



1. Project Data

Project ID P120211	Project Name Norte Grande Water Infrastructure	
Country Argentina	Practice Area(Lead) Water	
L/C/TF Number(s) IBRD-79920	Closing Date (Original) 30-Apr-2017	Total Project Cost (USD) 195,141,764.59
Bank Approval Date 20-Dec-2010	Closing Date (Actual) 26-Apr-2019	
	IBRD/IDA (USD)	Grants (USD)
Original Commitment	200,000,000.00	0.00
Revised Commitment	195,141,764.59	0.00
Actual	195,141,764.59	0.00

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2. Project Objectives and Components

a. Objectives

The project development objective (PDO) was "to increase sustainable access to water supply and urban drainage services in the Borrower's Norte Grande region, by providing investments in infrastructure and supporting institutional development." (Financing Agreement, Schedule 1, page 5)

For the purposes of the Efficacy section of this ICR Review, the PDO above will be assessed in terms of four distinct objectives:



Objective 1: To increase access to water supply in the Norte Grande Region of Argentina

Objective 2: To increase access to urban drainage services in the Norte Grande Region of Argentina

Objective 3: To increase the sustainability of water supply in the Norte Grande Region of Argentina

Objective 4: To increase the sustainability of urban drainage services in the Norte Grande Region of Argentina

There was no change in the PDO during the entire project period. There were changes in the outcome indicators and targets as the specific infrastructure needs and investments were identified during project implementation. The changes did not lower the project's ambition, as discussed below and as verified with the Bank project team. Hence, a split rating will not be carried out for this ICR Review.

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

Yes

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

No

c. Will a split evaluation be undertaken?

No

d. Components

The project was designed as a "framework project", which the ICR (page 12) defines as follows: "Framework Project" refers to a project where all activities or subprojects have not been firmly identified at appraisal, though the objectives and types of activities are clearly outlined in the PAD, often because additional information garnered through implementation will influence the identification or definition of these activities.

According to the Project Appraisal Document (PAD), the project components included the following (original cost estimates and actual costs are indicated; modifications to the components during restructurings are also briefly delineated):

Component 1: Water Supply and Urban Drainage Infrastructure (Appraisal cost estimate, US\$165 million; actual cost, US\$132.4 million)

This component was intended to finance the rehabilitation, upgrading and reconstruction of water supply and urban drainage systems that are declared eligible during implementation.

Component 2: Institutional Development and Technical Assistance (Appraisal cost estimate, US\$26 million; actual cost, US\$0.67 million)

This component was intended finance: (i) institutional and/or operational strengthening programs for participating water and sanitation service providers; (ii) technical assistance to service providers and regional entities with responsibilities to provide water and sanitation and urban drainage services and



carry out studies; (iii) institutional strengthening activities aimed at promoting water supply and sanitation (WSS) sector knowledge and capacity building within relevant sector institutions; and (iv) strengthening of the operational, social, environmental, fiduciary and supervision management capacity of the Executing Unit within the Coordinating Unit for Programs and Projects with External Financing (UCPyPFE) and Participating Provinces.

During the the December 10, 2015 restructuring, the institutional strengthening component became better defined. Since other information systems already existed in the region or were supported by other donors, the 2015 restructuring shifted the project's focus away from the development of a Regional Water Supply and Sanitation (WSS) Information system toward the development of dashboards of key indicators for water supply utilities to use as a decision-making tool. During the June 27, 2018 restructuring, resources were reallocated between expenditure categories (US\$26 million from “Category 2 – Assets, consulting services, non-consulting services, training and operating costs” to “Category 1 – Works under Sub-Projects”) due to the savings generated under the institutional component in the 2015 restructuring. (ICR, paragraphs 15 and 56).

Component 3: Project Management and Supervision (Appraisal cost estimate, US\$15 million; actual cost, US\$14 million)

This component was to finance project management and supervision activities, including specialized independent technical supervision and Project audits.

The project implemented four main investments: two in the water sector in the Chaco Province and two in the drainage sector in the Tucuman Province.

In Chaco, the interventions included:

- (a) water supply system for Pampa del Indio, Presidente Roca and five other towns; and
- (b) water supply system for Wichi, El Sauzal, Fuerte Esperanza, and Nueva Pompeya communities.

In Tucuman, the interventions included:

- (a) a drainage channel in Boulevard 9 de Julio in Yerbabuena; and
- (b) a drainage channel in San Luis in Yerbabuena.

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

Project Cost. The total project cost estimated at appraisal was US\$ 240 million, including the front end fee (US\$0.5 million), as well as the physical and price contingencies (US\$25 million and US\$8 million, respectively). The actual project cost at closing was US\$235.7 million, or 98 percent of the appraisal estimate.



Financing. The World Bank provided a loan of US\$200 million for the project, of which US\$195.1 million or 98 percent was actually disbursed by project closing. There were no other cofinanciers.

Borrower Contribution. Of the US\$240 million total project cost, the Borrower committed to financing US\$40 million, but actually disbursed US\$40.6 million by project closing, or 102 percent of the original commitment.

Dates. The project was approved on December 20, 2010. It became effective almost 6 months later on July 4, 2011. A mid-term review was conducted about 4 years later on May 29, 2015. The original closing date was April 30, 2017. With 3 closing date extensions granted during project restructurings, the project finally closed on April 26, 2019 with a total project implementation period of 8.5 years.

The project was restructured at level two four times, as follows:

December 18, 2015 - to modify the Results Framework, given the shift from institutional strengthening and the preparation of a regional WSS information system toward the establishment of utility-level dashboards of key indicators to support management and decision-making.

April 20, 2017 - to extend the closing date

June 12, 2018 - to extend the closing date and reallocate among disbursement categories, given the 2015 shift in the institutional strengthening activities and the savings made, which were reallocated to works under the sub-projects.

February 28, 2019 - to extend the loan closing date by a few months to its final closure on April 26, 2019

3. Relevance of Objectives

Rationale

Country Context. The appraisal of the project was conducted in the aftermath of the global financial crisis of 2008 and the economic slowdown that it caused, from which Argentina had just been recovering. As part of this recovery, the Government of Argentina (GoA) adopted a countercyclical stimulus package, wherein infrastructure investments were prioritized as a major component. GoA formalized these priorities in its Strategic Plan for Territorial Development 2010 – 2016 and aimed to: (i) consolidate the market forces that would enhance Argentina's inclusion in the global economy; and (ii) mitigate the isolation and lack of development of disadvantaged regions and communities, particularly by filling infrastructure deficits in poorer provinces, in order to achieve a more equitable and sustainable growth. In this regard, despite economic recovery in many areas of Argentina, the Norte Grande Region (NGR) remained the most marginalized and underdeveloped region. The NGR, which covered one-third of the country's territory, had a population of 7.5 million people, or 21 percent of the total population. However, the NGR produced only 10 percent of GDP and 8 percent of exports. The poverty level at 48 percent was high (the national average was 23 percent) and extreme poverty was 24.6 percent.



Sector Context. The water and sanitation sector (WSS) was a key challenge for Argentina at the time of project appraisal, particularly in the areas of universal coverage and improved service quality. The NGR suffered the most acute gaps in terms of access and quality of service. The two decades prior to appraisal showed frequent and drastic changes in sector policies: many private concessions were renegotiated or terminated, and the freezing of water tariffs damaged the capacity of utilities to self-finance, thus leading to sizeable public funding of service providers. These factors led to financial and operational difficulties for many utilities and the weakening of sector institutions. The NGR, in particular, had low coverage rates, poor service levels, water contamination of water sources, limited water availability, and institutional and governance challenges. Investment needs were high but funding was limited.

Thus, the PDO directly sought to assist the NGR as Argentina's second most-deprived region (after the Buenos Aires Metropolitan Region), with almost 15 percent of the population lacking piped water supply and 61 percent of the population lacking piped sewerage services. Cities in the NGR's urban areas were also particularly susceptible to frequent flooding given their location in flat lowland areas. Investments in urban drainage infrastructure were also needed to reduce vulnerability to floods, which posed a major development challenge and affected the poor disproportionately.

Alignment with Government and Bank Strategies. The PDO is aligned with the FY19-FY22 Country Partnership Framework (CPF) in two specific focus areas: (i) Focus Area Two: Addressing key institutional constraints for better service delivery through Objective 5: Improving service delivery through enhanced inter-jurisdictional coordination, and (ii) Focus Area Three: Supporting Argentina Implement its Climate Related Nationally Determined Contributions through Objective 10: Building Resilient and Low-Carbon Cities. The PDO also responds to the 2018 Argentina Systematic Country Diagnostic (SCD), which identifies indigenous populations as particularly vulnerable to lower access to basic services. The PDO is also fully aligned with the Government's 2017 National Water and Sanitation Plan (NWSP), which sets ambitious targets for providing sustainable universal access to water by focusing on improving both the coverage and the quality of WSS services as well as the performance of services providers.

According to the ICR (page 13), indigenous populations are ten percentage points more likely to have at least one unmet basic need compared to the non-indigenous population (at 23 percent vis-à-vis 13 percent, respectively). In the cities, on average 79 percent of indigenous populations have access to water and 47 percent to sewerage, compared to 84 percent and 53 percent, respectively, of non-indigenous people. The poor in NGR provinces are particularly vulnerable. Children under five in the poorest provinces in the north, such as Formosa, are almost twice as likely to die, and maternal mortality rates in La Rioja and Formosa are six to seven times higher than in the City of Buenos Aires.

The SCD indicates that water utility accountability needs to be strengthened in order to use public funds more efficiently and deliver better services. A more comprehensive and strategic planning approach—one that covers both expansion plans, as well as maintenance and improvement of existing infrastructure—is required. Finally, both the SCD and CPF cite climate change as a growing challenge to cities, particularly in terms of urban flooding and its disruption of transportation systems, as well as its negative impacts on productivity and business profitability.

Rating

High



4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

To increase access to water supply in the Norte Grande Region of Argentina

Rationale

Theory of Change. The over-arching, long-term development outcome that the project sought to support was to alleviate the dire baseline conditions in the NGR that existed prior to the project's implementation. Lack of access to piped household connections has compelled the affected population to rely on rainwater collection, public standpoints, wells (which entailed important health risks given the arsenic contained naturally in the area's groundwater), or costly water trucks or pumps. Dispersed areas were dependent on dams, windmills and rainwater. The burden of collecting water almost 7 hours a day fell on women and children who had to carry water of dubious quality in buckets or drums weighing 44 to 66 pounds (about 20 to 30 liters). The small capacity of water supply systems resulted in intermittent services even for households with water connections. Water quality was poor given the limited water availability from small reservoirs and aquifers and rivers with high turbidity. Droughts that occurred about half of the year worsened these conditions by making water collection more difficult and worsening the already severely restricted water supplies.

The causal chain underlying the project's theory of change is well articulated and valid. Moreover, the expected results can be directly attributed to the project's investments and institutional capacity-building activities. The causal chain starts with input activities consisting of the construction of water treatment plants, main distribution lines, and secondary networks, which are expected to directly deliver piped, safe and reliable water (treated to comply with regulatory standards) to households. In addition, a second set of input activities include the construction of public water tanks, standpoints, and rainwater harvesting systems intended to increase access of indigenous and dispersed populations to safer water sources. Taken together, these input activities and intermediate outcomes are expected to achieve the objective of improving access to water supplies.

Indicators. The PAD established the following indicators for measuring improvements in water supply access in the NGR: (i) number of people in urban areas provided with access to improved water sources under the project; (ii) at least 30 percent are poor out of the total additional beneficiaries of the new water supply infrastructure built under the project; (iii) number of piped households that receive safe water treated according to regulatory standards; and (iv) number of disperse indigenous population with improved access to water from the works built under the Project.

Results. The project's principal achievements comprise the following outcomes, according to the ICR (pages 15-16). At Presidencia Roca-Pampa del Indio and five other localities, the investments benefitted 34,000 people with access to improved water sources of better reliability and quality. In February 2019, a visit by the *Servicio de Agua y Mantenimiento Empresa del Estado Provincial (SAMEEP)* found that the treatment plant and its Bermejo River water intake point were functioning as expected and the intended beneficiaries were uninterrupted water supply. The ICR mission also confirmed that: (i) the plant is equipped with appropriate staff and is being operated properly; (ii) the plant's laboratory specialist is monitoring water quality regularly; and (iii) logs for residual chlorine are within the safe parameters established by regulatory standards.



Moreover, the implementation of the Indigenous Peoples' Plan (IPP) included the construction of public standposts, which are benefitting 2,700 indigenous people, for whom water collection times have been reduced to 20-30 minutes from more than an hour daily. Reduced cases of diarrheal diseases have been reported, compared to other neighboring communities. It is expected that these services would make an important contribution to controlling the spread of COVID-19 in the area.

For the Wichi water supply subproject, the physical progress of works was at 96 percent by June 2020, according to the ICR (pages 15-16). Most of the elements of the water treatment plants, as well as the primary and secondary distribution networks, had been finalized. The delays between September 2019 to May 2020 -- which were due to complex procurement processes that required revisions to a contract amendment, a government transition at the end of 2019, unfavorable climatic conditions, and the impacts of the COVID-19 pandemic -- had been resolved by June 2020. Critical works to commission the system are assured for completion by October 2020, given the support from the new governments at the local and national levels, the agreements reached on the contract amendment, a dry season favorable for implementing works, and a revised planning timeline that incorporates COVID-19 mitigation measures. Thus, it is highly likely that the intended beneficiaries will be reached and the intended outcomes will be achieved, i.e., 16,500 people of the localities of Wichi, el Sauzal, Nueva Pompeya and El Pintado would benefit from access to more reliable and safe water services. In addition, around 6,400 people in dispersed areas would benefit from access to public standpoints fed by the main system. The IPP implementation included the construction of 703 rainwater harvesting systems., and 22 more are to be completed by October 2020, which would benefit approximately 3,600 indigenous and criollo people.

Based on the foregoing evidence, this review finds that the project has substantially achieved the first objective of increasing access to water supply in the NGR.

Rating
Substantial

OBJECTIVE 2

Objective

To increase access to urban drainage services in the Norte Grande Region of Argentina

Rationale

Theory of Change. With respect to the second objective, the project's long-term goal was to address serious baseline conditions such as frequent flooding during periods of rain. With the main roads having turned into waterways, small and non-motorized vehicles are unable to use the roads, while larger vehicles incur long time periods for crossing them. Speeds of around 34 km/hour at regular periods fall down to a maximum of 5 km/hour when the roads are flooded. With no alternate routes available, road users are forced to wait 3 to 6 hours until the flood has receded. Businesses in the area become inaccessible during major storm events, this harming economic activity.



The causal chain from inputs to outputs and outcomes is valid, as is their attribution to project activities. The input activities consist of the construction of urban drainage systems, which are expected to improve access to drainage services and thereby protect residents from urban floods..

Indicators. Achievement of the second objective was to be measured through the following indicators: (i) number of additional beneficiaries of urban drainage networks constructed as a result of the project; and (ii) surface in hectares (ha) of urban area protected from flooding with drainage networks built under the project.

Results. The Boulevard 9 de Julio urban drainage subproject had been completed by project closing. The sub-project benefitted 20,000 people and protected 300 ha from flooding events. Regarding the drainage channel of Avenida San Luis, the works were almost finalized by project closing, but the pending works for secondary drainage collectors and paving of streets were completed (with financing under the Plan Belgrano Project) in November 2019. This benefitted the remaining 20,000 beneficiaries (thus reaching the 40,000 target) and protected an additional 350 ha, for a total of 650 ha protected from flooding. (Note that the ICR cites 300 ha plus 350 ha in the text but shows 50 ha in Table 4.)

The ICR mission (ICR, page 17) verified whether the drainage interventions have improved the livability, resilience and economic activity of the city of Yerba Buena. The ICR team found that as a result of the project, rainfall events with intensities of 50 mm to 100 mm (occurring about seven times per year between September to March) are no longer expected to produce flooding in the project area. The heavy rains of January and February 2020 tested the drainage system, which was reported to have functioned as intended, thus protecting 40,000 people from flood risk. It is reported that road paving and drainage infrastructure have improved the city's connectivity and reduced traffic congestion. Beneficiaries indicated that getting stranded and disruption of daily activities during heavy rainfall no longer occurs. Maintenance and cleaning costs of the roads under the project have been reduced, thus financially benefitting the municipality.

Based on the foregoing evidence, this review finds that the project has substantially achieved the second objective of increasing access to urban drainage services in the NGR.

Rating

Substantial

OBJECTIVE 3

Objective

To increase the sustainability of water supply in the Norte Grande Region of Argentina

Rationale

Theory of Change. The baseline conditions that the third project objective sought to address (through technical assistance and capacity-building) included the chronically low operational and financial management capacities of the utilities, which made significant losses and were considered unviable. Based on criteria from the Utility Turn Around Framework (UTAF), all the utilities that the project supported were



ranked at the bottom of the Utility Maturity Index, given major deficiencies in their organization and strategy, financial and human resources management, and technical and commercial operations.

The project's causal chain is valid and could be expected to credibly achieve sustainability of service provision. The logically linked set of activities were based on steps recommended by UTAF to support the utilities in moving up the ranking ladder. In practice, the project supported measures to: (i) assess key performance indicators for the utilities; (ii) improve their planning and develop an action plan keyed to those indicators; and (iii) define targets and instruments to achieve them.

Indicators. The achievement of the third objective would be assessed through the following PAD indicators: (i) number of water providers that have implemented a monitoring system (management panel) as a tool for strategic decision making to improve management; (ii) number of service providers at the provincial or municipal level enrolled in an institutional development program; and (iii) evidence of more efficient and financially healthier providers of WSS services. The ICR team also assessed the ability of the *Servicio de Agua y Mantenimiento Empresa del Estado Provincial (SAMEEP)* ability to operate and maintain the two water sub-projects financed under component one of the project.

Results. Using a participative approach across several utilities in the NGR, the project's technical assistance and capacity-building activities achieved the following results:

Institutional diagnostics were conducted, priority actions were identified, the utilities received guidance to progressively implement actions to improve performance. The identification of priority actions were done through participatory, multi-stakeholder workshops, in one case jointly with the Inter-American Development Bank (IDB). The Project also supported south-south knowledge exchange, e.g., with the water utility of Mar de Plata and the Federal Council of Water and Sanitation Entities (COFES) for the purpose of exchanging experiences on telemetry systems for water operations.

Utility indicator dashboards (*tablero de control*) to guide decision making were developed and utilized. The first utility to participate was SAMEEP in May 2012, followed by Sociedad Aguas de Tucuman (SAT) in January 2013, the utilities of Catamarca and Formosa in 2014, and the utilities of Salta and Corrientes in 2015.

Significant priority actions were achieved. Although specific to each utility, the actions shared some common areas such as: (i) improvements in organizational structure; (ii) capacity strengthening for staff; (iii) increased macro and micro-metering; (iv) roll-out of actions to reduce non-revenue water reduction actions; and (v) improvements in the utility's commercial cadaster. Special committees were set up to define technical specifications for laboratory equipment and micro-metering. The National Water Utility of Uruguay also shared their experience in the implementation of micro-metering programs and the technical specifications that they used.

The utilities implemented strategic actions. SAMEEP and SAT introduced structural changes in their organization. The utilities developed technical specifications for the procurement of micro-metering and lab equipment. In the first phase in 2015 (under the subsequent Plan Belgrano Project), around 40,000 micro-meters were supplied to the operators of Chaco, Tucuman, Salta, Misiones, Corrientes and Catamarca. The utilities also received laboratory equipment at their central levels.

Operational outcomes for the service providers were significant. With operational support and accompanying tariff increases in 2016, the Chaco and Catamarca service providers showed improvements in key



performance indicators. For Chaco, the collection ratio increased from 46 percent (2013) to 68 percent (2018) and NRW decreased from 45 percent (2013) to 37 percent (2016), before increasing again to 58 percent in 2018 due to the utility's increased coverage area. SAMEEP recorded improvements in its micro-metering indicators, going from 48 percent in 2013 to 52 percent in 2019 after 12,000 micro-meters were installed at the end of 2018. SAT was provided laboratory equipment and training, which resulted in the improvement of bacteriological water quality compliance from 78 percent to 88 percent. SAT also demonstrated significant improvements in terms of: (i) reducing NRW from 50 percent in 2015 to 44 percent in 2018; and (ii) increasing micro-metering from 3.2 percent in 2013 to 12.2 percent in 2018. However, the increase in its collection ratio was small, from 74 percent in 2013 to 75 percent in 2018. Aguas de Catamarca showed a significant jump in its collection ratio, from 57 percent in 2014 to 91 percent in 2016.

The utility indicator dashboards implemented under the project laid the groundwork for the development of Management and Results Plans (MRPs) under the subsequent Plan Belgrano Project, which targeting the same utilities. Under the 2017 National Water and Sanitation Plan, the MRPs were to function as the planning and performance monitoring instrument that would drive the turnaround of utilities at the national level. The MRPs were expected to guide utilities toward more effective decision-making by: (i) establishing key performance indicators and improvement plans; and (ii) identifying investment needs and activities to achieve set targets. In consultation with their respective provincial regulators, the service providers prepare MRPs, which are approved by the provincial and federal sector authorities. As of the ICR preparation date, eight MRPs have been prepared and six have been approved between the relevant water utilities, the relevant ministry within the province, and the National Directorate for Water Supply and Sanitation. The IDB is supporting MRP development in other regions. It is also assisting the development of a digital National WSS Benchmarking Information System that is fully compatible with the MRPs, with the goal of helping collect and systematize utility performance data from the MRPs. These ongoing activities help ensure the sustainability of the MRPs.

One risk to sustainability is SAMEEP's financial deficit, which has been fully covered by transfers from the central and provincial levels, except in 2016 and 2017 during Argentina's macroeconomic crisis. These transfers have enabled SAMEEP's operations to remain viable but have created an increasingly dependent relationship. The financial transfers are not subject to a transparent planning exercise, hence there is no concrete principles underlying the amount and timing of the subsidies, which present a risk for the sustainability of the activities supported by the Project. Nonetheless, it may be expected that the transfers will continue given the importance of the Chaco region and the social commitment to improve services to its population. SAMEEP developed an MRP in 2018 that establishes objectives and measures to improve its longer-term financial and operational capacity. The MRP has been endorsed at the national and provincial levels. Moreover, a Participation, Transfer and Maintenance Works Agreement (PTA) was signed on April 4, 2012 between the Province of el Chaco and the Central Government, through which the Province made a commitment to provide adequate physical and financial resources to ensure the maintenance and operation of the infrastructure during and beyond the project's lifetime.

At the time of ICR preparation, SAMEEP's key operational and financial indicators remained weak (i.e., its high NRW, low collection ratio and low cost-recovery), although there have been some improvements in these areas. SAMEEP has the technical capacity to operate the systems financed under the project and has allocated resources accordingly. However, despite the efforts to increase tariffs, SAMEEP's operational deficit has increased in the past years, since prevailing tariffs do not cover operation and maintenance costs.



On balance, based on the foregoing evidence on significant improvements, while recognizing risks particularly with SAMEEP, this review finds that the project has substantially achieved the third objective of increasing the sustainability of water supply in the NGR.

Rating

Substantial

OBJECTIVE 4

Objective

To increase the sustainability of urban drainage services in the Norte Grande Region of Argentina

Rationale

The PAD did not provide specific outcome indicators to measure the sustainability of drainage services. Hence, the ICR (pages 21-22) made a qualitative assessment of the achievement of this objective. There were no activities in the project that were aimed specifically at improving the sustainability of drainage services. The only directly related activity is the signature of a Participation, Transfer and Maintenance Works Agreement (PTA) on May 20, 2013. To achieve technical sustainability, the urban drainage sub-projects were placed within the framework of the municipality's Yerba Buena and Faldeo Drainage Master Plans. However, the master plan's recommendations were not followed when the sub-projects were implemented. Given the recent and large population growth, rapid urbanization and increased run-off, there is a risk that the capacity of the existing Yerba Buena channel would not be adequate to receive and conduct the waters collected from the sub-projects during high run-off events. The municipality has a specific unit charged with the task of system operation and maintenance. However, the municipality's allocated budget and limited personnel can only respond to minor damages, despite the municipality's support for regular solid waste collection to reduce the risk of blockages. These underlying factors work against ensuring the sustainability of the system.

Due to lack of evidence, this review finds that the project's achievement is modest with respect to the fourth objective of increasing the sustainability of urban drainage services in the NGR.

Rating

Modest

OVERALL EFFICACY

Rationale

For the first and second objective, the project achieved substantial success in improving access to water and drainage services in areas in the NGR that were selected for implementation of four subprojects. For the third



objective, the project also made substantial achievements in helping to ensure the sustainability of water supply, by developing a culture of utility self-assessment based on key performance indicators and associated targets, which was implemented through indicator dashboards in four utilities of the NGR. Due to lack of evidence, achievement of the fourth objective was modest. Overall, the project's efficacy in achieving its objectives is rated substantial.

Overall Efficacy Rating

Substantial

5. Efficiency

The ICR conducted an Efficiency Analysis (Annex 4), which delineated transparently all the assumptions related to costs and benefits with and without the project, and was methodologically sound. The key findings are presented below.

Economic analysis. An economic analysis was not conducted at the time of project appraisal pending selection of the sub-projects for implementation. At appraisal, the Bank team focused on developing the methodology to be used for screening and selecting potential sub-projects. The project's Operational Manual (OM) delineated the methodology, which required the application of benefit-cost analysis and returns that are higher than 10 percent. The OM also included a methodology for the financial assessment of water providers. The ICR conducted an economic analysis of the subprojects that were implemented, following the benefit-cost approach and 10 percent discount rate stipulated by the OM. The ICR also conducted sensitivity analysis based on the 6 percent discount rate in current use by the World Bank for these types of projects, as well as a financial evaluation of the water provider SAMEEP.

For the four sub-projects, the range of economic internal rates of return (EIRRs) were from 11.8 percent to 12.7 percent, with a weighted average EIRR of 12.2 percent. This ICR Review concurs with the ICR (page 23) that these results were "on the conservative side as additional benefits that will come from the interventions were not included, such as: environmental and health improvement, economic growth from secure water provision and higher resilience to rainfall events."

Financial Analysis. The ICR's financial assessment of SAMEEP as the water provider brought out the current weaknesses and risky vulnerability of its financial position. SAMEEP has been dependent on public funds (local and federal) for financing its investment needs and recurrent expenditures. With the Government's tightening fiscal constraints during the past several years, tariff increases became necessary. A fourfold tariff increase was implemented from 2014 to 2018, which amounted to about 63 percent increase in real terms. The added revenues, however, were offset by the 68 percent increase in expenditures. Cost recovery levels have basically remained stagnant at 57 percent in 2010 and 55 percent in 2017. This difficult overall situation only worsened as the volume of public funds decreased while the operating deficits persisted. Thus, SAMEEP's weak financial position places a high risk on the viability and long-term sustainability of the works financed by the Project. This risk is being mitigated through comprehensive technical assistance as part of developing MRPs. Through the IPPs, the indigenous communities are also being encouraged to build ownership of the new systems and provided tools for adequate maintenance and operation.



Administrative and Operational Efficiency, The project required three closing date extensions and had a total implementation time period of 9 years. An important part of this delay is the framework nature of the Project that allowed for defining the selected subprojects the project had been appraised and approved. Preparation of the first sub-projects took about three years, including the preparation of all the required environmental and social aspects. According to the ICR (page 23), other factors that contributed to delays included the following: (i) the strong appreciation of the US dollar vis-à-vis the Argentinian peso; (ii) disagreements over price index calculations, which hindered the issuance of work certificates; (iii) the lack of counterpart funding, which resulted in work stoppage between July 2015 and March 2016; (iv) the change in project management; (v) delays in implementing works due to unexpected inclement weather; and (v) procurement delays to ensure the quality of bidding documents or works contract amendments. Disbursements were low during the project's initial years, reaching only 12 percent in 2014 (i.e., 4 years after project approval), and increasing only in 2016 (i.e., one year before the original 2017 closing date. At closing, the disbursement rate reached 98 percent.

Taking into account the relatively modest EIRRs, the continuing weaknesses and risky outlook in SAMEEP's financial position, and the significant operational and administrative delays that led to implementation of almost a decade, the project's efficiency 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		0	0 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	12.20	94.00 <input type="checkbox"/> Not Applicable

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

6. Outcome



The relevance of objectives is high. The project's overall efficacy in achieving its objectives is substantial, while noting that three of the objectives were rated substantial while the fourth one was rated modest. The project's efficiency is modest. On the basis of these sub-ratings, the project's overall outcome is moderately satisfactory.

As indicated in Section 2(a) above, a split rating was not carried out because the project was designed as a framework for financing subprojects that were to be specifically defined on the ground during implementation. Hence, the modifications at the 2015 restructuring involved: (i) sharpening the definition of the outcome indicators to correspond more closely with the subprojects that were eventually selected; and (ii) better defining the Institutional and other indicator targets in a manner that did not lower the ambition of the project.

a. Outcome Rating
Moderately Satisfactory

7. Risk to Development Outcome

Ensuring the sustainability of access to WSS services will require the continued involvement and commitment of the service providers. Risks to sustainability can be mitigated as follows:

For the water sub-projects, SAMEEP's operational and financial performance needs to be improved and maintained. SAMEEP's financial weaknesses place the sustainability of the works at a significant risk, despite the PTA that was signed between the province and the UCPyPFE at the time of sub-project selection, which allocated budgetary resources for the maintenance of works financed by the project. In particular, the Wichi sub-project will require significant resources to operate and maintain the water intake point at the Bermejo river to ensure the water treatment plant's continuous operation. Operational risks can be mitigated by SAMEEP's approved MRP and its continued involvement in the program.

The community's commitment and ability to maintain the systems are important factors in ensuring the sustainability of the decentralized water solutions. Risks to the community's involvement could be mitigated by the continuous implementation of the IPP under the follow-on Plan Belgrano Project.

For the drainage sub-projects, risks could be mitigated by allocating adequate resources to maintain the drainage channels and find solutions to high peak run-offs. These are being assessed in the follow-on Plan Belgrano Project.

8. Assessment of Bank Performance

a. Quality-at-Entry

The ICR (page 29) acknowledges that although the project's development objectives responded directly to the goals of the Government's NGR Development Program, the project's design (i.e., consisting of a framework for sub-projects yet to be defined) resulted in low disbursements in the initial years and the first investments materializing only three years after loan effectiveness. The lack of strong technical studies, coupled with low technical capacity at the provincial level to address contract amendments,



affected the implementation timeline. Risks and mitigation measures (e.g., close Bank reviews prior to issuing its no objections in order to ensure quality of the designs and documentation) were properly identified during project preparation; however, the low capacity at local and provincial level were not mitigated adequately. These caused important delays as technical designs usually lacked quality and had to be reviewed frequently. Moreover, macro-economic risks, although difficult to predict, were not properly assessed at entry and when the serious risks did materialize, they caused significant delays in project implementation. Coordination and cooperation between the Bank and IDB teams were adequate and flowed smoothly, thus minimizing the risk of overlapping interventions particularly during the phase of identifying the sub-projects. This helped ensure complementarity between Bank- and IDB-financed subprojects.

Quality-at-Entry Rating

Moderately Satisfactory

b. Quality of supervision

The ICR (pages 29-30) report that the Bank team conducted 13 implementation support missions, during which it proactively identified constraints to implementation and provided guidance on appropriate solutions. The team also held frequent technical and field visits. The mission's aide-memoires "were informative, clear, and timely, and identified the issues that needed to be addressed before the next mission" and the "...solutions [were] sought in close collaboration with the PIU, provinces, concerned government ministries and World Bank management." The Bank promoted knowledge exchange through joint workshops among PIUs, including other teams responsible for strengthening of social and environmental, safeguard and fiduciary capacities.

The Bank supervision team addressed proactively the technical design issues that arose during project implementation due to the overall technical complexity of the project and the low technical capacity at the provincial level. There were delays at the Bank's no objection stage due to the inadequate quality of the technical designs and of contract amendments that were presented to the Bank. These had to be reviewed and revised several times to ensure that they meet the necessary standards. For example, the Presidente Roca-Pampa del Indio subproject, the Bank supervision team made recommendations for improvement but the PIU was slow to incorporate them. In the Wichi subproject, the Bank team reviewed the hydraulic model heavily and found it to be insufficient, and the review process plus the PIU administrative delays resulted in an implementation delay of two years. According to the ICR (paragraph 61), "the original designs for both sub-projects were flawed from the beginning and better technical due diligence from the Bank (preparation) team could have been provided at that stage to avoid modifications after implementation."

There were no counterpart funds allocated to the project between July 2015 and March 2016, which impeded the issuance of work certificates and eventually led to work stoppage in all sub-projects between October 2015 and March 2016. The Government resolved this issue by signing an Emergency and Needs Decree on November 26, 2015, which reassigned the necessary funds back to the project.

The transition arrangements during the three changes in the Task Team Leader could have been better organized; for example, there should have been a handover mission between the last TTL and the new one to enable the latter's faster familiarization with the project. Moreover, the voluminous project



documentation should have been better organized and shared between the outgoing and incoming teams, since the heavy dependence on online archives led to supervision inefficiencies during the first months of the incoming TTL.

Quality of Supervision Rating

Moderately Satisfactory

Overall Bank Performance Rating

Moderately Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

The PAD's results framework (RF) had shortcomings related to the adequacy and definition of indicators. There was no PDO-level indicator to monitor the achievements of urban drainage sub-projects. The indicators for measuring improvements in the sustainability of water services were not properly defined. However, during implementation, several adjustments were made to the RF to better align the indicators with the project's interventions. This eventually led to an adequate number of indicators that were linked to each component's activities. Nonetheless, a major shortcoming remained since the RF was never adjusted to add an indicator for monitoring the sustainability of urban drainage services; moreover, some indicators and targets were not properly defined.

b. M&E Implementation

The PIU of the Coordinating Unit for Programs and Projects with External Financing (UCPyPFE) was responsible for monitoring project performance. In addition, the participating municipalities and service providers also had obligations to report data on specific indicators. Biannual reports were submitted to the Bank For the purposes of monitoring progress and responding to any problems that have emerged, biannual reports were submitted to the Bank. The ICR (page 28) indicated that "an impact evaluation was to be undertaken jointly with the Roads Bank Team to evaluate the impact of transport and water investments in the Province of Chaco (PR No. 3 and Pampa del Indio Water Project). The baseline data was collected in 2015, but further assessment was suspended in 2020."

c. M&E Utilization

The RF served as an instrument for aligning the diverse set of project stakeholders with their respective project activities. The borrower's own ICR indicates that the biannual progress implementation and financial reports helped to closely monitor the ongoing activities, and to identify and address issues that could cause delays. The reports also helped significantly in serving as the basis for structuring Bank supervision missions, which required working across different teams.



On the basis of the shortcoming related to the definition and adequacy of some indicators, and the suspension of the planned impact evaluation, which is highly important for a project of this type, M&E is rated modest.

M&E Quality Rating

Modest

10. Other Issues

a. Safeguards

The project, which was assigned an Environmental Category B, triggered the following World Bank safeguard policies: Environmental Assessment (OP/BP 4.01), Natural Habitats (OP/BP 4.04), Physical Cultural Resources (OP/BP 4.11), Indigenous Peoples (OP/BP 4.10), Involuntary Resettlement (OP/BP 4.12) and Safety of Dams (OP/BP 4.37). According to the ICR (pages 28-29), environmental screening was applied to all sub-projects and only those with an Environmental Category of B or C were made eligible for financing under the project. Given its framework nature, the Government prepared an Environmental and Social Management Framework (ESMF), which included an Indigenous Peoples Planning Framework (IPPF) and a Resettlement Policy Framework (RPF). The ESMF included an analysis of baseline conditions and delineated technical guidelines, procedures and institutional responsibilities for assessing and managing the potential environmental and social risks and impacts that could occur during project implementation. PIU was responsible for overseeing the implementation of the environmental and social safeguards, which making use of local supervision firms for day-to-day implementation of works under each sub-project. Indigenous Peoples Plans (IPPs) were applied to the water sub-projects during implementation.

Compliance with safeguards was consistently rated between Satisfactory and Moderately Satisfactory throughout the project implementation period, according to the ICR (page 29). However, the rating was Moderately Unsatisfactory as project closing due to two issues. One of the issues, related to the implementation of the Resettlement Action Plan (RAP), has been resolved prior to ICR preparation. More specifically, the Government's relocation and compensation to an affected person did not follow the procedures of the Resettlement Policy Framework (RPF). According to the ICR (paragraph 64), "the case was taken to the Argentine judicial system and it has been resolved with a compensation that has been deemed satisfactory by the affected party." The Bank is continuing to monitor the resolution of other issue related to the implementation of the IPP for the second phase of the Wichi sub-project. According to the ICR (paragraph 63), the IPP made commitments to beneficiary communities for results to be obtained in two phases. However, at project closing, there was uncertainty regarding the financing source to complete both the second phase and the IPP commitments. However, on April 16, 2020, the subsequent Plan Belgrano Project was extended until June 30, 2022, thus "providing assurance that the works will be completed, with an expected additional 13,200 indigenous beneficiaries and fulfilling the IPP agreements."

No issues during implementation were reported regarding the safeguards on physical cultural resources and natural habitats.



b. Fiduciary Compliance

The project’s financial management (FM) performance ratings were either Satisfactory or Moderately Satisfactory throughout the project implementation period, according to the ICR (page 29). The project’s FM arrangements were adequate and complied with Bank requirements. The Bank received regular Interim Financial Reports, which were reviewed and found acceptable. Private firms carried out the audits of the project’s financial statements. The Bank received audit reports on time, which were reviewed and found acceptable. There were no accountability issues throughout the project period. The Bank found as acceptable the final audit report for the period from January 1, 2019 to the closing date, including the grace period.

Procurement. Procurement performance was rated Moderately Satisfactory at project closing due to delays that stemmed mainly from technical issues with the proposed designs, the lengthy review and quality assurance processes, and the slow approval process in the last year of implementation. The bidding processes themselves went generally smooth and complied with Bank norms, according to the ICR (page 29).

c. Unintended impacts (Positive or Negative)

d. Other

11. Ratings

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

12. Lessons

The following main lessons were provided by the ICR (pages 30-31) and are presented here with some adaptation by IEG:

Project design and preparation needs to explore partnership options with local NGOs and be guided by opportunities to involve the local community in a participative process. The effectiveness of the project’s interventions was enhanced by active engagement with project beneficiaries and NGO partnerships. The implementation of the Indigenous Peoples Plan (IPP) underlined the importance of early engagement with project beneficiaries. For example, citizen



consultations at the time of modifying sub-project technical designs resulted in (i) a higher number of final beneficiaries and (ii) the implementation of practical, on-site solutions (such as rainwater harvesting systems) that may not have been considered otherwise. Partnering with the local NGO Fundación Gran Chaco was an important factor in the IPP's implementation success. The NGO had thorough knowledge and engagement with the indigenous communities in the project area, which were key for guiding and building SAMEEP's capacity in managing social processes.

Improving the sustainability of water services involves a long process that requires patient interventions at the levels of both the service provider and the overall enabling environment.

While the project's main investments were for infrastructure development, the Bank team included an institutional strengthening program during project design, which set the basis for a more comprehensive approach for utility improvement in the subsequent Plan Belgrano Project. Focusing on the water service provider is important but improvements in the enabling environment also need to be introduced in order to achieve sustainability of services. Improved coordination among the national, federal and local level stakeholders needs to be established to ensure more efficient allocation of resources. Finally, the preparation and implementation of Management and Results Plans can also serve as a useful instrument for facilitating commitment among these different levels.

For framework projects to be efficient, the eligibility criteria and methodology of intervention needs to be clear and the list of potential investments need to be sufficiently ready. Although going forward with a framework project made sense at the time, the lack of a sufficiently ready list of potential investments led to significant delays and risks during project implementation. Technical studies were lacking, and technical capacity was low at the provincial level to address contract amendments, thus causing implementation bottlenecks. In the future, the Bank could utilize funds from other related projects or from trust funds to finance sufficiently ready and technically adequate pre-investment designs. Alternatively, contracts could be undertaken under the design and build modality, rather than on the usual works contract.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR is clear, logically organized, and well written. It placed a strong emphasis on providing a significant amount of detailed quantitative evidence to support its findings and ratings. The efficiency analysis (Annex 4) was thorough, particularly with respect to the financial situation of SAMEEP. The inclusion of maps and photos from the subprojects in Annex 1 was very useful. The ICR focused adequately on accountability and was candid about the project's shortcomings, particularly with respect to the long implementation delays and their



various causes. Apart from some repetitiveness and minor drafting errors, as well as the excessive length at 31 pages (more than double the suggested 15 pages), the ICR was well prepared overall.

a. Quality of ICR Rating
Substantial