



1. Project Data

Project ID P122826	Project Name ML-Urban Water Supply Project	
Country Mali	Practice Area(Lead) Water	
L/C/TF Number(s) IDA-53170,IDA-58800,IDA-D1270	Closing Date (Original) 31-Dec-2018	Total Project Cost (USD) 119,565,803.22
Bank Approval Date 21-Nov-2013	Closing Date (Actual) 31-Dec-2022	
	IBRD/IDA (USD)	Grants (USD)
Original Commitment	80,000,000.00	0.00
Revised Commitment	130,000,000.00	0.00
Actual	119,565,803.22	0.00

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2. Project Objectives and Components

a. Objectives

According to both the International Development Association (IDA) Financing Agreement (p.5) dated December 23, 2013, and the Project Appraisal Document (p.8) dated October 25, 2013, the project objective was “to increase access to sustainable water services in Bamako,” the capital of Mali.



In the IDA Additional Financing Agreement (p.5) dated September 15, 2016, the project objective was revised to read as follows: “To increase access to sustainable water services in selected urban areas within the Recipient’s territory,” where the Recipient is defined as the Republic of Mali.

The revision did not result in a material change in the project objective. The additional financing increased the geographical scope of the project with the addition of six other urban centers without altering the original scope of the project in Bamako. Therefore, this review will not undertake a split assessment of the project’s performance; it will be assessed based on the revised project objective and revised indicator targets.

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

28-Jun-2016

c. Will a split evaluation be undertaken?

No

d. Components

The project constituted a part of the larger Kabala Project—a multi-donor funded water project for Bamako—and originally consisted of three components as defined in the Financing Agreement (p.5) and the Project Appraisal Document (p.10). A fourth component was added at the time of additional financing.

A. Water Storage and Transmission. *(Appraisal cost: US\$48.68 million; actual cost: US\$ 41.86 million)*

This component was to finance the following activities to increase the availability of water and improve the quality of water services in the districts of Bamako on the right bank of the Niger River: (a) the installation of two groundwater storage tanks with a total storage capacity of 20,000 cubic meters in the Bacodjicoroni district; (b) the supply and installation of approximately 13 kilometers (km) of water transmission pipes to connect the storage tanks in the Bacodjicoroni district with the Badalabougou and Faladié districts; and (c) the provision of design and supervision services for the activities listed above.

B. Water Distribution. *(Appraisal cost: US\$28.07 million; actual cost: US\$50.13 million)*

This component was to finance the following investments to increase access to water services in Bamako’s districts on the right bank of the Niger River: (a) expansion of the water distribution networks by about 597 km; (b) installation of 30,000 social household connections; (c) construction of 300 standposts; and (d) the provision of design and supervision services for the activities listed above. The significant difference between the cost of this component estimated at appraisal and the actual cost is because of the favorable exchange rate fluctuations during project implementation and reallocation of credit savings from the first component and fourth component (added at the time of additional financing; see Revised Components below) to this component to extend the distribution networks.



C. Institutional Strengthening and Capacity Building. (*Appraisal cost: US\$3.25 million; actual cost: US\$4.14 million*)

This component consisted of three subcomponents:

C.1. Institutional support to the urban water sub-sector institutions: This subcomponent was to finance the following technical assistance activities: (a) assistance to the Malian Water Assets Holding Company (SOMAPEP - Société Malienne de Patrimoine de l'Eau Potable) and the Malian Water Operating Company (SOMAGEP - Société Malienne de Gestion de l'Eau Potable) in information technology, communication and workshops organization; (b) updates of business plans and financial forecasts; (c) financial audits, technical audits, and independent assessment of the reform; (d) customer satisfaction surveys; (e) relevant technical assistance and impact studies; and (f) institutional and technical studies.

C.2. Capacity building: This subcomponent was to finance trainings and technical assistance for capacity building and development of regulatory skills for SOMAPEP, SOMAGEP, the Electricity and Water Regulatory Commission (CREE - Commission de Régulation de l'Electricité et de l'Eau), and the staff of the Ministry of Energy and Water (MEW) involved in the water sector reform.

C.3. Safeguards implementation support: Under this subcomponent, the project was to support the project implementing entities in environmental and social management and provide capacity building for safeguards requirements.

Revised Components

At the additional financing in September 2016, the following component was added to the project to expand its geographical scope:

D. Water Supply in Secondary Centers. (*Appraisal cost: US\$50.0 million; actual cost: US\$43.38 million*)

The component had three subcomponents:

D.1. Rehabilitation and expansion of water production, storage, and transmission: To increase water availability and improve water quality in six urban centers (Kita, Bougouni, Sélingué, Nioro du Sahel, Markala, and Gao), the project was to finance the rehabilitation of the existing and construction of new raw water intakes, water treatment plants, boreholes, storage tanks (including elevated water storage tanks) and transmission pipes.

D.2. Increased access to safe water: This subcomponent was to finance the provision and installation of primary, secondary, and tertiary water distribution pipes and household water connections and standposts in the six urban centers.

D.3. Support in supervision and safeguards: The subcomponent was to provide technical assistance and good and services to the project implementation entities for the supervision of the above-listed works and the implementation of the safeguards policies.

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



Project Cost: The project cost was originally estimated at US\$80.0 million. At the time of additional financing, the estimated project cost was revised up to US\$130.0 million. The project closed on December 31, 2022, with an actual cost of US\$139.51 million. The actual cost was higher than the revised project cost because of the exchange rate fluctuations between the Special Drawing Rights (the currency used in the financing agreements) and the United States dollar.

Financing: At appraisal, the IDA credit amount was estimated at US\$80.0 million that was to fully finance the estimated project cost. An amount equal to US\$50.0 million was approved as additional financing. The project fully disbursed the total IDA credit.

Borrower's contribution: At appraisal, no borrower's contribution was estimated, and none materialized at project closing.

Additional Financing and Project Restructuring:

- **Additional Financing (June 28, 2016):** An additional financing of US\$50 million was approved to expand the geographical scope of the project to six other urban centers, and the name of the project was changed from "Bamako Water Supply Project" to "Mali: Urban Water Supply Project." The project objective was revised to read as "to increase sustainable access to water services in targeted urban areas in the Recipient's territory," and the targets of some indicators were revised up, and new indicators capturing the activities in these six urban centers were added to the results framework. Additionally, the project agreement was revised to allow procurement from United Nations agencies. The project closing date was extended by 36 months from December 31, 2018 to December 31, 2021 to allow time for the completion of the new activities added to the project scope. In addition to the three safeguards policies triggered at appraisal, the project triggered Physical Cultural Resources policy because of the possibility of chance finds during the excavations to lay new water transmission and distribution pipes in the six urban centers.
- **Project Restructuring (November 29, 2021):** The project was restructured to extend the project closing date by an additional 12 months from December 31, 2021 to December 31, 2022 to account for the project implementation delays because of the COVID-19 pandemic related restrictions and the sociopolitical unrest following the military coups of August 2020 and May 2021. Additionally, the legal covenant and the indicator related to the financial equilibrium of SOMAPEP were deleted because SOMAPEP had not satisfied the legal covenant by the project restructuring date. As the government was not expected to take a decision to adjust the tariffs in accordance with the commitments in the 2013 Sector Policy Letter, SOMAPEP was not expected to satisfy this legal covenant before the revised project closing date. Lastly, some targets of the indicators were revised up to reflect the impact of credit savings on investments.

Dates: The project was approved on November 21, 2013 and became effective on June 3, 2014. The Mid-Term Review was conducted in April 2018. The original project closing date was December 31, 2018, but it was extended by 48 months because of time required for the completion of the activities added to the project scope at the time of the additional financing and the delays caused by the onset COVID-19 pandemic and the military coups in 2020 and 2021. The project closed on December 31, 2022.

3. Relevance of Objectives



Rationale

The project objective was highly aligned with the World Bank’s latest strategy as defined in the Country Partnership Framework (CPF) for Mali, FY2016-2019 (at the time of this review, the World Bank was preparing a Country Engagement Note for Mali). The project initially sought to address the development problem of insufficient availability of water in the capital city of Bamako through the construction of water supply infrastructure; the project scope was later expanded to include six other urban centers at the time of additional financing. The expansion of water supply was to directly contribute to the inclusion of a larger portion of the population in the provision of basic infrastructure services. The Systematic Country Diagnosis of 2015 for Mali identifies the absence of connectivity to basic infrastructure services as one of the main drivers of poverty and conflict in the country. The project was to supply water to more than one million people in seven urban centers. The project objective directly corresponds to the Focus Area 2 of the CPF, i.e., “Create Economic Opportunities” and supports the achievement of Objective 2.3. Improve infrastructure and connectivity for all Malians. The CPF identifies the sustainable expansion of access to water supply in Bamako and other urban areas as one of the main interventions for the achievement of this objective.

The project objectives were highly relevant to the country context. Although the government capacity and fragility issues posed as high risks for the achievement of the project objective, the level at which the project objective was pitched was appropriate for the development status in the country. The focus of the project objective to the sustainability of water connections and water supply was sufficiently outcome-oriented in a fragility, conflict, and violence (FCV) context country. The project was to support capacity development and governance in the water sector through sector reform. The project objective was also aligned with the objectives of the Strategic Framework for Economic Recovery and Sustainable Development (2019-2023) of Mali to ensure universal access to drinking water (ICR, p.11).

The project objective was sufficiently challenging for a water access project in an FCV context. The project benefited from the experience gained from the implementation of similar World-Bank financed projects in West Africa and other FCV countries. The project constituted a part of the larger Kabala Project—a comprehensive investment program funded by multiple international donors to support the urban water sector reform—and the project objective was in alignment with the objectives of the sector reform.

Overall, the relevance of the project objective is rated High.

Rating

High

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

To increase access to sustainable water services in selected urban areas within the Recipient's territory.



Rationale

Theory of Change for Objective 1

The project inputs (IDA grant and technical assistance) were to be used to finance the construction of water reservoirs, installation of water transfer pipes, extension of water distribution network, household connections to water supply, construction of standpipes, development of information technologies (IT), a financial model, audits and surveys, and trainings in water supply services for the water utilities. These activities were to result in the following outputs: increased water storage capacity, water transfer and distribution networks built, people gained access to water through household connections and standpipes, and IT and financial model (including a tariff reform) developed for the water utilities in addition to the trainings delivered for capacity building. Because of increased operational capacity and financial viability of the water utilities, the sustained and enhanced access of people to water supply would have been expected to result in improved health, time saved because of the elimination of water fetching (directly affecting women and girls), increased schooling because of improved health and time saved (i.e., increased human capital), and increased economic activity. The theory of change of the project was typical for a water access project of this size. The causal links from project activities and outputs to expected outcomes were direct and valid, but the achievement of the project objectives could be partially attributed to the project's intervention because the availability of water supplied by the project-financed infrastructure was contingent on the expansion of water treatment plant and pumping station and the completion of a separate major transmission pipe financed by other donors under the larger Kabala Project. Additionally, the achievement of the sustainability of water supply services depended on the government's decision to reform the water tariffs, which would have been expected to improve the financial viability of the water utilities. The project was to support this through financial audits and the preparation of a financial model including a tariff study.

Outputs

- **Water production capacity installed under the project:** The project financed the construction of water production infrastructure to abstract water from the Niger River or through boreholes. As a result of these activities, the water production capacity increased by 13,335 cubic meters per day as targeted.
- **Water storage capacity constructed:** As a result of the construction of the water storage tanks, an additional 48,700 cubic meters of water storage capacity was created. The revised target was 48,000 cubic meters.
- **Transmission pipes constructed:** The project financed the construction of 20.4 km of transmission pipes. The revised target was 20 km.
- **Distribution pipes constructed:** The project financed the construction of 1,016 km of distribution pipes. The target was 1,000 km, but except Bamako, the project could not complete the construction of the distribution networks resulting in fewer people connecting to the water network than targeted in these cities (see the first outcome entry below).
- **Improved community water points constructed or rehabilitated under the project:** The project financed the construction or rehabilitation of a total of 710 community water points as targeted.
- **New piped household water connections that are resulting from the project intervention:** The project installed 59,000 household connections as targeted.
- **Completion of technical audits:** Technical audits of the water infrastructure built under the project were completed as planned.



- A tariff study was completed under the project which was not captured by results framework. The World Bank presented the tariff study to the government in September 2021, but it was not implemented.

Outcomes

- **Number of people in urban areas provided with access to Improved Water Sources under the project:** As a result of the project activities, a total of 803,000 people (578,400 people in Bamako, 45,000 in Kita, 25,000 in Niore du Sahel, 49,000 in Bougouni, 44,600 in Markala, 36,000 in Sélingué, and 25,000 in Gao) gained access to water through new household connections and standposts against the revised target of 819,200. This was calculated with the assumption of 10 people per household (59,000 households times 10 people equaling 590,000 people) and 300 people per standpost (hence 710 standposts times 300 people equaling 213,000 people). The original target set at appraisal was 390,000 people for Bamako only. The target was revised up to 710,000 at the time of the additional financing because of the geographical expansion of the project scope. The target was further increased to 800,000 at the project restructuring to reflect the impact of credit savings on investments. However, these revised targets were miscalculated. As the World Bank project team confirmed, it was assumed that there were 8 people per household rather than 10. So, the revised target at additional financing and the project restructuring should have been 819,000 people. Overall, the project was successful in increasing access to water in Bamako, but the achievements in other cities, except Gao, fell short of the targets set at the time of additional financing because of the uncompleted distribution network investments in these cities and lower demand for household connections (The targets for each city were as follows: 80,000 in Kita, 32,000 in Niore du Sahel, 64,000 in Bougouni, 168,000 in Markala, 64,000 in Sélingué, and 21,200 in Gao). The project team commented that the demand in the urban centers for household connections was lower than expected. The possible causes are given as the high cost of connection fees (although the project provided subsidies to lower this cost) and the preference of women to collect water from standposts, which also create opportunities for socialization. The demand for household connections in Bamako was high; therefore, the household connections were transferred from the urban centers to Bamako to meet the demand.
- **People with access to enhanced water supply services under the project:** This indicator measures the number of pre-project connections that no longer experience low water pressure (defined as less than 1.5 bar pressure). The number of people was calculated with the assumption that there were 10 people per connection. The ICR reports that 491,310 people (hence 49,131 household connections) no longer experience low water pressure. The original target set at appraisal was 220,000 people, which was revised up to 256,000 people at the time of the additional financing. The target was not revised at the project restructuring. The operation of the first phase of the Kabala water treatment plant in Bamako since June 2019 (financed by the French Development Agency, the European Union, and the European Investment Bank) contributed to the significant increase in the achievement of this indicator.
- **Compliance with the financial equilibrium of the urban water supply sub-sector:** This indicator was defined as “net cash balance (previous year plus net cash flow from operations minus debt service and variation of working capital requirements) positive or equal to zero”. Because the government did not implement the tariff reform, the water sector institutions could not achieve financial equilibrium through to the project restructuring in November 2021 when this indicator was deleted.



The project was successful in completing the water supply infrastructure. This resulted in increased availability of water and a significantly high number of people connecting to the water supply network mostly in Bamako and Gao. The project supported the reform of the water sector through the installation of IT and preparation of studies including the tariff study. According to the survey conducted in 2022, the water users were satisfied with the quality and reliability of water supply. However, the project fell short of ensuring the sustainability of water supply services, which depended on the improved financial viability of the water sector public entities, i.e., SOMAPEP and SOMAGEP. Because of the tariff freeze and rapidly increasing service area of the water utility, the average water selling price had always been lower than the average water production cost from 2015 onwards (ICR, p.13). The share of non-revenue water in water supply started to gradually increase from around 25 percent between 2015 and 2018 to 35 percent in 2021. This is attributed to poor collection rates and increased leaks in old transmission pipes following the increase in water pressure in the system because of the new water treatment plant and transmission line investments. Overall, the risk to the sustainability of the water supply service is high because of the poor financial viability of the water sector public entities, which could adversely affect the operation and maintenance of the water supply network. The follow-on World Bank-financed water supply projects in Mali are expected to address these shortcomings in the sustainability of water supply services.

Overall, the project's efficacy in achieving the project to objective to increase access to electricity in the urban centers of Mali is rated substantial but with significant shortcomings in the sustainability of water supply services.

Rating
Substantial

OVERALL EFFICACY

Rationale

The project was successful in increasing overall access to water in urban centers of Mali especially in Bamako and Gao. The project had lower achievements in connecting households to water in other five urban centers because of lower demand for connections than the estimations. According to the consumer survey results, project improved the quality of water supply through the additional of new reservoirs and new transmission and distribution pipes. However, the project fell short of improving the financial viability of the water sector public entities because of the tariff freeze and rapidly increasing service area of the water utility; this poses as a significant risk to the sustainability of water supply services. Overall, the project's efficacy in achieving the project objective to increase access to water in urban centers in an FCV context is rated substantial but with significant shortcomings in the sustainability of water supply services.

Overall Efficacy Rating

Substantial



5. Efficiency

Economic Analysis

A cost-benefit analysis was conducted at appraisal to assess the economic viability of the project's intervention in increasing access to water in Bamako under the Kabala Project. The total US\$199.0 million estimated cost of the Kabala Project (consisting of water storage, transmission, and distribution investments) was included in the analysis because the achievement of the project objectives was contingent upon the other critical water infrastructure investments financed by other donors. The incremental operating costs and renewal costs were also added to the analysis. The analysis period was 40 years, and 2013 prices were used excluding taxes and financing costs. The quantifiable economic benefits of the project were identified as incremental revenues generated by the water consumption of new water users and the existing customers because of fewer water supply outages, and the consumer surplus stemming from the increased water consumption and lower water prices shifting from vendors to standposts or household connections. The analysis did not include economic benefits from time saved because of the elimination of water fetching, improved health, increased schooling (because of improved health and time saved) and increased economic activity. Therefore, the analysis was designed on conservative but realistic assumptions (see PAD pp.48-49). The calculations resulted in an economic internal rate of return (EIRR) of 10.5 percent and a net present value (NPV) of US\$8.0 million at a discount rate of 10 percent.

At the time of additional financing in June 2016, the cost-benefit analysis was updated by including the actual implementation of the original project to that date and the expected impact of the activities proposed under the additional financing. The same methodology at appraisal was used to undertake the cost-benefit analysis at additional financing. The cost of the water infrastructure investments in the six urban centers added to the project scope was included in the analysis along with the related quantifiable economic benefits listed in the previous paragraph. The update of the cost-benefit analysis resulted in an EIRR of 11.4 and an NPV of US\$22.9 million at a discount rate of 10 percent. The results are higher than those calculated at appraisal because of the actual high outcomes of the implementation of the original project in Bamako although the estimated results in the other urban centers were lower (Project Paper on a Proposed Additional Credit dated June7, 2016, p.36).

At project closing, same methodology was used to conduct a cost-benefit analysis with an expanded scope. In addition to the quantifiable economic benefits used in the analyses at appraisal and additional financing, "the ex post assessment used data from the satisfaction survey and other sources to factor in the alleviation of the time burden associated with water fetching for women and girls" (ICR, p.37). The costs were taken as the actual costs of the different subprojects under the Kabala Project and operation and maintenance costs. The ex-post calculations resulted in an EIRR of 14.43 percent and an NPV of US\$59.2 million at a discount rate of 10 percent. The ex-post results are slightly above the appraisal and additional financing calculations because of lower project costs and increased economic benefits because of connecting more people to water and inclusion of the additional economic benefit from the elimination of time for fetching water.

Financial Analysis

A "with project" and "without project" financial analysis was conducted at appraisal to assess the financial impact of the project on SOMAPEP and SOMAGEP. The revenues the utilities were to generate from the incremental increase in water sales because of the project and related costs were taken into consideration in the financial analysis. The calculations included taxes but excluded non-cash generating benefits (i.e., the consumer surplus), and resulted in a financial internal rate of return (FIRR) of 7.4 percent, which was higher than the weighted average cost of capital of the water sector. The financial analysis was repeated at the time of the



additional financing using the same methodology at appraisal and resulted in an FIRR of 8.1 per cent. Lastly, the financial analysis conducted at project closing using the same methodology yielded an FIRR of 9.79 percent.

Operational and Administrative Efficiency

Because of the FCV context in Mali, the project was faced with some operational and administrative inefficiencies caused by the factors outside the control of the project implementation unit and the World Bank project team such as the two military coups in August 2020 and May 2021, the increased armed conflict in the northern parts of the country expanding into the central areas, and ECOWAS' economic embargo for six months following the military coups. These resulted in the suspension of disbursements slowing down project implementation. Despite these obstacles, the project implementation unit established within SOMAPEP implemented the project activities with continuous capacity building support from the project (hiring of consultants in financial management, procurement, and safeguards) and the World Bank project team. The commitment of the related ministries to the project was in general adequate, but the frequent changes of the SOMAPEP managing director (because of the government changes—four in total in a nine-year project implementation period) adversely affected decision-making and ensuring coordination in the implementation of project activities. The presence of the two World Bank task team leaders (out of three) in Mali was critical in maintaining a regular dialogue and engagement with the authorities, which contributed to efficient implementation of the project by addressing the obstacles without significant delays. Occasional issues in the implementation of safeguard policies affected the administrative and operational efficiency of the project such as the long time needed to prepare the safeguard documents that delayed the implementation of the distribution network works in the urban centers added to the project scope at the time of additional financing. The insufficient procurement capacity of the project implementation unit resulted in a long procurement process, but with the intervention of the senior management of the Ministry of Water and the SOMAPEP, procurement performance of the project improved following the mid-term review of the project in 2018. The coordination issues within the project implementation unit weakened the efficient implementation of the project (ISR No: 12, p.3). Coordination within the project implementation unit improved following the reorganization of the SOMAPEP and the project implementation unit (such as the reduction of the number of directorates from six to four and the project implementation unit being embedded under the Directorate of Project implementation covering Bamako and other urban centers for all externally financed projects), appointment of two coordinators each in charge of a pool of donor-financed projects, and the hiring of more dedicated staff such as three engineers for contract management and monitoring. The project also financed the training of the project implementation unit staff in project management and monitoring and evaluation, which strengthened implementation capacity.

While there were some moderate shortcomings in the administrative and operational efficiency of the project, which were mostly addressed during project implementation, the economic and financial analyses showed that the project was economically viable; therefore, the project's overall efficiency in achieving the project objective to increase access to sustainable water services in selected urban areas in Mali is rated Substantial.

Efficiency Rating

Substantial

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



	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal	✓	10.50	100.00 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	14.43	100.00 <input type="checkbox"/> Not Applicable

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

6. Outcome

The project objectives were highly aligned with the latest World Bank strategy for Mali and relevant to the FCV context of the country because the project was designed to improve and increase the people’s access to piped water increasing inclusion, especially so, after the expansion of the project scope to six urban centers. The project was also successful in connecting a high number of households to the water supply network, but the achievement of targets was considerably high in Bamako and Gao, but low in other five urban centers. The project also fell short of ensuring the financial viability of the water sector public entities, which poses a high risk to the sustainability of the water supply services. Overall, the project’s efficacy in achieving the project objective in an FCV context is rated substantial but with significant shortcoming in the sustainability of the water supply services. The economic analyses conducted at appraisal, additional financing, and project closing confirm the economic viability of the project with some moderate shortcomings in the operational and administrative efficiency of the project that were mostly addressed during project implementation. Overall, the outcome of the project is rated Moderately Satisfactory because of the underachievement in ensuring the sustainability of the water supply services.

a. Outcome Rating

Moderately Satisfactory

7. Risk to Development Outcome

Political and Governance: The FCV context in Mali poses a major risk to the sustainability of the project outcomes. The country has been facing political instability and governance issues for more than a decade because of ongoing armed conflict in the northern parts of the country and frequent military interventions. These could lead to insufficient government commitment to continue with the reform in the water sector and adversely affect the operation of the water sector related government institutions resulting in poor operation and maintenance of the water supply infrastructure constructed under this project and the larger Kabala Project.

Financial viability of SOMAGEP: The water utility, SOMAGEP, is responsible for the operation and maintenance of the water supply infrastructure developed under the project. However, SOMAGEP’s financial viability is highly weak. The utility cannot cover the cost of water production with water sales. This poses a high risk to the sustainability of the project outcomes because SOMAGEP has insufficient funds to maintain the water infrastructure and implement necessary repairs and rehabilitation. The implementation of the tariff reform would contribute to the improvement of the SOMAGEP’s financial viability along with additional



technical measures to reduce the amount of non-revenue water through the implementation of an efficient water leak management system.

Technical: The commissioning of a new water treatment plant under the Kabala Project in 2018, resulted in higher number of water leaks in older segments of the water network in Bamako because of increased water pressure. The network efficiency dropped by six percent in the following year and continued to deteriorate until project closing. This is reflected in the increased amount of the share of non-revenue water in water supply increasing from 25 percent in 2017 to 35 percent in 2022. Unless a leak management system put in place and implemented, the network efficiency could continue to deteriorate and adversely affect the sustainability of water supply services.

8. Assessment of Bank Performance

a. Quality-at-Entry

The improvement and sustainability of water supply services in Bamako was of high strategic importance for the Government of Mali to improve the living conditions in the capital and address one of the main drivers of poverty and fragility in the country. The project constituted an integral part of the Kabala Project financed by multiple donors and were in line with the priorities of the government. The technical aspects of the project were sound; the water sector standards were to be used in the development of the water infrastructure. The economic and financial aspects of the project were adequately assessed showing the economic viability of the project with rather conservative assumptions. The project triggered the safeguards policies relevant to such water projects, but it triggered the Physical Cultural Resources policy with delay at the time of additional financing. The fiduciary aspects of the project were sufficient; most of the payments were to be made directly to the contractors. The project adequately assessed the risks to project implementation and the achievement of project objectives, and the mitigation measures were identified to the extent possible in the FCV context of Mali. The project implementation entities lacked sufficient capacity to implement the project in accordance with the World Bank policies and guidelines; therefore, the project was designed to strengthen the project implementation capacity of these entities. The M&E arrangements were sufficient to measure and assess the project's results, but the Results Framework lacked indicators to better capture the sustainability of water supply services and the availability and quality of water. The project activities as defined in the project components were appropriate to achieve an increase in the number of people connected to the water network within the Kabala Project, but the sustainability of the water supply services was linked only to the financial equilibrium of the water sector to be achieved through a tariff reform. Although this was a necessary step towards sustainability of water services, other aspects of sustainability were not included in the project such as reduction in non-revenue water and implementation of an efficient water leak management. These are expected to be addressed in the follow-on water project.

Overall, the quality at entry is rated satisfactory.

Quality-at-Entry Rating
Satisfactory



b. Quality of supervision

The project team held regular in-person supervision missions twice a year until the onset of COVID-19 pandemic, after which the supervision missions were held virtually. The presence of two Task Team Leaders in Mali (out of a total of three Task Team Leaders during the project implementation period) facilitated regular dialogue and engagement with the authorities. The project team's close supervision and monitoring of the project implementation are adequately reflected in the ISRs and Aide Memoirs (AMs). These reports are highly detailed and provide a candid assessment of the project's performance. The focus on the development impact of the project was high; the project team took various actions proactively to achieve the water sector reform. These actions included continuous dialogue with the authorities despite frequent changes in the government because of military coups, convening other donors (i.e., the African Development Bank, the French Development Agency, the European Investment Bank, and the European Union) to the meetings with the authorities, and consideration of including the implementation of the tariff reform as a prior action in a development policy operation. Faced with various obstacles in a high FCV context, the project team adequately supported the project implementation entities in financial management, procurement, safeguards implementation, and M&E (see sections 9 and 10 below). The project team also acted proactively to increase the development impact of the project by expanding its scope to six more urban centers under an additional financing and restructured the project to extend its closing date by one year to allow time for the completion of the project activities adversely affected by the onset of COVID-19, political instability in the country, and the ECOWAS embargo.

Overall, the quality of supervision is rated substantial.

Quality of Supervision Rating

Satisfactory

Overall Bank Performance Rating

Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

The causal chains from key activities and outputs to the outcomes expected from the project's intervention were direct and valid, and this was adequately reflected in the results framework. The project objective was clearly specified and sufficiently outcome-oriented in an FCV context by focusing on the sustainability aspect of the water supply services. The project objective level indicators captured all immediate outcomes expected from the project's interventions, but the sustainability of the water supply services was only monitored through the improvement in the financial viability of the water utility that relied on the implementation of a tariff reform developed under the project. The results framework did not include any indicator measuring the improvement in water supply services such as availability of water supply service (such as number and duration of outages) and the quality of water. The intermediate outcome indicators were adequate to capture the project's outputs toward achieving the outcomes. All indicators were specific, measurable, achievable, relevant, and time-bound; baselines, targets, sources and data collection



methodology were identified at appraisal. SOMAGEP and SOMAPEP were to collect and report the M&E data, and their capacities were assessed to be sufficient to implement M&E. The quality of the M&E data was to be reviewed and validated by a technical auditor and the Electricity and Water Regulatory Commission.

b. M&E Implementation

As reported in the Implementation Status and Results Reports (ISRs), the project implementation unit, SOMAPEP, and SOMAGEP regularly collected data to measure and report the indicators included in the Results Framework. The project provided sufficient support to increase the M&E capacity of these entities through hiring of consultants. An independent technical auditor reviewed the operational performance of the urban water sector to assess the sustainability of water supply services. The project utilized the Geo-Enabling Initiative for Monitoring and Supervision tool for remote monitoring and geolocating the achievement of project outputs. The Results Framework did not require any revision to improve the quality of the M&E system because the indicators were sufficient to capture the immediate outcomes expected from the project. However, as noted in the M&E Design section above, the inclusion of indicators measuring the availability and quality of water would have been useful to monitor the improvements in the water supply services. Furthermore, the deletion of the indicator related to the financial equilibrium of the water sector just one year before project closing was unnecessary because regardless of the inclusion of such an indicator in the Results Framework, the assessment of water access projects should take the sustainability aspect of water supply services (including the financial viability of the water utility) into consideration when the project performance is assessed. Unless affected by a worsening of the political situation and governance in the country, the SOMAPEP and SOMAGEP are likely to maintain the M&E functions and processes developed under the project and use them in the successive World Bank or other donor-financed water sector projects.

c. M&E Utilization

The findings were effectively communicated to the project stakeholders at the government level, World Bank and other donors financing the Kabala Project. The M&E findings resulted in the processing of an additional financing to expand the project scope to include six urban centers in addition to the capital, Bamako. The project team appropriately used the M&E data to assess the development impact of the project; these are reflected in the ISRs in detail. The M&E findings were critical in informing the subsequent World Bank-financed Bamako Urban Resilience Project and a second water project that is at the concept stage.

While the M&E design could have included additional indicators to better capture the sustainability of water supply services, and the availability and quality of water, the M&E system as designed, implemented, and utilized was sufficient to assess the achievement of the objectives and test the links in the results chain. Overall, the M&E quality is rated substantial.



M&E Quality Rating

Substantial

10. Other Issues

a. Safeguards

At appraisal, the project was classified as Category B under Environmental Assessment (OP/BP 4.01) and triggered the Involuntary Resettlement (4.12) and Projects on International Waterways (OP/BP 7.50) safeguard policies. At the additional financing, the environmental category did not change, but the project additionally triggered the Physical Cultural Resources (OP/BP 4.11).

Environmental Assessment (OP/BP 4.01): At appraisal, the project was classified as Category B because of site-specific, temporary, and reversible environmental impacts of the project activities of water infrastructure construction. AS the project constituted a part of the larger Kabala Project, a comprehensive Environmental and Social Impact Assessment (ESIA) had already been carried out for each investment identified at appraisal and at the time of additional financing. The ESIA was disclosed in-country and at the World Bank's InfoShop on March 6 and February 13, 2013, respectively. The project provided training to the SOMAPEP staff on safeguards implementation in accordance with the World Bank requirements. SOMAPEP established a special environment department and appointed a focal point for safeguards implementation. The 129 grievances received during project implementation were resolved before project closing. However, two accidents with fatalities occurred. In the first accident, two workers died because of suffocation while inspecting a newly built manhole. It is reported that the workers did not adhere to the prerequisites for such an inspection (ICR, p.22). In the second accident, a driver died when his truck overturned. After each accident, the project followed the World Bank Environmental and Social Incident Tool Kit's requirements to strengthen the implementation of the safeguard policy and compensate the relatives of the three deceased workers according to an action plan prepared.

Physical Cultural Resources (OP/BP 4.11): At the additional financing, the project triggered this safeguard policy because of possible discoveries of physical cultural resources during the new excavations to lay water transmission and distribution pipes. Chance find procedures and clauses were inserted in each civil work contract in accordance with the requirements of this safeguard policy. No physical cultural resource was found during the construction of the water infrastructures.

Involuntary Resettlement (OP/BP 4.12): Although the project activities were not expected to result in any involuntary displacement of people or acquisition of land, the project triggered this safeguard policy because of the potential impact of the project activities in terms of income loss of the project-affected people, such as the permanent or temporary displacement of street retailers or occupants. A Resettlement Policy Framework (RPF) was prepared in accordance with the requirements of this safeguard policy and disclosed in-country and at the World Bank's InfoShop on March 6, and June 12, 2013, respectively. For each subproject, a Resettlement Action Plan (RAP) approved by the World Bank was prepared. The RAPs were implemented prior to the start of the related civil works but with some difficulties and delays; for example, the distribution network construction works in the urban centers added to the project scope could not start because of the delay in the finalization of the safeguard documents (ISR No:9, p.18), and the contractors in Bamako could not be compensated for the cost of mobilization in certain project areas where activities were suspended because of the difficulties to implement the RAPS. Despite these challenges, all



project-affected people had been compensated for their temporary loss of income because of the project activities by project closing.

Projects on International Waterways (OP/BP 7.50). The project triggered this safeguard policy because it was to result in additional water abstracted from the Niger River, which is an international waterway. The authorities informed the Niger Basin Authority about the impact of the project on the Niger River. On behalf of the riparian countries, the Niger Basin Authority gave a no-objection on November 1, 2011 to the abstraction of water from the Niger River.

b. Fiduciary Compliance

Financial Management

At appraisal, the SOMAPEP and SOMAGEP were assessed to have insufficient financial management capacity to implement a World Bank-financed project. The project and the World Bank project team provided technical assistance to these institutions and the project implementation unit established under SOMAGEP to increase their financial management capacity. Despite these efforts, the project implementation unit was slow in implementing the steps in an action plan prepared during the mid-term review such as the update of the project implementation manual and the strengthening of the internal audit function (ISR No:11, p.3). Financial management of the project improved following the hiring of an assistant accountant. According to the ISRs, the unaudited interim financial reports were submitted according to the schedule and acceptable to the World Bank; the opinions of the external auditor in the financial audit reports were unqualified (ISR No: 13, p.16). The majority of the payments to contractors were processed directly; there were no known issues of corruption or misuse of funds associated with the project. The project team confirmed that all project funds were accounted for at project closing.

Procurement

Procurement was implemented in accordance with the World Bank's procurement policies and procedures but was slow because of the delays in the preparation of the subproject specific safeguard policies. As of December 2020, all contracts were procured despite the delays caused by the slow approval process of the national procurement agency. The project implementation unit initially lacked sufficient procurement capacity, but trainings and support of the consultants hired under the project were critical in building the procurement capacity and successful procurement of the contracts. The project implementation unit staff gradually developed sufficient expertise in using the STEP platform with the support of the World Bank project team, which improved project implementation.

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	Satisfactory	Satisfactory	
Quality of M&E	Substantial	Substantial	
Quality of ICR	---	Substantial	

12. Lessons

This review has drawn three lessons based on the information in the ICR.

The FCV context in a project country can be a major barrier to basic infrastructure sector reforms necessary for the sustainability of basic public services. The sustainability of the water supply services developed under the project and the larger Kabala Project depended on the water sector reform in Mali, which would have improved the financial equilibrium of the water sector. This was to be achieved through a tariff reform under the project, but such a reform did not materialize despite the significant efforts of the World Bank project team and the other donors. The main reason was the frequent changes in the government because of the military coups and political instability in the country. Therefore, conditioning the sustainability of project outcomes on sector reforms might not be a feasible approach in FCV context countries.

The addition of secondary urban centers in the scope of water projects can increase the development impact and increase inclusion in an FCV context country that would help address one of the main drivers of poverty and fragility. The project was originally designed to improve water supply services and increase access to water in Bamako, the capital of Mali. Following the successful implementation of the original project and some credit savings, it was decided to expand the project scope, under an additional financing, by adding six urban centers to reduce the country's regional disparities in access to water services that were exacerbated by the FCV situation in the country (Project Paper on a Proposed Additional Credit, Report No: PAD1792, p.4). While the demand for household connections in these urban centers materialized lower than the level estimated at the time of additional financing, the project, nevertheless, achieved to connect an estimated 224,600 people to piped water who would otherwise remain without access to water. The consumer surveys conducted at project closing showed that people connected to water under the project were satisfied with the reliability and quality of the water supply service.

The absence of a leak management system in a water infrastructure project connecting new infrastructure with older segments of the existing network can adversely affect the availability of water for the consumers and weaken the financial viability of the water utility. After the commissioning of a new water treatment plant under the Kabala Project in 2018, the



network efficiency in the water supply network in Bamako dropped by six percent because of the increased number of leaks in the older segments of the network caused by increased water pressure. The deterioration in the network efficiency continued through to project closing resulting in a 35 percent of non-revenue water. Same adverse results were witnessed in similar projects implemented in West Africa (ICR, p.26). The poor connection of the new infrastructure built under the project to the existing network contribute to higher number of leaks. Such leaks result in lower availability of water for the existing customers and prevents the connection of new customers to the network, while causing a significant financial loss to the water utility because of high amount of non-revenue water. Therefore, the implementation of a leak management system under such water projects could significantly contribute to the achievement and sustainability of the project outcomes.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR is candid and provides a detailed overview of the project. The narrative is evaluative and focuses on what occurred as a consequence of the project's intervention. The report together with its annexes provides an adequate evidence base to support the achievement of the project's results and makes a sufficient attempt to triangulate data to reach conclusions such as the financial viability assessment of the water sector based on the Utility of the Future framework developed by the World Bank. In this regard, the ICR provides a detailed explanation on why the water sector financial equilibrium could not be achieved and assesses the financial viability of the utility based on other criteria. However, this underachievement is not sufficiently highlighted as the reason for an overall outcome rating of moderately satisfactory although the ICR rates the project's efficacy and efficiency as substantial and the relevance of objectives as high (which would result in a satisfactory rating for outcome). There is a logical linking and integration of the various parts of the report. The report mostly follows and adequately responds to the Bank guidance and its Appendix L, Preparation of ICR in FCV Setting for IPF Operations, but some sections could have included additional information reported in the ISRs such as the sections on financial management, procurement, and safeguards. The entries in the "Lessons and Recommendations" are based on the specific experiences of the project and linked to the ICR's narrative.

Overall, the quality of the ICR is rated substantial.

a. Quality of ICR Rating

Substantial

