



1. Project Data

Project ID P109961	Project Name NAT'L WATER SUPPLY & SAN II	
Country Azerbaijan	Practice Area(Lead) Water	
L/C/TF Number(s) IBRD-75180,IBRD-83810,IDA-43970	Closing Date (Original) 28-Feb-2013	Total Project Cost (USD) 407,841,459.96
Bank Approval Date 27-May-2008	Closing Date (Actual) 30-Jun-2019	
	IBRD/IDA (USD)	Grants (USD)
Original Commitment	260,000,000.00	0.00
Revised Commitment	410,000,000.00	0.00
Actual	407,841,459.96	0.00

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2. Project Objectives and Components

a. Objectives

According to the International Bank for Reconstruction and Development (IBRD) Loan Agreement (LA, p.6) and the International Development Association (IDA) Financing Agreement (FA, p.6), both of which were dated February 5, 2008, the original objective of the project was “to improve the availability, quality, reliability and sustainability of water supply and sanitation services of the Borrower/Recipient” where the “Borrower” and the “Recipient” were defined as the Republic of Azerbaijan in the LA and FA, respectively. There were some wording differences in the project objective defined in the Project Appraisal Document (PAD, p.4) without any material impact on the substance of the objective: “to improve the availability, quality, reliability and



sustainability of water supply and sanitation (WSS) services in selected regional (rayon) centers in Azerbaijan.”

At the second restructuring in January 2012, the project objective was revised: “to provide quality and reliable water supply and sanitation services in selected regional (rayon) centers in Azerbaijan” (Restructuring Paper, Report No: 59627-AZ, p.1)

When additional financing was approved in December 2014, the project objective was revised again to read as follows: “to improve the quality and reliability of water supply and expand water supply and sanitation services in selected regional (rayon) centers in Azerbaijan” (LA for Additional Financing, p.6).

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

18-Nov-2011

c. Will a split evaluation be undertaken?

Yes

d. Components

The project consisted of three components including investment activities, technical assistance support for institutional capacity building, and support for project management. AzerSu, the state water and sewerage utility, and the State Amelioration and Water Management Agency (SAWMA), the water and sewerage utility serving Nakhichevan—an autonomous republic in Azerbaijan—were the original project implementing agencies.

A. Rayon Investment. (*Appraisal cost: US\$392.0 million; cost estimated at Additional Financing: US\$612.1 million; actual cost: US\$534.8 million*)

This component consisted of investment activities for the rehabilitation and extension of water supply and sewerage systems, and the construction of facilities for water, wastewater and sludge treatment in 16 rayons in AzerSu’s service area and 5 rayons in SAWMA’s service area.

B. Institutional Modernization. (*Appraisal cost: US\$15.8 million; cost estimated at Additional Financing: US\$22.5 million actual cost: US\$20.6 million*)

The activities under this component would provide technical assistance support for capacity building and modernization of AzerSu and SAWMA through: (a) the provision of training for management, financial management, customer service, procurement, preventive maintenance and other subjects pertinent to effective and efficient management of the utilities; (b) development of performance monitoring, preventive maintenance and leak detection and repair; and (c) design and technical support for construction management, including procurement support and contract supervision for the investments.



C. Project Management. (*Appraisal cost: US\$1.6 million; cost estimated at Additional Financing: US\$8.4 million actual cost: US\$3.6 million*)

This component would support AzerSu and SAWMA in strengthening their management capacity to monitor and administer the implementation of the project, including an audit by AzerSu.

Revised Components

The project was restructured six times (see next section for details). At the first restructuring in October 2009, the project implementation responsibilities of AzerSu were transferred to Azerbaijan Amelioration and Water Management Open Joint Stock Company (AAWMC) of Azerbaijan. AzerSu had a US\$2.0 billion portfolio to implement in the following five years; therefore, it did not have the capacity to implement this project, too.

In the second restructuring in January 2012, SAWMA was removed as an implementing agency due to a misprocurement, and the project activities to be implemented in Nakhichevan by SAWMA were cancelled. Furthermore, the number of rayons under AAWMC's responsibility decreased from 16 to 8; detailed feasibility and safeguards studies showed that the financing requirement for the implementation of the activities in 16 rayons was much higher than the amount estimated at appraisal. Since the disbursement rate at the time of the restructuring was very low, rather than processing an additional financing, it was agreed to downsize the project scope from 21 rayons to 8 to match the original financing amount. However, an additional financing in the amount of US\$150 million was processed about three years later in December 2014, to finance additional works under existing civil work contracts, such as the connection of additional houses to the network, installation of additional metering, increasing water and wastewater treatment plant capacity due to design change, and implementation of additional institutional modernization activities.

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

Project Cost: The total project cost was originally estimated at US\$410.0 million including US\$0.6 million as front-end fee. At the time of the Additional Financing in December 2014, the estimated project cost was revised to US\$644.0 million including US\$1.0 million as front-end fee. The project team informed IEG that in June 2019, the project closed with a total cost of US\$641.0 million.

Financing: At appraisal, the IBRD loan and the IDA credit were estimated at US\$230.0 million and US\$30.0 million, respectively. A second IBRD loan of US\$150.0 million was processed in December 2014, increasing the total IBRD loan amount to US\$380.0 million. The project disbursed all IBRD loans and IDA credit short of US\$ 3 million due to the depreciation of the US dollar against the SDR, which was the currency used in the IDA credit agreement. At project closing, all project funds were accounted for.

Borrower contribution: At appraisal, the contribution of the Government of Azerbaijan (GoA) was estimated at US\$150.0 million. At Additional Financing in December 2014, the borrower committed an additional US\$84.0 million. At project closing, the GoA's actual contribution was US\$234.0 million equaling the total committed amount.

Restructurings: There were six project restructurings and one Additional Financing approval.

- **First Restructuring (October 16, 2009):** AzerSu was expected to implement both NWSSP and SNWSSP. This meant, the utility had a US\$2.0 billion portfolio to implement in the following five years and did not have the capacity to implement this project. Therefore, the Azerbaijan



Amelioration and Water Management Open Joint Stock Company (AAWMC) was designated as the project implementing agency instead of AzerSu. Two new indicators were introduced: (i) Number of new piped household water connections; and (ii) Number of rehabilitated piped household water connections.

- **Second Restructuring (January 27, 2012):** This was the first of the two major restructurings—the fourth restructuring was the other one. The project's scope decreased from 21 rayons to 8. The main reasons were (i) the underestimation of investment costs at appraisal due to limited records of market costs in the water sector and the absence of detailed feasibility and environmental studies; and (ii) the cancellation of activities in Nakhichevan because of a misprocurement—irregularities in the tendering process—by the project implementing agency, SAWMA, which also resulted in the removal of SAWMA as one of the two project implementing agencies. The indicators related to the cancelled activities under SAWMA were dropped. The project objective was revised at this restructuring (see section 2.a Objectives above). All the original indicators were deleted. Two new outcome indicators were introduced to the results framework: (i) People in the project area receiving improved water supply and sanitation services resulting from the project; and (ii) Pollution load measured in persons equivalent eliminated through adequate wastewater treatment. Five new intermediate outcome indicators were added: (i) Water network rehabilitated; (ii) Sewerage network rehabilitated; (iii) New reservoir capacity provided; (iv) Rayons with monitoring system in place; and (v) Rayons equipped and with trained personnel for operation and maintenance.
- **Third Restructuring (February 26, 2013):** The project closing date was extended by 22 months from February 28, 2013 to December 31, 2014 to enable the implementing agency to complete on-going investment activities. The two main reasons for project closing date extension were delayed project effectiveness and design changes: (i) Project effectiveness was delayed for more than one year after project approval because of the bidders' request for the extension of the proposal submission deadline for the selection of a Construction Management Firm, prolonged negotiations with the winning firm due to the complexity of the assignment, and delays in the approval of the Operations Manual, all of which were conditions for effectiveness; and (ii) The civil works were stopped because of changes in wastewater treatment plants' designs.
- **Fourth Restructuring and Additional Financing (December 22, 2014):** An additional financing of US\$150 million was processed to finance additional works under the existing civil work contracts. The project objective was revised for a second time (see section 2.a Objectives above). One original outcome indicator was re-instated, i.e., percentage of drinking water samples in the project area meeting Azeri water quality standards, and another one with revision, i.e., percentage of population in project areas that on average receive 24 hours of water supply. Two new intermediate outcome indicators were introduced to measure the new household connections to water supply and sewerage networks. The targets of the indicators introduced in the second restructuring were increased in accordance with the increased scope of work. Lastly, the project closing date was extended by three years from December 31, 2014 to December 31, 2017 to allow time for the completion of the on-going and additional activities.
- **Fifth Restructuring (June 9, 2017):** The closing date of the Additional Financing Loan Agreement, was extended by one year from December 31, 2017 to December 31, 2018 to finalize the contracts that were expected to be delayed beyond the then current project closing date due to insufficient allocation of counterpart funding in 2017 and technical delays in the construction of wastewater treatment plants in several rayons. The substantial reduction in the public investment program for 2017 was the main reason for insufficient counterpart funding. The closing date extension did not apply to the original IBRD loan and the IDA credit agreements, which were disbursed and closed on December 31, 2017.



- **Sixth Restructuring (November 27, 2018):** The project closing date was extended by six months from December 31, 2018 to June 30, 2019 to complete the construction of two wastewater treatment plants implemented under the Additional Financing and to ensure the compensation of remaining Project Affected People (three percent of the total) under the OP/BP 4.12 Involuntary Resettlement safeguard policy.

Dates: The project was approved on May 27, 2008 and became effective on July 13, 2009. The closing date of the original loan and the credit agreements was February 23, 2013, which was extended by a total of 46 months in the third and fourth restructurings; these two agreements closed on December 31, 2017. The closing date of the Additional Financing, which was approved on December 22, 2014, was also December 31, 2017, but it was extended by a total of 18 months in the fifth and sixth restructurings. The Additional Financing closed on June 30, 2019. Overall, the original project closing date of February 31, 2013 was extended by a total of 76 months (six years and four months) and the project closed on June 30, 2019. The total time from approval to closure was 11 years and one month. The reasons for closing date extensions have been outlined above under related project restructurings.

Disbursement Percentages: The following disbursement percentages will be used in deriving the weights to be applied to the assessment of original and revised objectives in Outcome rating. The disbursed amounts are taken from the “Restructuring and/or Additional Financing” table on page 3 of the ICR.

Table 1

Project Objective Period	Disbursed Amount	Disbursement Percentage
Original Period	US\$40.53 million	9.94 %
First Revision Period after January 2012	US\$171.36 million	42.02 %
Second Revision Period after June 2014	US\$195.95 million	48.04 %
Total	US\$407.84 million	100.00 %

3. Relevance of Objectives

Rationale

Azerbaijan inherited an extensive water supply system built during the Soviet era. However, the condition of the water system gradually deteriorated due to lack of investment and deferred maintenance, resulting in substantial decrease in the quality and reliability of the water supply service. Furthermore, as of early 2000s, only 55 percent of the population had access to an improved sewerage network, and the network needed rehabilitation and additional investments in wastewater treatment.

Since 2010, the Government of Azerbaijan (GoA) has improved water supply and sanitation services in the country by implementing projects in partnership with the World Bank, other multinational development banks and donors. According to the World Health Organization and United Nations Children’s Education Fund Joint Monitoring Program (2017), 91 percent of the population has access to an improved water source—98 percent in urban areas and 83 percent in rural area—and 95 percent of the population has access to an improved sanitation facility—100 percent urban households and 89 percent in rural households. However, only 72 percent of the population is considered to have met the Sustainable Development Goal (SDG) of having access to safe water that is defined as water accessible on premises, available when needed, and free from contamination. Similarly, 73 percent of the urban households are



considered to have met the SDG of having access to an improved sanitation facility that is not shared with another household and connected to proper waste treatment (data on sanitation in rural areas were not available). Therefore, the GoA continued investing in water supply and sanitation infrastructure to provide safe, reliable and quality services to the population under the State Programs on Socio-economic Development of Regions, the third of which was implemented between 2014 and 2018. The project supported the third State Program's objective to provide households in all rayons with reliable water and sanitation services to enhance the health and living conditions of the population. A new National Water Strategy is under preparation and it is expected to have the same objective to expand access to safe water supply and sanitation services to every household in Azerbaijan. Overall, the original project objectives were highly relevant to the country context and they were aligned with the country's development priorities, but the revised objectives were less ambitious due to the decreased scope of the project.

At project closing, the original project objectives were also highly aligned with the Bank strategy as defined in the Country Partnership Framework FY16-FY20 (CPF). Under the first focus area of "Public Sector Management and Service Delivery", Objective 1.3. is defined as "to contribute to improved access to water, sanitation and communal services." Having been built on the constraints and priorities identified in the Systematic Country Diagnostic submitted to the Bank's Board in 2015, the Bank strategy aims to support investments in "water and sanitation as part of the public health infrastructure as well as in connectivity as a way to influence people's demand for health and education services" (CPF, p.26). Since access to improved water and sanitation services directly impacts the welfare of women, the project objective was also aligned with gender, one of the crosscutting themes of the CPF. The other crosscutting theme of governance was supported by the technical assistance activities of the project in supporting the modernization of the water sector utilities.

The Bank had already become an important partner in the water supply sector in Azerbaijan before the approval of this project. However, the cooperation was limited to the Baku area because of the country's weak fiscal situation at the time and the limited amount of Bank resources it could access from IDA since the country had been classified as a blend borrower of IBRD and IDA since 1992 (PAD, p.3). Such limitations prevented the country from implementing more ambitious projects until the mid-2000s when Azerbaijan's fiscal situation started to improve with the increases in oil revenues; this provided the country with the opportunity to address long neglected infrastructure issues outside of the Baku area, including the water supply and sanitation infrastructure. Given the Bank's prior experience in Azerbaijan and the country's improved fiscal situation, the original project objective was adequately challenging. However, the project designs were over ambitious given the insufficient institutional and technical capacity of the project implementation entities of AzerSu and SAWMA, which resulted in several project restructurings. Furthermore, the project objectives were inconsistently re-stated, and there was confusion in the substance and timing of the revisions as they were being made.

Despite the revisions of the project objectives, this review assesses the project's performance based on the four objectives of availability, quality, reliability, and sustainability on the grounds that as a matter of principle, well-functioning water supply and sanitation service systems need to maintain those four development outcomes through to project closing and beyond. In other words, just because of the weaknesses in project development objective formulation, it would not be appropriate to artificially stop assessing sustainability at the end of the original objective period, and sanitation service quality and reliability at the end of the first revision period. Rather, this review's assessment will hold the project accountable and adhere to the higher bar of assessing the project's performance vis-à-vis these four development outcomes that should continue to be achieved beyond project closing.



Rating

Substantial

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

To improve the availability, quality, reliability and sustainability of water supply.

Rationale

Theory of Change

The original project objective included the four development outcomes of service availability, quality, reliability and sustainability, which should be maintained by any well-functioning water supply and sanitation service system through to project closing and beyond. However, the project design was ambitious in terms of geographical coverage; the project was to be implemented in 21 rayon centers and villages located in close proximity of the urban centers. The project inputs, i.e., the IBRD loan and IDA funds together with the Borrower's contribution, were high but not realistically determined to implement project activities in all original 21 rayons. Planned project outputs were water production, treatment, transmission and distribution infrastructure, as well as wastewater collection and treatment systems newly built or rehabilitated, and the expansion of sewerage network coverage, sewage and septic sludge treatment and disposal. These outputs would be expected to produce the following intermediate outcomes: (i) improved water resources and water network efficiency; (ii) fewer mechanical and electrical failures; (iii) expanded coverage; (iv) provision of appropriate tools for operation and maintenance (O&M); and (v) increased wastewater treatment. Eventually, these would lead to improvement in the availability, quality and reliability of water supply and sanitation services. The causal pathways from inputs to outcomes were credible and robust.

Additionally, the project was expected to improve the sustainability of the water supply and sanitation services through improved operational efficiency, which was to be achieved by capacity building and institutional development activities, such as training in management, financial management, customer service, procurement, and preventive maintenance, and provision of support in developing performance monitoring, and leak detection and repair. The increase in the number of metered customers was expected to improve the collection rate that would contribute to the financial viability of the utilities in the rayons. Coupled with the increased availability of O&M tools and equipment, the technical assistance support and improved collection rate would be expected to improve the sustainability of the water supply and sanitation services. However, the theory of change did not address the issue of private household connections to both water and sanitation networks. This was an important shortcoming: At project closing, 80 percent of the population was connected to piped supply, whereas the connection rate to wastewater collection was only 40 percent (ICR, p.20).

At the second restructuring in January 2012, the project objective was further revised, and the sustainability objective was dropped, while availability was included in the "provision" of quality and reliable services. These



changes did not have a material impact on the theory of change, while the decrease in the number of rayons from 21 to 8 resulted in a more realistic project scope matching the project inputs,

The project objective was revised again at the fourth restructuring in December 2014 and it was divided into two parts: (i) improvement of quality and reliability of water supply services; and (ii) the expansion of both water supply and sanitation services. However, this change did not have a material impact on the theory of change.

Overall, a broadly sound causal link could be established from project inputs and outputs to expected outcomes, and the achievement of project objectives could be attributed directly to the project's interventions, but the theory of change had a major shortcoming in failing to address the private household connections.

Outputs

Investments. The project originally targeted 21 rayons, but it was later dropped to eight to adjust the project scope to available project funds (see Revised Components in section 2d. above). In all eight rayons, water supply facilities were completed and transferred to AzerSu for operation. Project activities resulted in the following outputs:

- Water network rehabilitated: 1,224.2 kilometers (km) against the original target of 900 km set at the second restructuring and the revised target of 1,048 km at the Additional Financing.
- Reservoir capacity added: 35,100 cubic meters against the original target of 31,000 cubic meters set at the second restructuring and the revised target of 52,000 cubic meters at the Additional Financing.

Technical Assistance. Under the Institutional Modernization component, the project provided training on operation and maintenance to 140 personnel in eight rayons as planned at the Additional Financing. The ICR did not provide information about what other technical assistance activities were supported by the project, other than the establishment of Havsan Training and Innovation Center under AzerSu.

Outcomes

Availability. As a result of the project outputs, the number of new piped household water connections increased by 46,344 in eight rayons. This indicator was added as a core indicator in the first restructuring in October 2009 before the project started disbursing loans, and the target set for 21 rayons was 22,000 households. At the Additional Financing in December 2014, the target was increased to 41,577 but only in eight rayons. Furthermore, the project outputs resulted in an increase in the number of people receiving improved water supply by 324,292. This indicator was introduced in the second restructuring and the target was 212,000 people including access to sanitation services, which was later increased to 323,000 people at the time of Additional Financing only for water supply. The original outcome indicator for 21 rayons was "people in project area with access to improved water sources" and the target was 496,000 people. The project's achievement in increasing availability of water was much lower than the target set at appraisal.

The project was substantially successful in increasing the availability of water through new household connections to piped water, but its achievement was modest in increasing the number of people with access to improved water supply. Considering also that the project's impact was geographically on a smaller area



than planned at appraisal, the project's achievement of the development outcome of availability of water supply is rated **Modest**.

Quality. As a result of the project activities, water reservoir capacity increased and new water treatment facilities were built. These resulted in an increase in the water quality, which was regularly tested at the laboratories built under the project. The original outcome indicator was "percentage of drinking water samples in the project area meeting Azeri water quality standards" with a target of 100 percent starting from a baseline of zero percent. This indicator was deleted at the second restructuring but reintroduced again at the Additional Financing with a target of 98 percent. The measurements made at project closing showed that 98 percent of the samples met the Azeri water quality standards. Although the project was highly successful in achieving the target, due to the geographically limited impact of the project, i.e., eight rayons rather than 21, the achievement of the development outcome of quality of water supply is rated **Modest**.

Reliability. The rehabilitation of the water supply network and the capacity increase in water treatment resulted in a significant improvement in the reliability of water supply service. The original goal of the project was to increase the daily water supply service hours to 24, from a baseline of average three hours of service. This indicator was deleted at the second restructuring, but a better indicator was introduced at Additional Financing that read as "percentage of population in project areas that on average receives 24 hours of water supply" with a target of 98 percent. When project closed, 98 percent of the population in the project area had access to water 24 hours a day. However, since the project's impact was restricted to eight rayons rather than 21 rayons originally planned, the achievement of the development outcome of reliability of water supply is also rated **Modest**.

Sustainability. The project's intervention was expected to result in an increase in the collection rate from a baseline of 55 percent to 80 percent, hence, in a decrease in the average financial working ratio (cash operating expenditures divided by collected revenues) of the original 21 rayon water utilities from a baseline of 1.75 to 1.01. In the meantime, AzerSu's core operational deficit would be eliminated. The ICR (pp.17) states that the financial position of the project participating utilities and AzerSu improved after the approval of an increase in water and wastewater treatment tariffs by the Tariff Council of the Republic of Azerbaijan in 2016. Although this resulted in positive earnings before interest, tax, depreciation and amortization for the utilities, this achievement could not be attributed to the project's intervention since it was a result of a decision taken by the Tariff Council. There is no information in the ICR regarding the outputs of the project that were expected to increase the collection rate and the operation and maintenance capacity that would improve the technical and financial sustainability of the water supply. However, the ICR notes that the average working ratio in the eight rayons where the project was implemented after the second restructuring decreased to the target set appraisal, but half of the rayons maintained very high working ratios and in two of them the trend showed that the ratio might worsen in the future (ICR, p.18).

The achievement regarding sustainability of water supply is rated **Negligible** due to the following reasons: (i) lack of information on expected project outputs and outcomes leading to an improvement in sustainability; (ii) project implementation in a geographically smaller area; and (iii) attribution of the improvement in the utilities' financial position to the decision taken by the Tariff Council, not to the project's intervention.

Rating

Modest



OBJECTIVE 1 REVISION 1

Revised Objective

To provide quality and reliable water supply.

Revised Rationale

Outputs

Please see the outputs under Objective 1 above.

Outcomes

For the first revised objective regarding water supply the outcome indicators were as follows:

1. **Number of people in project areas receiving improved water supply.** The ICR (p.12) defined "improved water supply" as "24-hour continuous service that complies with quality standards". According to this definition, 324,292 people were receiving improved water supply at project closing. The target was 212,000 people, which was increased to 323,000 at the Additional Financing.
2. **Number of new piped household water connections.** As a result of the project activities, 46,344 households gained access to piped water in eight rayons. The target set at first restructuring was 22,000 households in 21 rayons. The target was increased to 41,566 households at Additional Financing to capture the achievement of the increased project scope.

Availability. The formulation of this development outcome was problematic. Although it was deleted in the second restructuring, availability was still indirectly a part of the project objective, because of the provision of water supply. The outcomes measured by the two outcome indicators show that the project was successful in increasing water supply availability during the first revision period. Therefore, achievement of the development outcome of availability is rated **High**.

Quality and Reliability. The first indicator above was introduced in this restructuring to capture these two development outcomes. The project was successful in providing 24-hour continuous water service that complies with quality standards to more than the targeted number of households. This achievement of these development outcomes is directly attributable to the project outputs and it is rated **High**.

Sustainability. Sustainability was deleted from the project development objective formulation and was not re-stated in the following restructurings. However, as explained in section 2.a Objectives, water supply should remain sustainable in its operational, financial, environmental and social aspects through to project closing and beyond. Therefore, its assessment cannot arbitrarily stop just because it was deleted from the project formulation. So, due to the reasons explained in the assessment of original Objective 1, the achievement of the development outcome of water supply sustainability is rated **Negligible**. In other words, there is no evidence to show that the outputs achieved by the implementation of project activities led to an improvement in the financial and technical aspects of the utility, so that water supply could be sustained at the same quality and in a reliable way beyond project closing.

The achievement of this objective is rated Substantial, but barely so, due to the negligible achievement in sustainability.



Revised Rating

Substantial

OBJECTIVE 1 REVISION 2

Revised Objective

to improve the quality and reliability of water supply and to expand water supply

Revised Rationale

Please see the assessment under Objective 1, Revision 1 above. The increase in the project scope due to Additional financing did not have any material impact in the assessment of the revised project objectives. Therefore, the overall achievement of the development outcomes in the second revision period is rated Substantial, but barely so.

Revised Rating

Substantial

OBJECTIVE 2

Objective

To improve the availability, quality, reliability and sustainability of sanitation services.

Rationale

Outputs

Investments: The project originally targeted 21 rayons, but it was later dropped to eight to adjust the project scope to available project funds (see Revised Components in section d. Components above). In all eight rayons, sanitation facilities were completed and transferred to AzerSu for operation. The project financed the construction of 983.7 km of sewerage network in eight rayons. There was no indicator defined to measure this output. In the second restructuring, the target was set at 750 km, and, at the time of the Additional Financing, it was increased to 923 km. Although this indicator is formulated as “sewerage network rehabilitated,” the project team stated that all the sewerage network built under the project was new. There was no indicator in the results framework related to the wastewater treatment facilities.

Technical Assistance: In addition to the outputs achieved through investment activities, the project financed training, under Institutional Modernization component, on operation and maintenance to 140 personnel in eight rayons as planned at the Additional Financing, including the operation of wastewater treatment plants. The ICR did not provide information about what other technical assistance activities were supported by the project, other than the establishment of Havsan Training and Innovation Center under AzerSu.

Outcomes

Availability. As appraised, the project was expected to increase the number of people connected to a functional network by 439,000 people in 21 rayons. The project outputs, including those financed by Additional Financing, achieved 43,386 new household connections (216,930 people assuming five people per



household) in eight rayons. The indicator added to the results framework at the second restructuring, i.e., people in project area receiving improved water supply and sanitation services resulting from the project, had a target of 212,000 people, but this indicator was revised at the Additional Financing and the target was set at 323,000 for only improved water supply. Therefore, this indicator did not measure the number of people receiving sanitation services. Due to low achievement, the achievement of the project outcome of availability of sanitation services is rated **Modest**.

Quality. The project as appraised did not provide a definition for “the quality of sanitation services”, nor did the results framework have any indicator or targets. At the second restructuring in January 2012, , a new indicator was added to the results framework: “pollution load measured in persons equivalent eliminated through adequate wastewater treatment,” where adequate treatment was defined as “conformity with the European Union Wastewater Treatment Directive for secondary treatment” (ICR, p.12). The target was set as 230,000 persons, which was raised to 285,000 at the time of Additional Financing; the achievement was 248,850 persons. This outcome would be achieved through the construction of wastewater treatment plants: increased wastewater treatment capacity would be expected to reduce the discharge of pollutants to the nature, resulting in an improvement in the quality of sanitation services.

On the other hand, the original project design had a target of 439,000 people connected to functional sewerage network. The project team stated that the sewerage networks constructed were all connected to a wastewater treatment plant in eight rayons. Therefore, the outcome of pollution treated at 248,850 persons equivalent, which was achieved by both original project funds and additional financing, is much lower than the impact the project would have had if it had been implemented in the original 21 rayons. Furthermore, when project closed, the percentage of the population connected to wastewater collection was only 40 percent—project’s theory of change did not address the issue of household connection to both water supply and sewage networks. Overall, the efficacy of the achievement of the original project objective to improve the quality of sanitation services is rated **Modest**.

Reliability. There was no indicator define at project appraisal measuring the reliability of sanitation services including both the sewerage network and wastewater treatment plants. This shortcoming in the results framework continued through to project closing. The length of the sewage network constructed, which is an output indicator, cannot be used as evidence for the reliability of sanitation services. Due to insufficient evidence, the achievement of this development outcome is rated **Negligible**.

Sustainability. Please refer to the discussion under original Objective 1 for a discussion of the financial sustainability of water and sanitation services. The technical sustainability of the sanitation services mostly depends on the reliable operation of the wastewater treatment plants. The ICR (p.30) notes that if continuous training programs are not implemented as staff rotates, limited institutional capacity may adversely affect the sustainable operation of wastewater treatment plants.

Overall, the achievement of the development outcome of sustainability of sanitation service is rated **Negligible** due to the following reasons: i) lack of information on expected project outputs and outcomes leading to an improvement in sustainability; (ii) project implementation in a geographically smaller area; and (iii) attribution of the improvement in the utilities’ financial position to the decision taken by the Tariff Council, not to the project’s intervention.

Rating



Modest

OBJECTIVE 2 REVISION 1

Revised Objective

To provide quality and reliable sanitation services.

Revised Rationale

Outputs

Please see the outputs under Objective 2 above.

Outcomes

For the first revised objective regarding sanitation services, there were two outcome indicators:

1. **Pollution load measured in persons equivalent eliminated through adequate wastewater treatment.** At project closing, the achievement was 248,850 persons equivalent. The target set at first revision was 230,000 persons equivalent and it was increased to 285,000 persons at Additional Financing. Since this was a result of the project activities financed by both the original funds and the Additional Financing, the achievement should be compared to the target set at the Additional Financing.
2. **New household sewer connections constructed under the project.** This indicator was added at the Additional Financing. The target was 42,795 connections. The achievement was 43,386.

Availability. As was the case in water supply, the formulation of this development outcome was problematic. Although it was deleted in the second restructuring, availability was still indirectly a part of the project objective, because of the provision of sanitation services. The outcomes measured by the two outcome indicators show that the project was substantially successful in increasing sanitation services availability during the first revision period. Therefore, achievement of the development outcome of availability is rated **Substantial**.

Quality. The first indicator above was introduced in this revision to capture the development outcome of quality of sanitation services. The target was increased at Additional Financing, and the achievement of this development outcome should be assessed according to the higher target, since it covers project activities financed under the original loan and Additional Financing. The project was successful in providing 24-hour continuous water service that complies with quality standards to more than the targeted number of households. Since the lower amount of wastewater was treated than the target, the achievement of this development outcome is rated **Substantial**.

Reliability. Due to insufficient evidence, the achievement of the development outcome of reliability of sanitation services is rated **Negligible**.

Sustainability. Sustainability was deleted from the project development objective formulation and was not re-stated in the following restructurings. However, as explained in section 2.a Objectives, and similar to water supply, sanitation services should remain sustainable in its operational, financial, environmental and social aspects through to project closing and beyond. Therefore, its assessment cannot be arbitrarily stopped just because it was deleted from the project formulation. So, due to the reasons explained in the assessment of



original Objective 2, the achievement of the development outcome of sustainability of sanitation services is rated **Negligible**. In other words, there is no evidence to show that the outputs achieved by the implementation of project activities led to an improvement in the financial and technical aspects of the utility, so that sanitation services could be sustained at the same quality and in a reliable way beyond project closing.

Revised Rating
 Modest

OBJECTIVE 2 REVISION 2

Revised Objective

To expand sanitation services.

Revised Rationale

Please see the assessment under Objective 2, Revision 1 above. The increase in the project scope due to Additional Financing did not have any material impact in the assessment of the revised project objectives. Therefore, the overall achievement of the development outcomes in the second revision period is rated Modest.

Revised Rating
 Modest

OVERALL EFFICACY

Rationale

Efficacy of the Achievement of the Original Objectives

The project achieved success in improving the three (out of four) development outcomes of availability, quality and reliability in water supply, and two (out of four) development outcomes of availability and quality in sanitation services had lower impact because of the decrease in the project area from 21 rayons to eight. Therefore, the achievement of these development outcomes is rated Modest. Due to lack evidence for the development outcome of reliability, and low achievement and absence of attribution for the development outcome of sustainability, their achievement is rated Negligible.

Overall, the efficacy of the achievement of the original project objective is rated Modest.

Overall Efficacy Rating
 Modest

Primary Reason
 Low achievement



OVERALL EFFICACY REVISION 1

Overall Efficacy Revision 1 Rationale

Efficacy of the Achievement of the First Revised Objectives

According to the targets set at the first revision of the project objective, the project was highly successful in providing quality and reliable water supply. The project was also highly successful in increasing availability of water supply. Therefore, the achievement of these three development outcomes is rated High. On the other hand, the project was substantial successful in the provision of quality sanitation services due to falling short of achieving the target set for number of people benefitting from these. According to the targets set at Additional Financing, the project was also substantially successful in increasing availability of sanitation services. As was the case in the assessment of the original Objective 1, due to lack evidence for the development outcome of reliability, and low achievement and absence of attribution for the development outcome of sustainability, their achievement is rated Negligible

Overall, the efficacy of the achievement of the first revised project objective is rated Substantial.

Overall Efficacy Revision 1 Rating

Substantial

OVERALL EFFICACY REVISION 2

Overall Efficacy Revision 2 Rationale

Efficacy of the Achievement of the Second Revised Objectives

Efficacy of the achievement of the second revised objectives follows the same argument under the first revised objectives. Therefore, overall efficacy rating is Substantial.

Overall Efficacy Revision 2 Rating

Substantial

5. Efficiency

Economic Analysis

At appraisal, a “with and without project” economic analysis was conducted for water supply investments in the original 21 rayons. Due to significant data accuracy and methodology issues, the economic benefits from improved sanitation services were not included in the economics analysis. The quantifiable benefits were identified as: (i) resource savings (e.g., energy and materials savings) from improved operational efficiency; (ii) increased water sales due to reduction of illegal consumption and leakages; and (iii) improved collections (PAD, p.54). Other economic benefits, such as benefits from improved health, quality of life and environment, were not included in the economic analysis since they could not be quantified due to lack of data. Therefore, the



methodology used at appraisal partially captured the economic benefits of the project's outcomes. Furthermore, as noted in the PAD (p.54), lack of accurate and reliable operational, technical and financial data used in the calculations made "the economic analysis speculative to some degree". With all these caveats, the analysis resulted in an Economic Internal Rate of Return (EIRR) of 13.0 percent and a Net Present Value of about US\$14.5 million at a discount rate of 10 percent for a 30-year period.

At the Additional Financing, an economic analysis was conducted for the costs and benefits associated with the investments financed under the Additional Financing (Project Paper, Report No: 86398-AZ, p.15). The quantifiable benefits were defined as follows: (i) improved energy efficiency; (ii) welfare gains at household level associated with reduced cost of service delivery (i.e. shift from tinkered water consumption to piped services); (iii) reduced coping cost due to better water quality and sufficient and reliable supply; and (iv) reduced discharge of pollutants due to increased wastewater treatment. Since the economic analysis included benefits stemming from sewage infrastructure investments, it was methodologically more comprehensive than the economic analysis at appraisal. The calculations for the Additional Financing resulted in an EIRR of 7 percent and an NPV of US\$22.4 million at a discount rate of 5.5 percent—the social discount rate defined by the European Union for Azerbaijan—for a 20-year period.

At project closing, a more comprehensive economic analysis was conducted covering eight rayons, where the project was implemented, based on the JASPERS Cost Benefit Analysis (CBA), 2008—an internationally recognized CBA methodology tailored to water and wastewater sector (ICR, p.52). The benefits used in the analysis were as follows: (i) health benefits due to the availability of tap water; (ii) environmental benefits due to prevention of the pollution of water bodies; (iii) cost savings for households due to access to piped water; and (iv) cost savings from sewerage disposal due to access to sewerage network with wastewater treatment. Since these benefits are quantified at the household level, connection rate stands out as an important factor in the analysis. Therefore, it was assumed that there would be a gradual increase in the number of households connected to the networks reaching 100 percent at the end of the 30-year analysis period. The calculations resulted in an EIRR of 10.04 percent and an NPV of about US\$4.0 million at a 10 percent discount rate

The fundamental differences in the assumptions used in the economic analyses at appraisal and project closing, and the decrease in the project area from 21 rayons to eight rayons make a comparison of the ex-ante and ex-post EIRR and NPV difficult. Yet, the reasons for the low ex-post EIRR rate, which shows that the project was barely viable despite a wider range of benefits included in the analysis, can be listed as (i) the increase in the project cost due to the design change required by the European Union standards; (ii) the decrease in the number of households affected by project outcomes; and (iii) low household connection rate, especially to the sewerage network.

Financial Analysis

A financial analysis of the project's impact on the financial situation of the AzerSu and the rayon utilities was conducted at appraisal, and it showed a strongly negative NPV in financial terms—the PAD did not report what the NPV was (PAD, p.11). This result was mostly because of the water usage and wastewater treatment tariffs set below the full cost recovery level. In Azerbaijan, the Tariff Council sets the tariffs. The other reason for a negative NPV was the low collection rate.

At appraisal in 2009, an average working ratio for all original 21 rayons was also estimated and it was expected that this baseline ratio would drop from 1.75 to 0.79 at project closing and 0.63 in 2039. At project closing, the financial situation of the utilities improved due to a tariff increase in 2016, and the ICR (p.58) reports that "the project working ratio in 2018 [was] already below 1.0", although the average of the working ratios of the eight



rayons given in Table 5.3 of the ICR (p.54) is 1.37. Furthermore, there were substantial differences in the working ratios of the rayons: in Jalilabad the working ratio was estimated at 2.78 whereas it was 0.49 in Ismaili.

Overall, it is not possible to evaluate the efficiency of the project based on the findings of the financial analysis since it heavily depends on tariffs set by the Tariff Council, which might not always prioritize the financial viability of the utilities, but the social benefits of the water and wastewater treatment services to the public; hence, the tariffs may be set to remain below the full cost recovery level.

Operational and Administrative Efficiency

At appraisal, feasibility studies were not completed. The completion of these studies, after project's approval, required several years delaying procurement. Furthermore, the feasibility studies showed that the project cost was significantly underestimated at appraisal, as a result of which the project area had to be decreased from 21 rayons to eight. Due to the shortage in counterpart funds, payments to contractors could not be processed on time starting from 2016; according to the provisions of the tax law, payments to contractors could not be processed before the payment of the value added tax, which was to be covered by the counterpart funds. The change of design standards for wastewater treatment plants resulted in a suspension of the construction works between 2011 and 2014, which necessitated project closing date extensions. These project design and implementation issues resulted in a reduction in project's efficiency.

Due to lower economic benefits, serious questions about sustainability and major issues in operational and administrative efficiency, the overall efficiency of the project is rated 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 (%)
Appraisal	✓	13.00	100.00 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	10.04	100.00 <input type="checkbox"/> Not Applicable

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

6. Outcome

The original project objectives were highly relevant to country context in Azerbaijan and highly aligned with the Bank's country strategy. Although the original objectives were adequate and challenging, the formulation of the revised objectives was confusing. Therefore, the relevance of objectives is rated Substantial. The project was



successful in increasing availability, quality and reliability of the water supply. It was also successful in increasing the access to the sewage network in areas where no sewage network existed before. The quality of the wastewater treatment was substantial. However, there was no evidence to assess the reliability of these sanitation services. The sustainability of water supply and sanitation services is rated Negligible due to low achievement. The efficacy of the achievement of the original objectives is rated Modest, whereas that of the first and second revised objectives is rated Substantial. The efficiency is rated Modest, due to lower benefits and significant shortcomings in operational and administrative efficiency. Since the project scope was changed, a split rating is applied (see Table 2 below). The overall outcome rating is Moderately Satisfactory with serious questions about the technical and financial sustainability of water supply and sanitation services.

Table 2

	Original objectives	First Revision	Second Revision
Relevance of Objectives	Substantial		
Efficacy	Modest	Substantial	Substantial
Efficiency	Modest		
Outcome Rating	Moderately Unsatisfactory	Moderately Satisfactory	Moderately Satisfactory
Outcome Rating Value (a)	3	4	4
Amount Disbursed (US\$ million)	40.53	171.36	195.95
Disbursement (%) (b)	9.94%	42.02%	48.04%
Weight Value (a)x(b)	0.2982	1.6808	1.9216
Total weights	3.9006 (rounds up to 4)		
Overall Outcome Rating	Moderately Satisfactory (4)		

- a. **Outcome Rating**
Moderately Satisfactory

7. Risk to Development Outcome

The weak financial situation of AzerSu and the rayon utilities stands out as a substantial risk to the sustainability of the development outcomes. Tariffs for water supply and wastewater services remain below the cost recovery level. Therefore, AzerSu and the rayon utilities remain heavily dependent on subsidies from the government. The government’s commitment to the subsidization program has so far supported AzerSu and rayon utilities in avoiding operating losses, negative cash flows from operations, and working capital deficit. Should there be a weakening in government’s commitment to the subsidization program and the tariffs remain below the cost recovery level, AzerSu and rayon utilities could not operate and maintain the new assets adequately.

Limited technical capacity of AzerSu staff to operate wastewater assets is another substantial risk. Under the technical assistance component, AzerSu staffs were trained in how to operate the wastewater treatment facilities and systems like supervisory control and data acquisition (SCADA). However, if continuous training programs are not implemented, the technical capacity could weaken as staff rotates. This could adversely impact the sustainability of the project development outcome in wastewater treatment.



Low rates of connection to sewage networks pose a moderate risk to the achievement of full benefits of project outcomes and to the technical sustainability of services. At project closing, the connection rate to sewage network was about 40 percent. If the connection rate remains low, the full impact of the project outcomes on public health and environment could not materialize. This would also threaten the technical sustainability of services due to an insufficient amount of wastewater to treat. In order to mitigate this risk, AzerSu has been conducting awareness campaigns to increase the connection rate. It is expected that in the medium-term, the connection rate to will reach 90 percent (ICR, p.20).

8. Assessment of Bank Performance

a. Quality-at-Entry

The project's strategic relevance was high, but the approach was inadequate. The project followed the first National Water Supply and Sanitation Project too quickly. This first project's coverage had to be reduced from 22 rayons to 4. It was a monolithic task to transform from a delivery system for water and sanitation conceived in the era of the Soviet Union, based on heavy subsidization, to a more self-reliant system. It was so complex that even effectiveness took 14 months from approval. There were no feasibility studies, the local master plans had not been reviewed and implications for the resettlement of affected people were unknown. Both the costs and the institutional implications were overwhelming for the relevant institutions' capabilities to implement. The project design benefited from the experience gained during the implementation of the Greater Baku Water Supply Project and several other water supply and sanitation projects in Europe and Central Asia, such as technical assistance alone would be insufficient to implement reforms unless there was strong political commitment and stakeholders commitment; and strong and consistent policy dialogue was necessary to increase the prospects of achieving development outcomes.

The economic analysis had shortcomings, but they were mostly because of the absence of reliable data. The risks were adequately identified, including the weak financial management capacity of AzerSu, but the mitigation measures were inadequate, which resulted in the replacement of AzerSu by AAWMC as the project implementation entity. The technical aspects of the project were not properly appraised. When feasibility studies were completed after project implementation started, it was found that the project funds could only support project activities in eight rayons, not in 21 as originally planned, due to underestimation of project cost at appraisal. The absence of feasibility studies during project preparation also led to inadequate appraisal of social impacts of the project, such as involuntary resettlement. This was identified as a risk, but the mitigation measures were insufficient. The decision to adopt the design-build contract basis delayed the Resettlement Action Plans, which had to be undertaken retroactively. Potential issues with the availability of counterpart funding were not adequately appraised. Lastly, the monitoring and evaluation arrangements (M&E) had shortcomings in capturing project outputs and some project outcomes making it somewhat difficult to assess the achievement of the stated objectives and test the links in the results chain.

The Bank performance in ensuring quality at entry is rated Moderately Unsatisfactory because there were significant shortcomings in identification, preparation and appraisal.



Quality-at-Entry Rating

Moderately Unsatisfactory

b. Quality of supervision

The project task team leaders were mostly based in Azerbaijan, and, according to the ICR (p.29), "This resulted in well-facilitated day-to-day client engagement, stronger field presence, and strengthened project supervision." This was evidenced in the project team's attention to the fiduciary aspects of the project; the misprocurement incident related to SAWMA was also managed properly. On the other hand, the project team should have been aware at an earlier stage in implementation of the strong potential for the project's non-compliance with the Involuntary Resettlement Policy and should have acted proactively to ensure compliance regardless of the type of contract. This caused a significant shortcoming in the supervision of safeguard aspects of the project, which could only be partially corrected in the remainder of project implementation. Finalizing RAPs had to be done retroactively and the project's non-compliant status with this safeguard policy continued through to project closure. Compensation to affected persons was consequently delayed.

The project development objectives were inconsistently re-stated during the various revisions. Deletion of the project objectives related to the sustainability of water supply and sanitation services and the improvement of the quality and reliability of the latter shows that the focus on development impact was weak. Well-functioning water supply and sanitation service systems need to maintain those development outcomes beyond project closing; efforts to achieve such important development outcomes cannot be stopped just because they are deleted from the formulation of the objectives. This manifested itself as challenges in the transition arrangements; after the preliminary operational handover of all assets in eight rayons to AzerSu, there were concerns about the sustainable operation of the wastewater treatment facilities and the SCADA systems (ICR, p.24). Low technical capacity of AzerSu staff to operate these assets still poses a substantial risk for the sustainability of development outcome (see section 7. Risk to Development Outcome above).

The quality of Bank's supervision is rated Moderately Unsatisfactory because there were significant shortcomings in the supervision of safeguard policies and in the focus on development impact.

Quality of Supervision Rating

Moderately Unsatisfactory

Overall Bank Performance Rating

Moderately Unsatisfactory

9. M&E Design, Implementation, & Utilization



a. M&E Design

The theory of change documenting how the key activities and outputs would lead to the outcomes was broadly sound, but partially reflected in the results framework. The objectives were adequately challenging for an investment project in water supply and sanitation services. The indicators adequately captured the achievement of the four development outcomes of availability, quality, reliability and sustainability for water supply, but only availability and sustainability of sanitation services. These outcome level indicators were sufficiently specific, measurable, relevant and time-bound. However, there was no indicator to assess the project's achievement in improving the quality or reliability of sanitation services. Furthermore, there was no intermediate indicator for technical assistance activities, and only one for the investment activities simply measuring the number of rayons where water supply and wastewater systems would be rehabilitated; this was not sufficient to capture the project's activities, including technical assistance support, and outputs toward achieving the development outcomes and to test the links in the results chain. Baseline data were estimated subject to revision according to the findings of the feasibility studies that would be prepared once project implementation started. AzerSu had the capacity to implement M&E, which was to be further supported by the project under the institutional modernization component.

b. M&E Implementation

Confusion in the substance and timing of the project objectives revisions as they were being made led to confusing changes in the M&E framework, too. Original outcome indicators were replaced by two new indicators at the second restructuring. Reason for this change was generic, lacking justification: "In addition, project indicators have been simplified and reduced in number to strengthen overall monitoring framework" (Restructuring Paper, Report No: 59627-AZ, p.2). However, some deleted indicators were re-instated in the subsequent project restructurings. The introduction of some core intermediate indicators, such as water network rehabilitated, sewerage network rehabilitated and new reservoir capacity, strengthened the M&E framework in measuring some of the intermediate outcomes and partially allowed to test the links in the results chain. The weakness in capturing the impact of the technical assistance support and the other investment outputs, such as wastewater treatment capacity, continued through to project closing. Starting from the second restructuring, AAWMC, as the new project implementation entity, was responsible from M&E implementation, and it was assessed to have sufficient M&E implementation capacity. According to the ICR (p.25), M&E data were systematically collected and reported. The water supply and sewerage network investments financed under the project are now digitized in the geographic information system, and the rayon utilities are equipped with supervisory control and data acquisition (SCADA) systems; therefore, the M&E functions are likely to be sustained after project closing but subject to continued training of utility staff on the operation of these systems (see sections 7.Risk to Development Outcome and 8.b Quality of Supervision).

c. M&E Utilization

Although the findings of the Mid-Term Review led to an additional financing to increase access to water supply and sanitation services, the M&E findings did not result in a correction in the project's strategic direction to achieve all four development objectives of availability, quality, reliability and sustainability; rather, they were used to formulate the objectives by deleting some of the development objectives that were deemed unachievable during project implementation or were not captured by the results framework, such as the deletion of sustainability in the second restructuring and the quality and reliability of sanitation services in the fourth restructuring. The M&E data did not provide evidence for the



achievement of all outcomes. There was insufficient data to confirm the project outputs, either. The M&E findings did not lead to a subsequent intervention and would not be expected to influence any in the near term.

Overall, there were significant shortcomings in the M&E system's design, implementation and utilization, which made it somewhat difficult to assess the achievement of the objectives and test the links in the results chain.

M&E Quality Rating

Modest

10. Other Issues

a. Safeguards

The project was classified as Category A under Environmental Assessment (OP/BP 4.01) and triggered Involuntary Resettlement (OP/BP 4.12), Safety of Dams (OP/BP 4.37), and International Waterways (OP/BP 7.50).

Environmental Assessment (OP/BP 4.01): Due to the planned rehabilitation and construction of sewerage and wastewater treatment facilities, the project was classified as Category A. Dust, noise, and damage to soil by excavation works were the expected short-term negative impacts of the project activities. An Environmental Impact Assessment Framework (EIAF) screening, due diligence, mitigation and monitoring was prepared and disclosed in the country in December 2007 and on the Bank's Infoshop in January 2008. Site-specific Environmental Impact Assessment (EIA) reports were prepared during project implementation and updated to accommodate the additional activities to be financed under Additional Financing. According to the ICR (p.25), the project team regularly supervised the implementation of the site-specific plans by the contractors, which was found to be in adherence to the EIAs. The Bank's environmental specialist was based in the country and this facilitated a close supervision of the environmental aspects of the project.

Involuntary Resettlement (OP/BP 4.12): At appraisal, it was expected that acquisition of unoccupied land might be needed because of the location of the wastewater treatment plants, which would be determined after public consultations. Project activities would not result in a resettlement of persons or demolition of commercial or private buildings. A Resettlement Policy Framework was prepared by the borrower. The project affected about 170 hectares of land, of which about 43 hectares were privately owned. Auxiliary structures of four buildings were affected by the project, and one additional structure had to be resettled. Fruit trees in the gardens of 246 households had to be cleared due to project activities. Since the involuntary resettlement impact of the project activities were identified only shortly before the start of civil works, the compensations to project-affected persons (PAPs) were not completed in advance. The project was not compliant with the Involuntary Resettlement policy, because the policy requires that the compensations to PAPs should be completed before the start of project works. Although eight Resettlement Action Plans (RAPs) were prepared between 2014 and 2017 and implemented retroactively, processing of compensations to PAPs were substantially delayed and payments were made between two and five years after the impact had occurred. The project remained in noncompliant until October 2019 when 99 percent of



the compensations were paid to the PAPs and the remaining funds were transferred to notary accounts. The project team became aware of project's noncompliance with this safeguard policy in 2016, which was a shortcoming in supervision. The grievance redress mechanism (GRM) was in place and implemented satisfactorily; however, as the project team reported, in one instance, GRM log-books were not available in some construction camps.

Safety of Dams (OP/BP 4.37): At appraisal, it was expected that in some rayons water might be supplied from existing dams to the water supply network. Therefore, this policy was triggered although the project would not finance the construction or rehabilitation of any dams. The detailed designs prepared during project implementation identified that the water networks in Jalilabad and Masalli rayons would be supplied with water from the existing Vilaschchay Water Reservoir. The safety of the reservoir was assessed in 2016 and a Dam Safety Assessment Report was prepared. As the project team confirmed, the project was in compliance with this safeguard policy.

International Waterways (OP/BP 7.50): This policy was triggered due to the impact of the project on Kura and Araks rivers, and the Caspian Sea, which are classified as international waterways, but the project was deemed to fall within the exception to the notification requirement under Paragraph (7a) of the policy. The project was not expected to have any adverse impact on the quality and quantity of water to the riparians, nor to be affected by the water use of other riparians. On the contrary, it was expected that the project would lead to a decrease in water intake from the rivers due to the reduction of leakages and improved demand management, and improve the two rivers and the Caspian Sea's water quality because of improvements in the quality of the wastewater discharged into these waterways. This exception was applied to the Additional Financing, too.

b. Fiduciary Compliance

Financial Management

The project implementing unit, i.e., the International Relations and Development Department (IRDD – former Corporate Development Department) of AzerSu, would be responsible for the financial management of the project, for which it was assessed to have the sufficient capacity. However, within less than a year after effectiveness, Azerbaijan Amelioration and Water Management Open Joint Stock Company (AAWMC), upon a request from the Government of Azerbaijan, replaced AzerSu as the project implementation agency, because AzerSu had already had a US\$2.0 billion project portfolio to implement in the following five years, and it did not have the capacity to manage this project. A new fiduciary assessment of the project implementation unit (PIU) at AAWMC was conducted and it was found to have had the financial management and procurement capacity satisfactory to the Bank.

During Bank supervision missions, the existence of sound internal control procedures was confirmed. Interim financial reports were mostly submitted on time; there were delays in the submission of these reports towards the end of project implementation. External audits of the project financials were carried out regularly. They were unqualified, but submission of two audits was delayed. There were shortcomings in counterpart funding which had adversely affected project implementation starting from 2016: Due to a tax law change, value added tax (VAT) had to be paid before any payment to contractors could be processed. Shortages in counterpart funding resulted in delays in VAT payments; consequently, payments to contractors were also delayed. There was also a misprocurement by SAWMA in the early stages of project



implementation (see next paragraph on Procurement). No misuse of funds was reported. At project closing, all project funds were accounted for.

Procurement

The procurement complied with the Bank guidelines except in one case: a misprocurement was declared because of irregularities in the tendering process managed by SAWMA in Nakhichevan. This resulted in the removal of SAWMA as one of the two project implementing agencies and the cancellation of project activities in Nakhichevan. The PIU at AAWMC, which replaced AzerSu in the first restructuring, was responsible for procurement and had a qualified and experienced procurement specialist. There was a several years delay in bringing the project to procurement level due to the preparation of feasibility studies after the start of project implementation. The procurement methods used were efficient to implement complex water and wastewater treatment contracts with frequent design changes.

c. Unintended impacts (Positive or Negative)

None.

d. Other

None.

11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Moderately Satisfactory	Moderately Satisfactory	
Bank Performance	Moderately Satisfactory	Moderately Unsatisfactory	There were significant shortcomings in appraising the project, such as the underestimation of project cost due to absence of feasibility studies that resulted in project scope shrinking from 21 rayons to eight. There were also shortcomings in Bank supervision, such as lack of awareness of irregularities in the implementation of safeguard policies and confusing and inconsistent revisions to project objectives and results



framework. Overall, Bank performance is rated Moderately Unsatisfactory.

Quality of M&E	Modest	Modest
Quality of ICR	---	Modest

12. Lessons

This review has drawn three lessons based on the ICR incorporating material on lessons listed on page 30 of the ICR.

Insufficient project preparation can critically affect project outcomes and implementation of safeguard policies. This is a rather generic lesson, but the experience from this project needs to be shared. The project budget was estimated without the completion of detailed feasibility studies, and the project area was determined as 21 rayons. When the feasibility studies were completed after project implementation started, it was found that the project cost was massively underestimated, and the project funds could only finance investments in eight rayons. This was a significant decrease in the geographic scope of the project limiting the impact of the intervention. Since detailed work plans were not prepared in advance either, it was not clear whether there would be any involuntary resettlement or not. It was also found only just before the start of construction works that some private lands would be affected by the project. Payments to persons affected by the project could not be processed before the start of the works. This resulted in delays of between 2 and 5 years. The project team became aware of this issue only in 2016. The project's non-compliant status with this safeguard policy continued through to project closing. Additionally, the project implementation capacity of AzerSu was also inadequately assessed during project preparation. Overwhelmed by a US\$2 billion project portfolio, AzerSu could not implement the project; hence, the project implementation entity had to be changed early in project implementation.

Weak institutional capacity and lack of performance control can critically affect the sustainable delivery of water supply and sanitation services. AzerSu predominantly focuses on expanding water supply and sewerage networks nationwide. There is no performance control mechanism set or benchmarks established for operational, technical and financial sustainability of the utility. The steady stream of cash from the central government thanks to high oil revenues has so far helped AzerSu avoid major financial constraints. The project originally aimed at phasing out government support to AzerSu through the strengthening of AzerSu's financial situation, but this could not be achieved. Currently, AzerSu and rayon utilities are in a financially precarious situation. This can adversely impact the availability, quality and reliability of these services should there be shortages in funds transferred from the central government budget. Additionally, AzerSu's weak institutional capacity is a concern for the technical sustainability of the wastewater treatment facilities.

Expanding sewerage network without adequately addressing the households' connection issue can hinder the achievement of full development impact while creating potential technical issues for the wastewater treatment facilities. The project activities did not include the construction of private connections to households, nor did the utility had any program to incentivize these connections. Therefore, the connection rate to sewerage network at project closing was at 40



percent. Households use septic tanks. These tanks drain wastewater to underground, and the remaining fecal sludge is removed once a year or less frequently. Therefore, the cost of maintaining septic tanks is very low, whereas laying pipes to connect to the sewerage network is costly for low-income households. However, septic tanks are harmful to environment and poses health risks, because the wastewater drained to underground mixes with underground water that is used for irrigation of lawns and vegetable gardens, and for watering orchards. Additionally, a lower connection rate to the sewerage network would result in a lower amount of effluent being treated at wastewater treatments plants, which might force the treatment plants to operate at a much lower capacity and cause technical inefficiencies.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR provided a good overview of the project. It explained a very complex project implementation with various restructurings. The narrative was candid, but it was mostly descriptive, rather than evaluative. The explanation of the results chain, i.e., how project inputs were used to achieve the planned outputs, and how those outputs led to the expected outcomes, was relatively weak.

The section on the quality of monitoring and evaluation could have benefited from a detailed discussion. There was not sufficient evidence to support the Bank Performance rating, and the discussion on the fiduciary aspects could have been strengthened. Excluding the discussion on Involuntary Resettlement safeguard policy, the discussion on other safeguard policies should have included a clear statement as to whether the project had complied with these policies or not. The Lessons and Recommendations were useful and based on evidence and analysis but were formulated like findings or suggestions and should have been stronger.

a. Quality of ICR Rating

Modest