

FINANCIAL ANALYSIS

I. INTRODUCTION AND METHODOLOGY

A. Introduction

1. A financial analysis has been conducted for the proposed West Bengal Drinking Water Sector Improvement Project in accordance with the guidelines for the Financial Management and Analysis of Projects of the Asian Development Bank (ADB).¹

2. Among the states of India, West Bengal is the fourth most populous and the sixth largest economy. It is by far the worst-impacted state in India from arsenic and fluoride in the drinking water, hosting around 84% of India's population at risk from arsenic and 10% at risk of fluoride contamination.² As a result, West Bengal faces significant public health risks and resultant economic impacts. Vision 2020, the sector development plan of the Government of West Bengal (GOWB), plans to shift the population from reliance on groundwater-based schemes to surface water-based piped water supply schemes, which offer a greater certainty in water security in the long term.³ ADB will support the GOWB in financing the proposed project to ensure drinking water security. The project aims to provide safe, sustainable, and inclusive drinking water to about 1.65 million people in Bankura (fluoride affected), North 24 Parganas (arsenic affected), and Purba Medinipur (salinity affected) districts, with the following outputs: (i) climate-resilient drinking water infrastructure constructed; and (ii) institutions and capacity of stakeholders for drinking water service delivery strengthened.⁴

B. Methodology

3. The financial analysis assesses the ability of the project to meet its costs, including capital expenditure and operation and maintenance (O&M), out of its revenue streams. The areas covered under the project currently do not have piped water supply.⁵ The new water user charge structure to be established by the 66 project *gram panchayats* (governing bodies working at the village level) under the agreed asset management and service delivery framework (AMDSF) is not premised on a full cost recovery. The GOWB issued a government order on 9 November 2017 on the AMDSF defining the roles and responsibilities of the Public Health Engineering Department (PHED) of the GOWB (the bulk supplier and regulator of services) and the project *gram panchayats* (the distribution service managers) under the project. The proposed water user charge structure under the AMDSF will include a levy of monthly flat-water user charge equivalent to ₹75 per connection, with an increase of 10% every 5 years. All connections will be provided free of charge to consumers under the project. Upon completion of the project, the PHED will hand over the distribution networks to the project *gram panchayats* for O&M. The PHED will operate and maintain bulk water systems to the project *gram panchayats*, which, in turn, will maintain the distribution network within their premises to supply water to the households and registered water users. The AMDSF has been included in loan documents. The GOWB agreed to seek ADB's agreement if the AMDSF were to be revised.

¹ ADB. 2005. *Financial Management and Analysis of Projects*. Manila.

² Government of India, Ministry of Home Affairs, Office of the Registrar General and Census Commissioner. 2011. *2011 Census of India*. New Delhi; and Government of India, Ministry of Drinking Water and Sanitation. Integrated Management Information System. Data valid as of 17 May 2018.

³ Government of West Bengal, Public Health Engineering Department. 2011. *Vision 2020: To provide Safe, Sustainable, and Adequate Water Supply to All Humans and Livestock in West Bengal by 2020*. Kolkata.

⁴ One neighboring block in South 24 Parganas district (arsenic affected) is also included in the project.

⁵ As of November 2017, the GOWB did not levy water user charges.

4. With this background, the financial analysis focused on the cash flow of the project *gram panchayats* to determine their overall financial health and ability to absorb the incremental O&M costs of the assets established under the project. The financial analysis included (i) a review of the project *gram panchayats*' historical financial performance; and (ii) a financial forecast, meant to determine whether the project gram panchayats will have the financial strength to continue to maintain and operate the newly developed assets after the completion of the project.

C. Sample for Financial Analysis

5. The detailed engineering designs of all subprojects for the project *gram panchayats* had not been completed as of November 2017. The three sample *gram panchayats* for which detailed engineering designs were finalized—Chaltaberia, Kashbalanda, and Sonapukur Sankarpur—were selected to serve as samples for the financial analysis.

II. FINANCIAL ANALYSIS OF SAMPLE GRAM PANCHAYATS

A. Water User Charge

6. The water user charge policy in India is to recover O&M costs and depreciation, and gradually recover full costs including interest and a reasonable rate of return. The PHED is responsible for rural water supply in West Bengal but currently does not implement water user charges. Under the project, the GOWB has agreed to implement the AMSDF, which will allow the project gram panchayats to collect a monthly charge for potable piped water supplied to consumer premises. Monthly flat-water user charges are proposed at ₹75 per connection with a regular increase of 10% every 5 years. The project will provide free connections to households.

B. Affordability Analysis

7. An affordability and willingness-to-pay survey was conducted in the sample *gram panchayats* as part of the project preparatory work. Given the proposed user charge structure in 2021 (the first year of operations), the monthly water charges are estimated to be 1.5%–2.5% of the average monthly household income (Table 1). This demonstrates that the cost of water user charges for all income categories in the project gram panchayats is affordable, considering the generally accepted ceiling of 5.0% of household income in India. According to the affordability and willingness-to-pay survey, 78% of respondents agreed to pay more than ₹91 per month, 12% agreed to pay ₹61–₹90, 8% agreed to pay ₹41–₹60, and 2% did not respond. The proposed water user charge of ₹75 is within the range that consumers are willing to pay since 90% of the respondents are willing to pay above the range of ₹61–₹90 per month.

Table 1: Water Charges, Usage, and Average Household Income

Item	Proposed (2021) ^a
Average household monthly consumption (kiloliter) ^b	9.6
Water supply rate (₹/kiloliter)	7.8
Water supply monthly bill (₹/household)	75.0
Average monthly household income: low-income group ^c (₹)	3,000
Water bill as a share of income: low-income group (%)	2.5
Average monthly household income: all categories ^c (₹)	5,000
Water bill as a share of income: all categories (%)	1.5

^a Operations in the three sample gram panchayats (governing bodies working at the village level) will start in 2021.

^b Average household consumption of 9.6 kiloliters = 4.6 persons per household x 70 liters per capita per day x 30 days/1,000.

^c Based on the findings of the affordability and willingness-to-pay survey conducted in July 2017 by Asian Development Bank project preparatory consultants.

Source: Asian Development Bank estimates.

C. Analysis of Operation and Maintenance Costs Recovery

8. The cash flows of the water supply systems in the sample *gram panchayats* are projected for 20 years of operations, considering the forecast water user charge revenue and O&M expenditure.⁶ The general assumptions followed to calculate the cash flow of the sample *gram panchayats* are as follows:

- (i) all costs are expressed in 2017 constant prices and converted at \$1 = ₹65;
- (ii) the projections were carried from July 2018 to June 2041, including 3 years of construction and 20 years of life span for assets established after construction;
- (iii) the 20 years of O&M consist of 3 years under design build operate packages of the project and 17 years of O&M by the *gram panchayats*;
- (iv) the O&M costs include personnel, maintenance, administrative, chemicals, and power, and they exclude depreciation expenditure, which is a noncash item;
- (v) monthly user charge is assumed to be ₹75 with an increase of 10% every 5 years; and
- (vi) a user charge collection efficiency of 95% was assumed.

9. The cash flow projection shows that water supply subprojects in the sample *gram panchayats* will recover full O&M costs from the operation start year of 2021. This underlines the sustainability of the water supply subprojects to be established under the project.

Table 2: Operation and Maintenance Recovery Analysis for Sample Gram Panchayats^a
(\$ million)

Item	Sonapukur Sankarpur			Kashbalanda			Chaltaberia		
	2022	2024	2026	2022	2024	2026	2022	2024	2026
Income from user charges	0.09	0.09	0.09	0.09	0.09	0.10	0.12	0.12	0.13
O&M expenses	0.09	0.08	0.08	0.09	0.09	0.09	0.12	0.11	0.12
Surplus	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.01	0.01
Operating ratio	1.00	0.92	0.92	1.00	1.00	0.92	1.00	0.92	0.92

O&M = operation and maintenance.

^a A *gram panchayat* is a governing body working at the village level.

Source: Asian Development Bank estimates.

III. FINANCIAL PERFORMANCE AND PROJECTION OF SAMPLE GRAM PANCHAYATS

A. Financial Performance of Sample Gram Panchayats

10. In case of delays in implementing the proposed water user charge structure, non-recovery, or lack of regular revisions, the *gram panchayats* will need to cover the O&M costs of the assets established under the project from their own revenue sources. The cash flow analysis of the sample *gram panchayats* was conducted by reviewing their historical financial performance and forecasting their financial strength to continue O&M of the assets established under the project.

⁶ While the government order (para. 3) requires the *gram panchayats* to adopt volumetric water user charges adequate to cover their full operational costs, assessments of and consultations with sample *gram panchayats* and government departments indicated that starting with a flat monthly water user charge during the early operational period, when systems are being set up and the workforce trained, would be more practical. The government order will be implemented gradually as systems and staff capacity strengthen. Based on the willingness to pay survey carried out in the sample *gram panchayats* and based on the costs to cover O&M, a flat monthly water user charge is expected to be a minimum ₹75.

11. A financial performance analysis of the sample *gram panchayats* for fiscal year (FY) 2013 (ended 31 March) to FY2015 is shown in Table 3. The analysis shows the following:

- (i) Grants constitute a significant portion of the sample *gram panchayats*' revenue.⁷ The proportion of grants to total income in the sample *gram panchayats* was recorded at 94%–99% during FY2013-2015;
- (ii) The revenue statements of the sample *gram panchayats* do not exhibit the exact breakdown of own-source revenue; however, the sample *gram panchayats* earn revenue from property taxes and the issue of trade licenses;⁸
- (iii) The proportion of own-source revenue of the sample *gram panchayats* to total revenue ranges from 0.9% to 5.6%;
- (iv) The efficiency of the collection of property taxes cannot be evaluated as accounting is purely cash based and there are no available tax demand records. Nevertheless, upon discussions with *gram panchayat* officials, it was understood that collection efficiency of taxes ranges from 25% to 50%; and
- (v) The operating ratio of the *gram panchayats* was below 1.0 in FY2015.

Table 3: Summarized Financial Performance of Sample *Gram Panchayats*^a
(\$ million)

Item	Sonapukur Sankarpur			Kashbalanda			Chaltaberia		
	FY2013	FY2014	FY2015	FY2013	FY2014	FY2015	FY2013	FY2014	FY2015
1. Revenue Income									
Tax revenue	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01
Untied funds	0.06	0.09	0.08	0.06	0.10	0.09	0.04	0.08	0.12
Other funds	0.20	0.13	0.07	0.31	0.15	0.18	0.16	0.10	0.45
Total	0.27	0.23	0.16	0.38	0.26	0.28	0.20	0.18	0.58
2. Expenditure									
Tax revenue	0.20	0.15	0.06	0.31	0.16	0.18	0.18	0.09	0.45
Untied funds	0.02	0.12	0.08	0.06	0.11	0.09	0.03	0.05	0.10
Other funds	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00
Total	0.23	0.28	0.15	0.38	0.28	0.28	0.21	0.14	0.55
3. Surplus or (Deficit)	0.04	(0.05)	0.01	0.00	(0.02)	0.01	(0.01)	0.05	0.02

() = negative, FY = fiscal year.

^a A *gram panchayat* is a governing body working at the village level.

Source: Audited financial statements of the three sample *gram panchayats* (governing bodies working at the village level) from FY2013 (ended 31 March) to FY2015.

B. Financial Projections of Sample *Gram Panchayats*: Sustainability Analysis

12. The following assumptions were made for the financial projections of the sample *gram panchayats* considering their usual operations:

- (i) All costs are expressed in 2017 constant prices and converted at \$1 = ₹65;
- (ii) Trend growth rates from FY2013 to FY2015 were used for income and expenditure during the projection period of FY2018 – FY2041. For negative growth rates, a minimum of 5% was considered;
- (iii) The analysis was conducted for FY2018 – FY2041, including a 6-year implementation period for the project; and
- (iv) Revenues from property and other taxes and all usual subsidies from the GOWB were considered for the revenue projections.

13. Financial projections show that the sample *gram panchayats* will require the GOWB's

⁷ Includes revenue grants from state and central finance commissions, and the GOWB's and Government of India's total transfers to the *gram panchayats* under different schemes, allocations, and funds.

⁸ Own sources of revenue for *gram panchayats* include revenue from property tax (land and building), trade license fees, rental income, and lease income from leasing out self-owned assets or assets owned by others.

continuous financial support to cover their expenditures (Table 4). This finding underlines the need for strengthening the revenue base of the *gram panchayats*, including the improvement of collection efficiency. The project, through the AMSDF and extensive capacity building, will help the project *gram panchayats* achieve financial sustainability.

Table 4: Financial Projections of Sample Gram Panchayats^a
(\$ '000)

Item	Sonapukur Sankarpur			Kashbalanda			Chaltaberia		
	FY2020	FY2025	FY2030	FY2020	FY2025	FY2030	FY2020	FY2025	FY2030
1. Revenue Income									
Tax revenue	7.7	9.9	12.6	18.7	23.9	30.5	6.7	8.5	10.9
Untied funds	133.3	214.7	345.7	143.4	230.9	371.9	189.4	305.1	491.4
Other funds	83.3	97.6	115.3	228.9	285.6	357.5	565.4	717.5	911.2
Total	224.3	322.2	473.6	391.0	540.4	759.9	761.5	1,031.1	1,413.5
2. Expenditure									
Out of own revenue	49.0	62.6	79.8	194.4	248.1	316.7	543.4	693.5	885.1
Untied funds	103.9	132.6	169.3	112.9	144.1	183.9	128.1	163.4	208.6
Other funds	26.8	28.4	30.1	40.3	44.3	48.7	28.6	31.6	34.9
Total	179.7	223.6	279.2	347.6	436.5	549.3	700.1	888.5	1,128.6
3. Surplus	44.6	98.6	194.4	43.4	103.9	210.6	61.4	142.6	284.9

FY = fiscal year. ^a A *gram panchayat* is a governing body working at the village level.

Source: Asian Development Bank estimates; and past audited statements of the sample *gram panchayats*.

C. Financial Capacity of the Government of West Bengal

14. The financial position of the GOWB was enhanced significantly in FY2015 (Table 5). The government's budget allocation to the PHED increased from \$73.9 million in FY2011 to \$289.1 million in FY2015. The increased budget allocation for water supply underlines the GOWB's commitment to the creation and operation of rural water supply projects, including the proposed project. In case of delays in implementing the proposed water user charge structure and regular revisions to recover O&M costs, the GOWB will continue to allocate sufficient funds for the necessary O&M of the assets established under the project. The amount of public debts, loans, and advances on a year-on-year basis declined during FY2014-2015, which shows that the GOWB's propensity to accept public debts is declining. Similarly, the year-on-year repayment of public debts, loans, and advances also showed a decline during FY2013-2015 which means the GOWB could reduce its repayment obligations. This underlines the GOWB's increasing revenue and decreasing dependency on borrowings.

Table 5: Financial Performance of the Government of West Bengal (\$ million)

Item	FY2011	FY2012	FY2013	FY2014	FY2015
1. Receipts					
Own revenue	9,039.2	10,507.0	11,212.6	13,309.9	16,881.9
Consolidated funds	15,999.0	16,931.3	18,663.6	21,321.6	24,195.1
Others	26,731.0	31,958.9	34,896.0	41,448.5	51,040.5
Total	51,769.2	59,397.2	64,772.2	76,080.0	92,117.5
2. Expenditures					
Out of own revenue	11,281.0	12,632.4	14,122.7	15,946.4	18,281.1
Consolidated funds	16,068.1	17,084.7	19,774.0	21,911.3	23,475.5
Others	24,568.0	29,496.0	30,941.4	38,269.1	50,279.0
Total	51,917.0	59,213.2	64,838.1	76,126.7	92,035.5
Surplus or (Deficit)	(147.8)	184.1	(65.9)	(46.7)	81.9
3. Capital Receipt and Repayment					
Receipt of public debts, loans	13,919.5	12,848.6	14,902.0	16,023.4	14,425.5
Repayment of public debts, loans	8,723.8	7,505.4	9,171.3	8,890.2	6,567.1

() = negative, FY = fiscal year.

Note: The fiscal year (FY) of the Government of West Bengal ends on 31 March. "FY" before a calendar year denotes the year in which the fiscal year ends, e.g., FY2016 ends on 31 March 2016.

Source: Annual financial statements of the Government of West Bengal.