

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

BOLIVIA

**SOCIAL ENTREPRENEURSHIP PROGRAM
EXECUTIVE SUMMARY**

**SOCIAL ENTREPRENEURSHIP IN POTABLE WATER FOR
LOW-INCOME RURAL COMMUNITIES**

(BO-S1004)

FINANCING AND TECHNICAL COOPERATION PROPOSAL

This document was prepared by the project team consisting of Camille Ponce (COF/CBO); Christopher Jennings (RE1/EN1); Kevin McTigue (LEG/OPR); Jessica Villanueva (consultant); Margarita Reyes (SDS/MSM); and Dieter Wittkowski (SDS/MSM), Project Team Leader.

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INFORMATION AVAILABLE IN THE TECHNICAL FILES

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I. BASIC PROJECT INFORMATION

A. Executing agency

1.1 Aguas del Este S.A. (AE)

B. Amount and source of financing

	BID US\$	AE US\$	Total US\$
Reimbursable financing:	350,000	40,000	390,000
Nonreimbursable financing:	60,000	0	60,000
Technical cooperation:	<u>76,000</u>	<u>39,000</u>	<u>115,000</u>
Total:	486,000	79,000	565,000

Source: Net income from the Fund for Special Operations (FSO)

C. Financial terms and conditions

Amortization period:	15 years
Grace period:	3 years for principal
Interest rate:	4% real per annum
Currency:	Bolivianos

D. Nonobjection statement

1.2 The Deputy Minister for Public Investment and External Financing of Bolivia has given his nonobjection to the Bank's financing of the project through note VIPFE/DGFE/NEG-01390/2005 of 4 May 2005.

E. The problem to be addressed

1.3 The project is intended to improve the living conditions of rural inhabitants of three communities in the Department of Santa Cruz and one community in the highlands or valleys in Bolivia, by providing guaranteed quality drinking water services.

1.4 Nationally, only 62% of the population has piped drinking water. The rest of the population gets drinking water by other means: 11% from wells without pumps; 11% from rivers; 7% from standpipes; 4% from pump wells; 2% by vehicle; and the remainder from lakes and other means. In the major cities, such as La Paz, Cochabamba, and Santa Cruz, the population is supplied with drinking water by municipal, private, and cooperative water supply and sewerage companies that

service the vast majority of the urban population. In rural areas only an estimated 31% of the population has access to organized water supply services.

- 1.5 The populations of rural and low-income communities do not attract the interest of large water supply cooperatives, due to their distance from urban centers, the dispersed location of dwellings, limited ability to pay, and sometimes because of a cultural reluctance to pay for basic services. These traits result in high costs and lower and/or unreliable revenues to cover the administrative costs of water supply services in these localities. Consequently, investments in these systems are not in general economically feasible, particularly in the short and medium term. Rather than invest in isolated, unprofitable systems, cooperative firms seek to increase the density of their systems and look for investment opportunities that are more profitable in the short term.
- 1.6 As a result, communities beyond the metropolitan areas of these cities form small, local cooperatives to try to address their water supply problems. Sometimes these cooperatives obtain public resources (from the municipal or departmental government) for startup investment in a basic system, run under the cooperative's own bylaws and rules by an administrative council made up of the cooperative's members.
- 1.7 Unfortunately, the water services supplied by these local cooperatives regularly suffer from a variety of administrative, management, and technical problems, including: (i) politicization at the local and municipal level; (ii) customer distrust in the administrators of the service, owing in some cases to corruption; (iii) system deterioration and failures due to a lack of maintenance and upgrades in infrastructure; (iv) serious financial problems because revenues do not cover the costs of administration, maintenance, and depreciation, since rates are not properly set and meters are lacking; (v) poor quality control of water supplied; and (vi) poor consumer appreciation of the importance of water resources and their rational use, which affects the willingness to pay for services and leads to widespread arrears in payment for services.
- 1.8 All of these problems lead to water services of extremely poor quality and supply volumes that are inadequate to cover current customers and the families who wish to obtain hookups to the system, with a consequent adverse impact on living conditions. Even when rural cooperatives attempt to resolve this situation, it is extremely difficult for them to obtain the financial resources and technical support required, because: (i) large cooperatives and governments at the municipal, departmental, and national levels have neither the interest nor the resources to invest in improvements in small and/or rural systems; (ii) it is not possible for these cooperatives to gain access to financing either from the State or from commercial banks for system improvements or expansions; and (iii) customers and their cooperatives lack own resources to invest in the improvements needed to correct the indicated problems.

- 1.9 The financial troubles of these providers and the conditions of poverty among the inhabitants of the selected communities prevent water supply systems from branching out into complementary systems for sewage collection, disposal, and treatment. Most rural homes in the region have no bathrooms or laundry facilities, and thus are in no position to make sewer connections or pay for drainage systems.
- 1.10 **A private alternative:** To help address these problems, the Bank proposes to lend resources from the Social Entrepreneurship Program to the company Aguas del Este S.A. (AE)¹, a private operator that has been promoting technically, financially, and environmentally feasible alternatives for drinking water systems in small rural communities. Using own resources, AE designs, builds, operates, maintains, and expands its own and third parties' water systems, guaranteeing quality and quantity. The company already has eight systems in operation. AE would like to continue expanding its service to other rural communities with drinking water problems, but is limited by its own lack of capital.
- 1.11 **Beneficiaries:** Direct project beneficiaries are the approximately 4,800 rural inhabitants of the communities of Don Lorenzo, Gremial, and Reina del Oriente, in the municipality of Cotoca, department of Santa Cruz, 20 kilometers from the city of Santa Cruz. In each of these communities, the existing water system will be expanded and improved. The inhabitants earn very low incomes, averaging US\$80 a month (US\$960 per year), from activities such as agriculture (crops and/or livestock), trade, masonry, and other temporary activities. Their dwellings, built from boards or cement blocks, have an average of two or three rooms, and are scattered in remote, very poor areas, where illiteracy is 14% and there are no local health clinics. The other group of beneficiaries will be some 2,200 additional rural inhabitants expected to benefit from the new system to be installed in a community with similar characteristics in the valleys or highlands. Altogether, the four water systems will provide first-time connection to the water supply for over 3,500 people, and service for more than 3,500 customers of existing systems will be upgraded.
- 1.12 **Rationale:** The project meets the criteria of the Social Entrepreneurship Program, because by supplying a sustainable social service, it will have a direct impact improving the well-being and quality of life of low-income communities that lack access to other means of support. The project would not appeal to other financing sources; it is too small for the Inter-American Investment Corporation (IIC) or other Bank instruments; and as a private agency, Aguas del Este could not receive support from the various social funds for basic infrastructure in Bolivia. This pilot project will test an intervention model that will serve as an example to the private sector, stimulating and encouraging it to broaden its participation in this type of project.

¹ AE, with fewer than 10 employees, annual revenue below US\$100,000, and small profits (between US\$10,000 and US\$20,000 annually), is defined as a microenterprise in Bolivia. It has three shareholders, of whom one is general manager and another, operations manager.

II. THE PROJECT

A. Objectives

- 2.1 The project's objective is to help improve the living conditions of the inhabitants of four rural communities in Bolivia. The project's purpose is to improve the quality, sustainability, and reliability of the water supply and sewage disposal services in these communities.
- 2.2 To achieve this purpose, the following lines of action are planned: (i) new investment in infrastructure and standard equipment to improve the quality, sustainability, and reliability of drinking water services; (ii) strengthening of the operations, maintenance, and private administration of the systems, according to quality standards; (iii) installation of onsite alternatives for sewage disposal; (iv) awareness raising among customers about the importance of water, its rational use, and the need to charge a fee based on water consumption volumes; and (iv) improvement in the technical and operational capacity of Aguas del Este (AE) to provide efficient, high-quality services to beneficiaries.

B. Description

- 2.3 The project has three components to be executed by the company Aguas del Este S.A.: one involves reimbursable financing in the amount of US\$390,000 (IDB: US\$350,000; AE: US\$40,000); another, nonreimbursable financing in the amount of US\$60,000 (IDB); and the third, nonreimbursable technical cooperation funding in the amount of US\$115,000 (IDB: US\$76,000; AE: US\$39,000).
- 2.4 The **reimbursable financing component** (IDB: US\$350,000) will provide AE with resources to finance: (i) new investments in infrastructure and standard equipment for the supply of high quality drinking water in up to four low-income rural communities; and (ii) procurement of equipment and other goods to improve its capacity for effective and sustainable design, construction, operation, and administration of rural drinking water systems. AE will contribute US\$40,000 for supervision of works and procurement of land, among other areas. Bank financing will be provided at a four percent (4%) annual rate of interest, denominated in Bolivianos with maintenance of value, a 15-year repayment period, and a 3-year grace period.
- 2.5 The **nonreimbursable financing component** (IDB: US\$60,000) is to finance up to US\$200 per family, on a nonreimbursable basis, for onsite sewage disposal solutions, such as latrines, drainage pits, or filtration areas. These nonreimbursable resources will be used to work with the neediest families who either do not have other acceptable solutions or lack the resources necessary for their construction. AE will execute this component in tandem with the others, in accordance with Operating Regulations specific to the component, the approval of which by the

Bank will be a condition precedent to the disbursement of resources under this component.

- 2.6 The **technical cooperation component** (IDB: US\$76,000) will be targeted to support qualitative and quantitative enhancements in drinking water services in order to: (i) raise the awareness of and train customers on the importance of rational water use, household metering, and the use and maintenance of various sewage disposal alternatives, among others; (ii) enable technical and operational improvements at AE to provide efficient services; and (iii) disseminate the results and lessons learned from this pilot project. These resources will also be used to finance project evaluations and audits. The plan of operations for the technical cooperation component is in the technical files of the project.

C. Sustainability and results of the financial analysis

- 2.7 The financial viability of the project was evaluated on the basis of: (i) the analysis of each of the individual systems;² (ii) the analysis of AE as a business, including the other systems it operates; and (iii) two major factors that, if they persist over time, will ensure that the project purpose will be met: (a) the growing demand for the supply of quality drinking-water services;³ and (b) establishment of a rate structure that covers operations, maintenance, and investment.
- 2.8 Under the proposed financial conditions, project forecasts show that the company as a whole, taking into account all of the systems currently in operation and the new investments, will generate positive cash flows as of the first year, with flows showing sustained increases as of year 4. The internal rate of return (IRR) is 18%. As for profitability, after small losses in the first two years, AE projects increasing profits into the future. AE is willing to assume small losses in the first years, because its profit horizon is geared to the medium to long term (more than 10 years). The debt coverage ratio of the company as a whole is above 2:1 in every year, with the exception of year 4, when it drops to 1:1. The individual systems become sustainable in the medium term, after a period of slightly negative flows in the first years. The three individual systems, each with an IRR of 6% to 12%,⁴ begin to cover their entire costs in years 7 to 10, and reach a debt-coverage ratio in years 9 to 11 greater than 1:1. It must be noted that the projections use conservative growth trends that assume an average rate based on the parameters of existing systems' current operations, which rates could be increased in the future as a result of a rate structure analysis that is included in the technical cooperation

² For each system, a 20-year cash flow was devised, in order to ensure that the financial ratios normally used to analyze water works are within the projected parameters.

³ The projection of demand is based on statistics of population growth in the municipio where the system is located.

⁴ Calculated at 20 years with a 12.07% discount rate, the IRR was set by the Vice Ministry for Public Investment and External Financing of Bolivia for water and sanitation projects.

operation (TC). The incorporation of other systems of middle- and high-income groups was not factored in, although AE is planning to handle such services in the coming years, a move that would significantly enhance cash flows.

- 2.9 Compared with the interest rate that Aguas del Este (AE) theoretically would receive in the local financial market (12% in real terms), the Bank's preferential rate (4% real) offers an 8% spread in AE's favor. The interest rate spread will not be used to boost AE profits, as will be ascertained through the regular reports. The spread will constitute a *net transfer to the users*, who will be charged lower rates because of their incomes and payment capacity, which are lower in relation to that of average customers of large cooperatives in Santa Cruz. Nevertheless, the reduced rates will be adequate to cover the operating, maintenance, and replacement costs of the systems. The interest rate spread is partially offset by the transaction costs of the IDB loan, the additional effort required from AE to handle the nonreimbursable financing component for sewage disposal, and the demonstration effect of this pilot project, which is testing a private model for supplying drinking water. The operation was designed so that no extraordinary profit would be made by the company off the proposed interest rate.

D. Credit risk to the Bank

- 2.10 The credit risk arises from the payments that customers are to make to AE, which could adversely affect AE's ability to pay the Bank. This risk is mitigated by the fact that the project is to be headed by a company that, although small, is sound and has several advantages: (i) a history of sustained growth in assets, sales, and profitability, with considerable efficiency in collections; (ii) operations using mainly shareholders' own resources, who insist on their investments being prudent and profitable; (iii) shareholders with a professional reputation and established track record in Bolivia; (iv) solid financial standing even after contracting debt from the Bank; (v) investments in water systems diversified in geographic and socioeconomic terms; and (vi) previous work raising customer awareness and using a participatory, transparent methodology to set rates for their rural systems, which minimize the risk of conflicts over service fees.

E. Expected results and benefits attained

- 2.11 The project will provide permanent access to services for guaranteed quality drinking water for an estimated total of 7,000 residents of rural communities. Residents will receive the benefits of Bank resources through an immediate solution, with guaranteed quality, to their water needs and at a cost consistent with their ability to pay. Without this support from the Bank, they would not likely receive a sustainable water service for several more years, due to the lack of resources, interest, and investment on the part of other potential water suppliers. The improvement in drinking water and sanitation services produces considerable benefits in terms of well-being. A general increase in the quality of life should be observed, due to the elimination of uncertainties and shortages in water supply.

Consumers currently connected to systems that are to be upgraded (3,500 inhabitants) will benefit from higher service levels in several ways: (i) continuity of service, 24 hours a day, with adequate pressure, and in compliance with Bolivian water quality standard NB512; (ii) 100% of their complaints will be addressed; (iii) the proportion of unmetered water will be below 40%; and (iv) the rates for each system will be set according to a structure that takes into account the ability to pay and actual water consumption of the community. Water will be treated in accordance with the strictest standards, and monthly quality control inspections will be performed.

- 2.12 The project will make possible a total of approximately 790 new household connections, benefiting some 3,500 additional inhabitants. These mainly very low-income consumers, who are still not connected to drinking water systems, will receive all of the above benefits to an even greater degree. Moreover, at least 300 households will get an onsite sewage disposal solution, funded with nonreimbursable Bank resources. At least 50% of the inhabitants will benefit from education in the areas of hygiene, rational water use, and other areas relevant to sustainable system management. Annualized indicators for these benefits will be provided in the table of project indicators (in the project technical files).

F. The Bank's strategy

- 2.13 The project activities are consistent with the Bank's country strategy with Bolivia in the 2004-2007 period, which takes on among its main thrusts the enhancement of efficiency and equity in the provision of social services, particularly for the poorest sectors of the population. The project is consistent with this strategy, since it will finance the improvement and introduction of rural drinking water and sanitation projects, while strengthening a private entity with which it is expanding the supply of basic services and facilitating greater efficiency in service delivery. The project also complements the Basic Sanitation Program for Small Municipalities (PROAGUAS), loan 1050/SF-BO, with which it will seek to coordinate certain activities and exchange relevant information, including the identification of the beneficiary community targeted in the valleys or highlands area, consumer education activities, and information on cost-effective alternatives for sewage disposal.

G. Cooperation with other international cooperation agencies

- 2.14 Most basic sanitation projects in Bolivia supported by international cooperation agencies do not focus their efforts on the active participation of for-profit private providers, but rather on public programs or regional cooperatives that provide basic services. Now that the Bolivian government has been enacting laws to promote private participation in basic sanitation services, AE's experience is garnering greater relevance and recognition. For example, AE frequently participates as a presenter, at the invitation of the World Bank, in international workshops on private-sector service-delivery models. This pilot experience is expected to serve as

a case study offering lessons learned in the design of sector finance policy, which the Bolivian government has been putting together with support from GTZ, the European Union, the World Bank, and the IDB, among others.

H. Summary of the environmental and social review

- 2.15 The environmental impact of the project is positive. Given the nature of the project and the communities' characteristics, major works that could have a serious negative environmental impact are not planned. Specifically: (i) better use of water resources will be achieved, since charges for water supply will be based on consumption, thereby reducing losses; and (ii) waste water disposal will be improved. Such limited negative environmental effects as noise, dust, and other construction-related inconveniences, will be modest, temporary, and easily manageable.
- 2.16 The Committee on Environment and Social Impact (CESI), in its meeting held on 8 April 2005, reviewed this operation and requested that the project report clearly explain the following points: (i) integration of the environmental variable; (ii) management of chemical products; (iii) compliance with basic environmental sanitation policy OP-745; and (iv) water-use-related environmental aspects. The actions to be taken in the project in connection with these areas have been incorporated into its design and are described in a separate document available in the project technical files. Semiannual project reports will include information from the monitoring of these areas.

I. Special conditions

- 2.17 Prior to the first disbursement of **reimbursable financing** resources, AE will present, to the Bank's satisfaction, the final version of the Operating Regulations for the reimbursable financing component for construction of water supply infrastructure, approved by the AE Board of Directors.
- 2.18 Prior to the first disbursement of **nonreimbursable financing** resources, AE will present, to the Bank's satisfaction, the Operating Regulations for this component, approved by the AE Board of Directors.
- 2.19 For the first disbursement of **technical cooperation** funds, AE will present: (i) a work plan for the first 12 months of the project, including a schedule of activities and a timetable for compliance with performance indicators, for the control and supervision of the operation's progress; and (ii) the terms of reference for contracting consultants who will provide advisory support during the first six months of the project.
- 2.20 For disbursements *above 40%* of the technical cooperation funds, AE will present: (i) the results of the consultant's work to identify the community that will benefit from the project in the valleys or highlands region; (ii) the investment plan and

schedule for the system identified; and (iii) evidence of having completed a minimum of 50% of the slated investments for each of the three other planned systems.

- 2.21 The financing agreement will include a special clause stipulating that AE will not sell any of the project systems without first consulting with the Bank.
- 2.22 **Recognition of expenditures:** The Bank may recognize expenses under the local contribution, for both the reimbursable financing and the technical cooperation components, up to a total amount of US\$15,000 in expenditures made after 1 May 2005, for water systems equipment and enhancements of accounting information systems, so long as requirements are followed that are substantially similar to those set forth in the Bank's rules on these matters.
- 2.23 **Procurement:** Procurement will follow Bank policies for the private sector.⁵ Specifically: (i) the stipulation in Article 5.01(b) of the General Conditions of the loan contract will apply, which indicates that, for the procurement of goods in amounts under US\$10,000, it is not necessary for three bids to be presented; and (ii) procurement expenses for goods and services will be evaluated ex post as per documents GN-2350-4 and GN-2349-4.

J. Reports, evaluations, and audits

- 2.24 **Reports.** AE will deliver progress reports to the Country Office of the Bank by the last day of May and November each year over the life of the project. These reports will include an analysis of the extent to which the performance indicators have been met, problems that have arisen with execution, actions taken to overcome them, and the main activities planned for the following six-month period. They will also include, at a minimum: (a) **for the reimbursable financing component:** (i) works and infrastructure built and equipment procured; (ii) the number of residents and communities benefiting from these works; (iii) an analysis of the billing efficiency in each community, and a comparison of rates paid vis-à-vis regional and national averages; (iv) the number of new connections and compliance with water quality and service continuity controls; (v) an account of agreements entered into with municipalities and communities; (vi) estimate of net income and/or losses generated by the systems receiving support under the reimbursable financing component; and (vii) a summary of AE's cash contributions to the project; (b) **for the nonreimbursable financing component:** (i) information on the introduction and operation of the nonreimbursable contributions program for onsite sewage disposal solutions; and (ii) quantitative and financial information on the number of beneficiaries, amounts granted, and use of resources; and (c) **for the technical**

⁵ Document GN-2349-4: Policies for the procurement of works and goods financed by the IDB, specifically Appendix 4, "Policies for procurement by the private sector;" and document GN-2350-4: Policies for selection and contracting of consultants financed by the IDB, specifically Appendix 4, "Policies for procurement by the private sector."

cooperation component: (i) a summary of the consultants' work and the technical assistance provided; (ii) a summary of results obtained from the systematization of experiences and dissemination of results at international events; (iii) a summary of AE's progress in the environmentally sustainable design and management of systems, including sewage disposal and the points indicated by the CESI; and (iv) listings of who has received training and on what subjects. The last of these progress reports will be the project's final report; accordingly, it will include aspects relevant to the entire life of the project.

- 2.25 **Evaluations:** The project provides for two evaluations, performed by individual consultants selected and contracted by the Country Office of the Bank in Bolivia with technical cooperation resources. One midterm evaluation will be performed 18 months after the first project disbursement; the other, 36 months after the initial disbursement. The first evaluation will gauge, at a minimum: (i) progress in upgrades of water supply systems, in terms of the quality and sustainability of the services; (ii) the degree to which project objectives and performance indicators have been met; (iii) the lessons learned and recommendations for project improvement; and (iv) the institutional capacity of the executing agency.
- 2.26 The final evaluation will gauge and document, in addition to the points indicated for the initial evaluation: (i) outcomes from the achievement of project objectives; (ii) lessons learned; and (iii) project sustainability.
- 2.27 **Audits:** During project execution and within 90 days of the end of its fiscal year, Aguas del Este (AE) will present the company's audited annual financial statements and financial statements for the financing component. For these audits, the Bank will accept as valid reports from an independently registered public accountant acceptable to the Bank. These audits will be paid for by the executing agency with counterpart resources. Resources from the Bank's contribution will be used to commission the final audit of the technical cooperation and nonreimbursable financing components, once the project execution period has ended.

K. Project risks and their mitigating factors

- 2.28 **Social and community aspects:** One of the risks of the project is the operations' dependence on the relationship with the community, which could be adversely affected by the social pressures and heightened uncertainty now present in the country. This risk will be mitigated by the following factors: (i) AE's previous work in negotiations and consensus-building with residents and institutional and political stakeholders participating in basic sanitation services, transparent participation based on equality and mutuality of interests while respecting the rights, obligations, functions, levels of participation and decision-making of each one of the stakeholders; and (ii) the training activities that AE will provide to educate rural residents on the advantages of receiving water supply services under principles of sustainability.

- 2.29 **Concentration of share capital:** Because AE capital is held solely by three shareholders, there is a risk that the company could suffer from decapitalization, in the event of a severe social or financial crisis that undermines the business's viability or of a personal situation involving one of the shareholders. Two factors mitigate against this risk: (i) the company's favorable mid- to long-term prospects for generating financial flows that ensure an attractive return on investments and a buildup of company capital; and (ii) the shareholders' interest in preserving their personal standing with the Bank and local authorities.
- 2.30 **Projected demand:** The risk is that the demographic growth rate in the communities does not reach forecasted levels, resulting in a decrease in revenues that AE anticipates and adversely affecting the financial viability of the individual systems. This risk is offset by the company's financial flows from systems that already are showing profits, which afford AE an adequate margin to make up for the weakest flows from these systems, should the need arise. However, this risk is unlikely to materialize, since the growth and service rate variables used in the financial projections were very conservative and were worked out on the basis of historical local growth rates, which are expected to maintain their pace.

L. Exceptions to Bank policy

- 2.31 None.