2015 restructuring, TA activities were substantially reduced, including the cancellation of activities (i), (iii), (vii). At the request of the Government, TA for a feasibility assessment of WSS services delivery in small towns was added. In addition, Governance and Accountability Action Plan (GAAP) activities were included.

4. Project Management and Support (Appraisal Estimate Total US\$6.4 million [IDA US\$4.4 million], Actual IDA US\$3.34 million) *. This component supported DPHE for project implementation through establishment of the Project Management Unit (PMU) as well as water quality monitoring and environmental management.

5: Contingency for Disaster Risk Response (US\$0). This component aimed to support preparedness and rapid response to disaster, emergency, and catastrophic events, as needed through rapid reallocation of credit proceeds from other components under streamlined procurement and disbursement procedures. This contingency for disaster risk response was canceled together with the corresponding part of the PDO: "to facilitate early emergency response" in 2015.

*The ICR reported only IDA actual costs, total actual costs were not provided in Annex 3 of the ICR as required in the Bank Guidance for Implementation Completion and Results Reports for Investment Project Financing Operations.

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



Project Cost: Total project cost at appraisal was estimated at US\$92.6 million, then it was reduced to US\$56.5 million due to the reduction in project scope and targets as well as the cancellation of some of the activities. Actual total cost was US\$47.4 million (51% of the original amount and 84% of the revised amount) (ICR page 2).

Financing: The IDA credit (IDA-50750) of US\$75.0 million (SDR48.4 million) disbursed US\$41.6 million (SDR29.7 million) and US\$25.5 million (SDR18.1 million) was canceled at closing. US\$0.9 million was not disbursed by project closing (according to operations portal). Local sources were expected to provide US\$5.7 million; the actual amount was US\$4.6 million.

Borrower Contribution: At appraisal, the Borrower planned to contribute US\$2.8 million; this was decreased to US\$1.7 million, but the actual contribution at closing was US\$1.2 million (ICR, page 2).

Dates: The project was approved on March 22, 2012 and effective two months later, on May 13, 2012. The original closing date was June 30, 2017. This date was extended for six months via a Level II restructuring in May 2017 in order to complete disbursements and the actual closing date became December 31, 2017.

Restructuring: The project went through two restructurings. The first restructuring (approved on June 24, 2015) was a Level I restructuring and included: (i) revision of the PDO by removing the reference to focusing in areas where “shallow aquifers are highly contaminated by arsenic and other pollutants”; and “to facilitate early emergency response”; (ii) reducing targets for outcome and intermediate outcome indicators to reflect the reduced scope of the project; (iii) revising the components and their costs by creating a separate component for sanitation activities, canceling the disaster contingency component, and canceling several activities under capacity development; (iv) cancelation of IDA some funds and reallocation of the project’s proceeds between disbursement categories. The second restructuring (approved on May 30, 2017) was a Level II restructuring which extended the closing date by six months; and revised some outcome indicators further.

3. Relevance of Objectives

Rationale

The original and revised PDO remained highly relevant to Bangladesh’s development priorities and the national policy context throughout the duration of the project. As mentioned in the ICR, although water supply coverage in rural Bangladesh was estimated to be 97.1 percent in 2014, water quality posed a significant challenge, with an estimated 13 percent of the country’s improved sources having arsenic levels above 50 parts per billion (ppb), which the Government defines as the threshold of danger. Other threats included salinity, iron, the low water table, and bacteriological contamination in shallow tube wells



(paragraph 3). The ICR also noted that local authorities lacked the capacity to pursue their mandated responsibilities in rural water supply and service delivery, which led to weak service delivery mechanisms and a lack of ownership by users leading to reduced sustainability of the water and sanitary services. There was a need to clarify the roles between the DPHE at the central, and local government. Planning and service delivery were often supply driven, and government agencies had overlapping functions and paid insufficient attention to operation and maintenance issues, and user involvement (paragraph 5). Although the proportion of the rural population covered by piped water supply was relatively small, it was anticipated that a substantial percentage of the population would demand piped water supply in the near future and this required higher investment costs, and alternative institutional management, and operations and maintenance models that were relatively new in Bangladesh.

Another area of concern was the quality of sanitation coverage: although there had been significant movement from 'open defecation' towards 'fixed point defecation,' a study by the World Bank revealed that only 37 percent of the latrines in Bangladesh were hygienic, while 35 percent were unclean. Recognizing these serious quality challenges, the Government developed the National Sanitation Strategy in 2005 and promoted the concept of a hygienic latrine with the intention that people would gradually move towards this technology (ICR, paragraph 8).

The project's activities and objectives of improving access to water supply and sanitation infrastructure was consistent with a range of national policies and strategies, including the 7th Five Year Plan (2016-2020) which included water and sanitation strategies and targets. The project's focus on engagement with the private sector and implementation of innovative solutions to address water quality issues, demonstrated that the project was aligned with strategic thinking in the domestic water supply and sanitation sectors.

The PDO remained aligned with the World Bank Group's Country Partnership Framework (CPF) for 2016-2020 in which water and sanitation are integrated into the World Bank's focus on social inclusion as well as climate and environmental management. The project also contributed to the CPF's objective of improving access to quality maternal and infant health services.

The revised objective remained highly relevant to country and Bank strategies and priorities.

Rating
High

4. Achievement of Objectives (Efficacy)

Objective 1



Objective

The original objective of first increasing provision of safe water supply and hygienic sanitation in the rural areas of the Recipient's country, where shallow aquifers are highly contaminated by arsenic and other pollutants such as salinity, iron, and bacterial pathogens, and second facilitating early emergency response can be divided into two objectives, namely Objectives 1 and 2. As mentioned above, at the project's restructuring in 2015 the first objective was revised to a narrower scope and the second objective was dropped.

Original Objective 1: "To increase provision of safe water supply and hygienic sanitation in the rural areas of the Recipient's country, where shallow aquifers are highly contaminated by arsenic and other pollutants such as salinity, iron, and bacterial pathogens"

Rationale

According to the project's Theory of Change (ICR, paragraphs 9-13), the aim was to increase access to safe water and improve access to hygienic latrines through a series of innovative service delivery models including mobilization of the private sector to provide complementary finance, promote infrastructure expansion and to manage and operate the services. The project focused on 383 Unions in 33 districts identified as priority areas on the basis of the incidence of arsenic contamination, salinity and water supply coverage. In addition, the design placed strong emphasis on the engagement of communities within the planning and implementation of the infrastructure services to ensure community voice within the decision making processes with the aim of increasing local ownership and supporting long-term sustainability of services.

Outputs:

Access to Safe Water

- 37 piped water schemes in areas where shallow aquifers were constructed in areas highly contaminated by arsenic and other pollutants, compared to the original target of 125.
- 21,802 household connections have been achieved, which was 30 percent of the original target
- 18 existing schemes were rehabilitated through the project.
- 20,475 deep tube wells, rain water harvesting structures, pond sand filter & ring wells were constructed under the project, compared to the original target of 71,506.(28 percent of the target)
- 383 water user committees were established (meeting the target).

Access to Hygienic Sanitation

- 55,000 household latrines were constructed, compared to original target of 316,200.

Outcome:

The project did not meet the original targets on provision of safe water supply and sanitation in selected rural areas, therefore the achievement of the Outcome is rated as Negligible.

Rating

Modest



Objective 1 Revision 1

Revised Objective

To increase the provision of safe water supply and hygienic sanitation in selected rural areas of Bangladesh.

Revised Rationale

The original objective was modified to remove the focus on areas where “shallow aquifers are highly contaminated by arsenic and other pollutants”. The ICR noted that this aspect of the change in the objective did not represent a change in strategy of the project because these areas remained a focus following this change (paragraph 22). The ICR was, however, not clear whether or not the change made the objective more specific and without formal qualification as to eligibility of the areas to be included in the project's investments.

Outputs:

Access to Safe Water

- 37 piped water schemes in areas where shallow aquifers were constructed in selected rural areas, compared to the revised target of 35.
- 21,802 household connections have been achieved, which is 78 per cent of the revised target of June 2015. This was done by private sponsors that were selected through a competitive process.
- 18 existing schemes were rehabilitated through the project.
- 20,475 deep tube wells, rain water harvesting structures, pond sand filter & ring wells were constructed under the project, compared to the revised target of 14,000 of June 2015.
- 383 water user committees were established (meeting the target).

Access to Hygienic Sanitation

- 55,000 household latrines were constructed, compared to the revised target of 50,000.
- 450 local private sector entrepreneurs were engaged and given training to manufacture and build latrines, out of these 199 (44 percent) became active in the project. Several designs were promoted through the project enabling households to select a latrine option based on preference and cost.

Capacity Building:

- 11,000 participants from government implementing agencies at central and local levels were provided training. Training areas included management of piped water schemes (tariff structures, operation and maintenance of water schemes, ward action plans (WAPs), sanitation and hygiene education and sanitation marketing.
- The establishment of 383 water user committees provided communities representation and engagement in the construction and operation of schemes. Technical design for an additional 89 piped water schemes were completed during the project implementation period.

Intermediate Outcomes



- **Water quality:** DPHE laboratories undertook water quality monitoring on 2,020 non-piped water points, around 10% of the total constructed. In 25 arsenic prone districts 1,226 of the tube wells tested by DPHE and 97 AIRPs were cross-checked for arsenic contamination by the International Centre for Diarrheal Disease Research. Results showed that out of 1,226 tube wells ~95% met the quality standards and 78 were found to be contaminated with arsenic over the permissible limit of Bangladesh (0.050 mg/l).
- **Targeting the Poor for Latrines:** The project targeted poor households without a latrine or with poor quality latrines, identified through the Ward Action Plans, enabling them to be prioritized for the subsidized latrines. Local entrepreneurs provided promotion materials, which included hygiene messages, and took responsibility for reaching out to all potential customers. A subsidy to the poorest households was provided and was significantly increased at the time of the project restructuring in June 2015. However, some of the identified poor households were not motivated to construct improved latrines or could not afford the household contribution. At the time of the ICR preparation, data were not available on the effectiveness of the targeting and what percentage of the funding for subsidized latrines was captured by non-poor households.

In summary, evidence in the ICR indicates that the project met or exceeded the revised first objective and the associated targets on provision of safe water supply and hygienic sanitation. Close to 1.4 million people in rural areas were provided with access to improved water sources (exceeding the revised target of 924,00) and 863,836 of them were female beneficiaries (exceeding the target of 599,500 female beneficiaries). In addition, 247,500 people were provided with access to hygienic latrines (exceeding the revised target of 225,000). Also, the random samples to test water quality showed that 95% of the cases met quality standards. Nevertheless, in addition to the uncertainty in the ICR regarding the implications of the revised objective for the eligibility of areas benefiting from project investments (see revised rationale), the ICR lacked information on: (i) disaggregated figures for poor households to show what percentage of subsidized latrines were provided to the poor households; (ii) behavior change of households in terms of their actual utilization of the latrines and whether open defecation numbers were reduced following the provision of the latrines.

On balance, the achievement of the revised objective is rated Substantial.

Revised Rating

Substantial

Objective 2

Objective

(ii) To facilitate early emergency response.

Rationale

The project did not pursue this objective. The original aim was to facilitate preparedness in Bangladesh for coping with natural disasters and other catastrophic events, but this activity was canceled during the Level I



restructuring in June 2015. While the ICR did not report on the reason for cancelation this activity, the Restructuring Paper stated that the reason was “to limit the project objective to focus only on the access to safe water supply and improved sanitation dimensions of the original PDO” (page 6). This was not necessarily a shortcoming in the project’s achievements because the facility for emergency response was originally proposed as a means to mobilize quick action and financing in case of an emergency.

Rating
Negligible

Rationale

The efficacy of the original Objective 1 was modest given the considerable shortcomings against the original targets. However, efficacy of the revised Objective 1 was substantial.

The efficacy of the original Objective 2 was rated negligible given there was no activity and no emergency to cope with.

Overall Efficacy Rating

Substantial

5. Efficiency

Economic Efficiency:

The ICR (paragraph 52) noted that estimates in the PAD and in the ICR of gross benefits of *piped* water supply and adopted in the economic analysis of this project’s investment in increased safe domestic water supplies in rural areas were based on (a) revenues from the expected value of water sales; (b) estimates of employment opportunities created in the project areas as a result of additional and increased economic and social activities; and (c) estimated health benefits. The ICR provided no information, however, on the assumptions made or their reliability. Assuming a scheme life of 25 years and 10% discount rate which the PAD considered a conservative cost of capital (paragraph 49 the Net Present Value (NPV) was estimated in the ICR for the completed project at Taka 1,310 million compared to Taka 5,050 million at appraisal. The economic rate of return (ERR) when the project closed was estimated to be 28%, compared to 33.4% at the time of appraisal.

The gross benefits of improved *non-piped* water supply included in the calculation of the NPV were estimates based on (a) health benefits to the individuals and the country as a whole and (b) potential time-cost saving by not travelling long distances to collect water but again the ICR provided no information on these estimates or their basis. The average life of investment was considered to be 20 years for these schemes. The NPV has



been calculated as Taka11,430 million based on the final project results, compared to Taka9,149 million at the time of appraisal. The ICR estimated the ERR to be 118% at completion, compared to the original base case ERR of 52% for the original project scope.

According to the ICR, to remain consistent with the original methodology no additional analysis of the efficiency of the sanitation program was undertaken for the ICR (paragraph 55). Therefore, the full economic benefits of increasing access to improved sanitation, including the health benefits, were not captured in the model used to assess the project's efficiency. Although the project's investment in latrines was only a small part of the project's total cost (10% of the IDA contribution) an assessment of the health benefits from the program was arguably a shortcoming that did not need to be carried over from the analysis in the appraisal. The financial analysis carried out during the June 2015 restructuring showed that the rural piped water schemes would break even at 288 connections and finally at 363 connections to cover all of the operation and maintenance (O&M) expenses. It was estimated that the scheme would yield an internal rate of return higher than the cost of equity (10%), indicating a financially viable business model for private sector sponsors (ICR, paragraph 56).

Administrative and Operational Efficiency

The project achieved all its revised targets for Objective 1 following a six-month extension and the revised loan funds were nearly fully utilized (97 percent). Annex 3 of the ICR suggests that project management costs financed by IDA were 8% of IDA disbursements which is within the expected range for most investment projects. It is not possible to know, however, whether this is the proportion that total project management costs represented of total project costs because of the shortcomings of the information on project costs in Annex 3.

In summary, despite the lack of evidence on critical assumptions in the economic analysis, the results in the ICR show substantial economic efficiency. Overall, this review therefore rates efficiency as substantial.

Efficiency Rating

Substantial

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 (%)
Appraisal		0	0 <input type="checkbox"/> Not Applicable
ICR Estimate		0	0 <input type="checkbox"/> Not Applicable

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



6. Outcome

Original Objectives. The relevance of the original Objectives 1 and 2 was rated 'High'. On the other hand, the efficacy of the PDO's was rated Modest and Negligible. Efficiency of the project's implementation, despite its minimal achievements and based only on Objective 1, was rated Substantial. Nevertheless, the project's overall outcome before restructuring was rated Unsatisfactory.

Revised Objectives. The efficacy of the only remaining Objective 1 after restructuring in 2015 was rated 'Substantial' and hence because relevance and efficiency were rated respectively high and substantial, the project's overall outcome rating when the project closed is rated as Satisfactory.

Since close to 80% of disbursements occurred after project restructuring the overall outcome of the project is rated 'Moderately Satisfactory'. This conclusion is based on a rating of outcomes using a scale of 1 to 6, and using disbursement weights of 0.2 and 0.8 for outcomes before and after restructuring which results in the following calculation: $(0.2 \times 2) + (0.8 \times 5) = 4.4$ and rounding it to the nearest whole number of 4 indicates an overall outcome rating for the project of "Moderately Satisfactory".

a. Outcome Rating

Moderately Satisfactory

7. Risk to Development Outcome

Institutional Sustainability: The ICR noted that the long-term viability of the business models used to deliver WSS services under this project depended on the ability of local government to develop their capacity to effectively fulfil their oversight and management roles as well as the ability of households to continue to pay for their service fees. If household income drops to a point where the private sector is no longer able or willing to operate the scheme, the local government will have to step in to manage and finance service provision. However, the ICR was not clear whether the project has sensitized local governments on these issues.

Environmental Sustainability: In the near future, the sustainability of water sources may come under pressure as extraction to serve a range of water uses (such as for agriculture, and industry) increases in some areas. Also, unpredictable weather patterns and increasing saline intrusion, may impact water availability and quality, rendering existing water sources unusable (ICR, paragraph 102).

Limited Behavior Change: It was also stressed in the ICR that without ongoing communication campaigns to reinforce behavior change in a household's sanitation and hygiene practices, there is a risk that households may continue previous unhygienic social norms. This could also occur when existing sanitation infrastructure requires maintenance or upgrading, which may be challenging for poorer households. The project did not target hygiene behavior change in 100 percent of households across target communities. As a result, the health impact of those benefiting from the project might be reduced, due to continued poor hygiene practice (ICR, paragraph 103).



8. Assessment of Bank Performance

a. Quality-at-Entry

The strengths of quality at entry included the following:

- According to the project's design scaled up the approach on private sector engagement in piped water supply schemes that was piloted under the predecessor project-Water Supply Program Project. The lessons from the previous project provided insights on the capacity and roles and involvement of DPHE, communities and UPs in planning and operating schemes, and the challenges of constructively engaging the private sector (paragraph 94).

Shortcomings at entry were:

- M&E Design had some weaknesses including lack of key indicators on poverty, behavior change and gender.
- The design overestimated the capacity of DPHE and set overly ambitious targets, which had to be scaled back through a restructuring process.
- Despite the previous experience, the project design significantly underestimated the preparation time required to establish the necessary government capacity and systems to undertake the procurement activities, and subsequent feasibility studies and designs required to commence such an ambitious project.
- The project would have benefited from the completion of a more thorough market survey. This could have captured the availability, interest and capacity of potential private sector partners for the different components of the project. The project failed to anticipate the lack of firms interested and with sufficient capacity to act as contractors and sponsors. The risk assessment failed to identify this area as a risk with adequate mitigation measures.

Quality-at-Entry Rating

Moderately Satisfactory

b. Quality of supervision

The World Bank team reportedly conducted regular supervision missions that were composed of multidisciplinary teams (financial management, procurement, safeguards and technical expertise) reviewed all relevant documents as part of the supervision process. The recommendations in the aide memoires to address issues were agreed with the implementing agencies. The World Bank team provided advice to counterparts with the PMU to support implementation of the project to ensure the technical quality of scheme constructed, validation of water quality protocols, contract management and M&E activities. In IEG's assessment, the Bank team deserves credit that the project was restructured through a Level I restructuring early enough to reduce the scope to a reasonable level. This revision substantially helped achieving the project results during the rest of the implementation period (ICR, para 96-98).

Quality of Supervision Rating

Satisfactory



Overall Bank Performance Rating

Moderately Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

Although most of the outcome indicators were adequately measuring the PDO, and many intermediate result indicators were disaggregated by component that sought to measure key aspects contributing to the outcome indicator, weaknesses in indicators included the following: (i) Indicators to measure the project's targeting of poor and vulnerable households were not included; (ii) Behavior change on hygiene practices on sanitation was not monitored; (iii) Initial targets (and project scope) were too ambitious; (iv) No gender disaggregated indicators were included except (female beneficiaries).

The baseline data for the project were combined with initial feasibility studies and used to validate secondary data collected by DPHE with support from the Japan International Cooperation Agency (JICA). A reconnaissance survey was conducted prior to feasibility studies to confirm and select eligible village sites for piped water supply schemes. DPHE's robust groundwater hydrology data on arsenic affected areas was used to select the Project Unions on merit (scoring) basis (ICR, paragraph 82).

b. M&E Implementation

According to the ICR, initially all reporting was done through a paper-based approach, and it took four years for DPHE to put in place a MIS system to track overall progress of the project and deliver data-backed reporting. Therefore, the reporting from the Unions was not systematic during the earlier years of the project. Even under the MIS system, the PMU did not have a thorough system to bring all data together in a comprehensive manner. Consistent concerns were raised by the World Bank project team in relation to the quality of monitoring and supervision undertaken by the PMU and implementing agencies. Information provided from the monitoring system was validated through intercalibration between different data sources and stakeholders. It would have been desirable to undertake more detailed field surveys with project beneficiaries to identify specific ways that the project benefited women, vulnerable groups, and the poor (paragraphs 83 and 84).

c. M&E Utilization

The results of the M&E system were utilized by project management to monitor progress and developed final project reports. However, M&E data was not used in contract management processes to flag issues and take actions to address a number of poor performing contracts.

M&E Quality Rating

Modest



10. Other Issues

a. Safeguards

Environment safeguards. The project was classified as Category B because its activities were not expected to cause any significant negative or irreversible changes in the environment. The safeguards triggered were Environmental Assessment (OP/BP 4.01), Involuntary Resettlement (OP/BP 4.12), Indigenous Peoples (OP/BP 4.10), Projects on International Waterways (OP/BP 7.50). According to the ICR an Environmental Management Framework (EMF), satisfactory to the Bank, was prepared by DPHE to manage the projects' impacts with adequate public consultation and information disclosure during the preparation of Environment Assessment documents. Specific measures for managing the environmental impact of arsenic contaminated sludge are provided in the EMF document which addressed the environmental safeguard issues as per the Bank's guidelines and the Bangladesh national policies, guidelines, codes of practice, and procedures. The ICR also reported that (paragraph 90), Environmental Management Plans (EMP) were implemented at each of the water scheme sites to mitigate against resulting environmental impacts identified during the Limited Environmental Assessments. A clear methodology was developed for the monitoring of water quality, most importantly arsenic contamination, and this was undertaken thoroughly, with the support of third party verification.

In terms of International Waterways safeguards, an exception to the riparian notification requirements under OP7.50 was approved by the South Asia Region Vice President, because the project rehabilitated and improved existing schemes currently used by project beneficiaries, and because the project was not expected to adversely change the quantity or quality of the water flows to the other riparian countries (ICR, paragraph 91).

Social safeguards. In terms of Involuntary Resettlement, PHE prepared a Resettlement Policy Framework (RPF). While no involuntary resettlement was required in the project, land was purchased to construct infrastructure in 12 schemes was completed during the project. Permission from relevant government authority was obtained to sustain the scheme construction but formal transfer process in the name of the scheme requires a lengthy administrative process. It was not clear from the ICR, if purchase of the land involved any private party holders and whether willing buyer willing seller process was in place.

In terms of Indigenous People Safeguards, DPHE prepared an Indigenous People's Planning Framework (IPPF) which was applicable to all water supply and sanitation schemes should they be located in areas where there were indigenous populations. However, this safeguard ended up not being utilized, as no indigenous populations areas were included under the project.

The ICR did not provide information on safeguard compliance, including any ratings for safeguard assessments during implementation, if any issues were recorded and how they were resolved. The project team subsequently informed IEG that, "Environmental safeguards assessment during implementation was considered moderately satisfactory. On testing of water quality, it was found that out of 1,226 tube wells, 78 were contaminated with arsenic; over the permissible limit of Bangladesh (0.050 mg/l). If space was available, AIRPs (Arsenic, Iron Removal Plants) were constructed and where it was not possible to construct AIRPs, alternative point of use devices (i.e., Sono Filters) were provided. People were advised to use the high arsenic wells for purpose other than drinking water. The safeguards ratings for 'social' was also rated 'moderately satisfactory' during implementation. The 12 areas included private sellers and the acquisition was carried out through the 'willing buyer, willing seller' process".



b. Fiduciary Compliance

Financial Management (FM). The ICR noted that the FM Risk at appraisal was assessed as Substantial due to absence of a dedicated FM department, computerized accounting system, and an internal audit unit in DPHE. Although, the FM capacity of DPHE improved during the project period, the main areas of concern remained. Initially financial records were kept offline, and while the project moved to an off-the-shelf electronic accounting package, manual record keeping continued to be used in parallel. The project faced ongoing problems in relation to the submission of internal audit reports, however despite the government's lack of capacity in this area, all requirements were met; procedures were followed in the budgeting process in line with government requirements (paragraph 88). It was not clear from the ICR if independent audits of the project accounts were made, and whether they included qualified opinions. The project team subsequently informed IEG that "External audit of the project financial statement was conducted annually by the Comptroller and Auditor General of Bangladesh. The auditors have expressed an unqualified audit opinion on the financial statements which means there was no material misstatement. However, the auditors noted some internal control weaknesses in the malmanagement letters annexed to the audit reports which were subsequently resolved by taking appropriate measures".

Procurement. According to the ICR an initial assessment of DPHE's procurement processes identified a number of weakness in their systems and human capacity, which were tried to be addressed through consultant support, training, and guidance. However, DPHE's inability continued to manage the procurement in an efficient manner and this was the central reason for the project's initial delay and subsequent restructuring. DPHE capacity to manage procurement processes improved during implementation, however contract management skills remained weak throughout (paragraph 89). The overall project procurement performance was rated by the ICR as 'Moderately Satisfactory'.

c. Unintended impacts (Positive or Negative)

No unintended benefits were reported.

d. Other

Gender aspects were not monitored during implementation, despite having been added as an indicator at restructuring.

11. Ratings



Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Moderately Satisfactory	Moderately Satisfactory	---
Bank Performance	Moderately Satisfactory	Moderately Satisfactory	---
Quality of M&E	Modest	Modest	---
Quality of ICR		Modest	---

12. Lessons

The ICR provided important lessons, the most relevant ones are as follows (with some editing):

- **Large scale piped water scheme investments require considerable upfront preparation in terms of market analysis and design to enable timely implementation.** The project experience showed that approaches that engage private sector actors in the delivery and management of water and sanitation services would benefit from detailed market analysis surveys prior to commencing the design of business models and procurement processes, so that the availability and ability of private sponsors can be assessed more effectively. In addition, the technical designs of piped water schemes need to involve various actors, including technical experts, local government and targeted communities, so as to ensure the designs match the needs (ICR, paragraph 104).
- **Private sector models have proven effective in mobilizing additional financial resources for the water supply and sanitation (WSS) sectors and supplementing weak service delivery capacity, however the enabling environment for effective private sector engagement needs to be developed.** In this project the private sector played a critical role through providing complementary financing to service provision, as well as supplementing local government capacity. As the ICR indicated the engagement of private sector enabled local government to play more of a facilitating and oversight role in the WSS sector. At the same time Government policies in Bangladesh led to reduced barriers to entry for the private sector and hence provided greater incentives for the private sector to engage in the WSS sector (paragraph 108). In addition, the capacity of government, both centrally and at the local level, needs be strengthened to provide these arms of government with the skills and systems to more effectively carry out their leadership and regulatory facilitation roles.
- **To ensure resources and services reach poor and vulnerable groups, effective mechanisms and indicators are needed.** The ICR noted (paragraph 109) that despite the project's focus on targeting the poorest households, political pressure led to in some cases to elite capture of sanitation facilities although it is noted that the Bank project team informed IEG that not all identified poor households were interested to purchase latrines at subsidized rate, therefore the project allowed middle income groups to receive latrines. Nevertheless (as mentioned in the ICR), a drawback of the business model used in this project, was that it focused on sponsors maximizing revenue and profit. Hence businesses reportedly focused on customers who were able to afford services and pay tariffs. While there were some examples of pro-poor action, formal incentives were not built into the model to ensure poorer households were served and supported when they were not able to afford services. Since, the M&E framework did not include disaggregated data on the poor and vulnerable, this issue could not be adequately tracked and addressed in this project.



13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR was well written, quite comprehensive and clear with articulation of implementation challenges as well as some useful lessons. However, significant shortcomings included (i) no information on the results safeguards assessments during implementation, ratings, issues and how safeguard mitigation was carried out; (ii) no information on independent audits of financial management; (iii) evidence presented on efficacy was weak, as the ICR was unclear about the implications of the revised first objective on eligible locations for investments, did not provide disaggregated data on poor beneficiaries of the sanitation component, nor was there any information on sanitation behavior change among beneficiaries; (iv) Annex 3 did not provide estimated appraisal and actual costs for the project by components as required in the guidelines for the preparation of ICRs; (v) there was no clear explanation of the reasons for the cancelation of the emergency response objective; and (vi) lack of evidence on critical assumptions used in the analysis of efficiency.

a. Quality of ICR Rating

Modest