

Lessons from small municipalities in Ecuador

Delegating water and sanitation services to autonomous operators

This field note documents the experience of the Rural and Small Towns Water Supply and Sanitation Program (PRAGUAS), executed in Ecuador and financed by the World Bank. Under the PRAGUAS program, the national government offers municipalities technical assistance and financial incentives to delegate the provision of water (and sanitation) services to autonomous (public or private) operators.



PRAGUAS represents an effort to modernize public water and sanitation services with the active participation of communities, municipalities, NGOs and the local private sector.

Overview

The development of basic infrastructure in Ecuador is key both to achieving higher economic growth and improved living conditions. The Ministry of Urban Development and Housing (MIDUVI) through the Sub-Secretariat for Potable Water, Sanitation and Solid Waste (SAPSRS) is carrying out the Rural and Small Towns Water Supply and Sanitation Program (PRAGUAS) in an effort to modernize public water and sanitation services with the active participation of communities, municipalities, NGOs and the local private sector. This field note documents the PRAGUAS experience in providing small and medium-sized municipalities with technical assistance and financial incentives to delegate water (and, where appropriate, sanitation) service provision to autonomous (public, private or community based) providers. It provides background on the general approach and the criteria for determining financial incentives and profiles the cases of six municipalities that have already successfully delegated their water (and sanitation) services.

Background

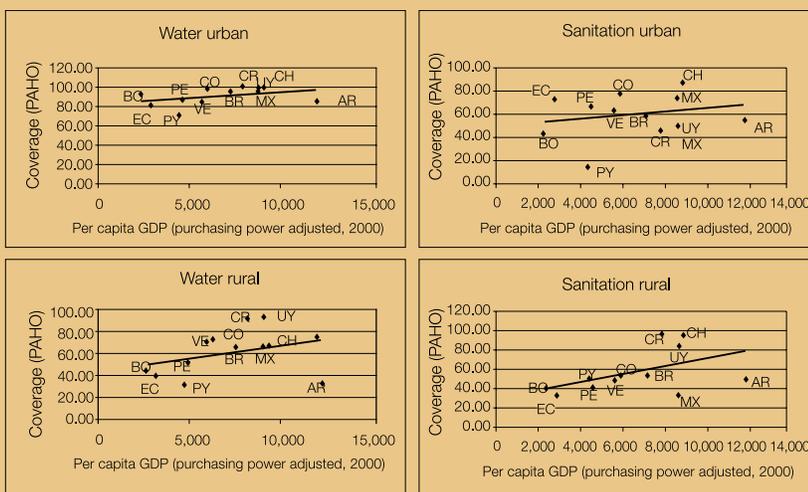
The Water and Sanitation Sector in Ecuador

Despite significant improvements in recent decades, Ecuador's water and sanitation service coverage still ranks among the lowest in South America (see Figure 1). At present, 82% of the urban population and 39% of rural inhabitants have access to water¹ supply, while 73% of the urban population and 29% of all inhabitants in rural areas have access to sanitation services².

In addition, Ecuador faces problems of poor service quality and inefficient supply, limited cost recovery through tariffs and a high reliance on central government and municipal transfers to bridge financial gaps. The water supply and sanitation sector also suffers from an incomplete regulatory framework and the lack of a comprehensive framework for water resource management³.

Service provision is characterized by social inequity. Urban and rural low-income families have the lowest access to appropriate water and sanitation services. Tariffs cover barely two thirds of operating costs when appropriate provisions for routine

Figure 1: Water and sanitation coverage (%) in selected Latin American countries compared to GDP



¹ Water supply services include both household connections and protected, easily accessible public sources (public taps, wells, spring catchments, rainwater collection systems).

² Sanitation services include both piped sewerage and appropriate on-site disposal systems (dry latrines and flush toilets).

³ Drees, F., Vidal, E., James, E. y Durand, P., Ecuador-Notas de Políticas. Una propuesta para el despegue económico y social. The World Bank, 2003.

maintenance are included. The poorest customers, however, are unlikely to benefit from low water tariffs. In fact, almost 40% of the urban poor (bottom 3 income deciles) lack access to piped water services. The situation is even bleaker in rural villages where over 60% of the poorest people still lack household connections⁴. On balance, low tariffs deprive water and sanitation service providers of the resources they need to reach areas they do not already supply, frequently leaving these areas to pay higher rates for water of questionable quality. While national and municipal transfers help to cover operating and maintenance expenses, these transfers alone are insuffi-

cient to close the coverage gap. In practice, public transfers often become a subsidy for the relatively privileged people who already have piped water supply services.

Sector organization

Until the mid 1990s, the Ecuadorian Institute for Sanitation Works (IEOS) bore responsibility for building, operating and maintaining water supply systems nationwide with resources provided by the central government derived mostly from oil exports. When this funding dropped in the 1990s, the government decided to transfer water supply systems to municipalities and communities who were charged with operating and maintaining them as part of a more general process of decentralization and state modernization.

IEOS was replaced by the Sub-Secretariat for Potable Water, Sanitation and Solid Waste (SAPSRs) under the Ministry of Urban Development and Housing (MIDUVI). MIDUVI itself is still completing its transition from a direct executor of water supply and sanitation projects to a promoter of services provided by municipalities, communities and the private sector. As a result of decentralization, a large number of service providers emerged in large, medium and small cities while in rural areas, water boards (Juntas de Agua Potable) provide water services and occasionally sewerage. In most of Ecuador's 219 municipal capitals, urban water supply services are provided directly by a department of the municipal government which often shares staff with other departments and lacks financial and institutional autonomy.

⁴ Drees, F., Vidal, E., James, E. y Durand, P., Ecuador-Notas de Políticas. Una propuesta para el despegue económico y social. The World Bank, 2003.

Table 1: Key Actors in the Water and Sanitation Sector

Organization	Function
MIDUVI/SAPSRs	Designs sector policies and regulations and determines the nationwide sector development strategy
Ministry of Public Health	Regulates potable water quality
Ministry of the Environment	Responsible for environmental protection and the control of water pollution
National Water Resources Council (CNRH)	Comprises eight regional development corporations charged with managing water resources and issuing water abstraction licenses
Ecuadorian Development Bank (BEDE)	Channels financial resources to municipalities

The incentives are designed to enhance system operation and to provide the basis for financial sustainability.



Technical Assistance for Delegating Water and Sanitation Services under the PRAGUAS Project

In response to the sector issues outlined above, the central government is carrying out the Rural and Small Towns Water Supply and Sanitation Project (PRAGUAS) with financing from the World Bank (IBRD Loan 7035-EC for US\$32 million), municipalities and local communities.

PRAGUAS plans to invest about US\$210 million over ten years, of which the World Bank would contribute US\$130 million in three adjustable program loans, while municipalities and communities would contribute the remaining US\$80 million. By 2004, the SAPSRS had expanded the program to all 21 provinces in continental Ecuador (no activities are planned

in the Galapagos Islands) with water supply and sanitation investments in rural areas. In addition to rural investments, the PRAGUAS program includes technical assistance (TA) and financial incentives to help small municipalities in delegating their water and sanitation services to autonomous operators. All municipalities except for the three largest (Quito, Guayaquil and Cuenca) are eligible.

The project promotes modern, delegated management models and tariff levels that cover at least operation, maintenance and replacement costs with adequate provisions for protecting low-income consumers.

Incentives for delegating to an autonomous operator

To encourage municipalities to delegate services to autonomous providers, PRAGUAS strategically added a financial incentive to municipalities that enroll in the technical assistance component and introduce a delegated management model for water and sewerage system operation in the municipal capital. The incentives are designed to enhance system operation and to provide the basis for financial sustainability. Resources may be used both for engineering designs (works to improve and rehabilitate existing services), and for goods and civil works themselves (typically network rehabilitation and metering).

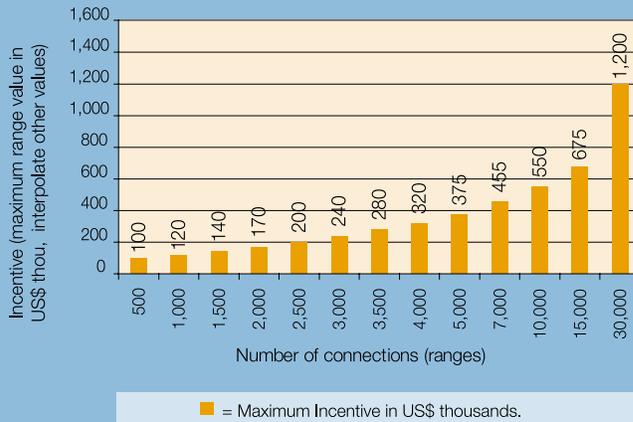
PRAGUAS has budgeted US\$500,000 for engineering designs and US\$2.5 million for goods and works. Incentives to individual municipalities range from US\$100,000 and US\$1.2 million, depending on the model selected, its financial efficiency and the size of the municipal capital, as determined by the number of household water connections. The size of the incentive is computed using the following formula: $Z = I * (M+T)$ (see Box 1). I is the maximum incentive available to a municipality that chooses a

Box 1: Incentive calculation

Formula $Z = I * (T+M)$

- Z** : Maximum value of incentive
- I** : Maximum incentive based on number of household connections
- T** : Operating factor
- M** : Degree of delegation in planned model.

Figure 2: Maximum incentives for service delegation (I)



highly autonomous management model and covers at least part of its investment needs through tariff income.

The maximum value of the incentive (I) is multiplied by the sum of two factors: the delegation factor ($M \leq 70\%$) and the operating factor ($T \leq 30\%$). These factors are determined as follows:

- The delegation factor (M) is determined by both the legal structure of the entity charged with service provision (municipal government department, municipal company, mixed capital company or cooperative) and the degree to which this entity outsources service provision to the private sector. Higher levels of legal autonomy from the municipal government and higher levels of private sector participation in service provision lead to higher scores for the delegation factor (see Table 2).
- The operating factor (T) is determined from the operating factor (Co) as shown in Table 3.

Incentive payments are assigned to municipalities as matching grants. In order to access the full incentive (Z), municipalities must contribute an equivalent amount for the goods and works to be procured. After two years of successful operation, the new management model is evaluated once again and – if the new operator has maintained or improved his management indicators – a second incentive payment will be offered to the municipality for additional water and sanitation investments.

Table 2: Delegation factor (M)

Legal organization	Degree of private sector participation in service provision				
	Direct service provision	Partial Outsourcing	Management contracts		Concessions (iii-v)
			Int. (i-iv)	(ii-iv)	
Municipal government	0.00	0.15	0.70	0.70	0.70
Municipal enterprise (Municipal majority in the board of directors)	0.35	0.50	0.70	0.70	0.70
Municipal enterprise (Community majority in the board of directors)	0.40	0.55	0.70	0.70	0.70
Mixed ownership company	0.70	0.70	0.70	0.70	0.70
Community enterprise	0.70	0.70	0.70	0.70	0.70

If $M=0$ or $Co < 0.5$, the municipality is eligible only for technical assistance (no incentive payment)
 i = no commercial risk
 ii = commercial risk

iii = commercial and investment risk
 iv = minimum 5 yr contract
 v = minimum 10 yr contract

Table 3: Operating factor (T)

Co	Co < 0.50	0.5 ≤ Co < 1	1.0 ≤ Co < 1.2	Co > 1.20
T	Only TA	0.00	0.15	0.30

$$Co = \frac{\text{REVENUE FROM OPERATIONS}}{\text{ADMINISTRATION COST + O \& M}}$$

Note: Revenues from operations collected through billing only. The initial estimate of Co for a new service provider is based on consultants' estimates and the tariff published by the municipal government in the official register.

Municipalities interested in accessing PRAGUAS' technical assistance component must demonstrate a commitment to adopting and introducing a new delegated and sustainable management model.

Box 2: Advantages of the technical assistance offered by PRAGUAS

By signing up for the technical assistance component, municipalities get:

- A services evaluation and assessment that covers technical, administrative, financial, commercial and social aspects.
- An estimate of the investments needed to improve water supply services in the municipal capital over the next 10 years.
- Design of a new system management model.
- Technical assistance for optimizing system performance.
- Lower operation and maintenance costs.
- Lower levels of non-revenue water.
- Revised tariff structure.
- Expanded coverage, as well as improved service quality.

Requirements to access technical assistance for service delegation

Municipalities interested in accessing PRAGUAS' technical assistance component must demonstrate a commitment to adopting and introducing a new delegated and sustainable management model. In addition, they must meet the following requirements:

- Sign a technical assistance delegation agreement with MIDUVI.
- Introduce a realistic tariff that covers at least operation and maintenance costs.
- Co-finance the goods and works needed to enhance system performance.

The application submitted to the SAPSRS must be supported by a resolution from the city council in order to ensure that the decision to delegate is supported by both the mayor and the council. In addition, the municipality is required to sign an authorization that allows the Central Bank to deduct the cost of the technical assistance provided by PRAGUAS from scheduled central government transfers to the municipality in case a new management model is not implemented.

Delegating services to autonomous operators

A sustainable transition to a new management model is achieved in three stages:

Stage 1: Evaluation and assessment (2 to 4 months)

In this initial stage, information is compiled in the following areas:

- *Technical:* To determine the present hydraulic and structural condition of each system component.
- *Administrative:* To determine theoretical and actual arrangements for service provision prior to adoption of a new management model.

- *Financial:* To assess the financial viability of current water supply (and sanitation) service arrangements, with special attention to receivables, overdue account balances and outstanding debt obligations.
- *Commercial:* To determine present commercial practices, administrative processing times, volumes of non-revenue water, user cadastre, household connections etc.
- *Social:* Including socio-economic, willingness-to-pay and service perception surveys among key customers whose opinions provide a critical baseline for legitimizing a new management model.

In addition, these assessments include specific recommendations for improvements to be introduced in each of the areas evaluated, as well as proposals for alternative management models based on the results of the social study. This initial stage comes to a close when a new management model is adopted by resolution of the city council.

PRAGUAS assists the municipality throughout the process of model evaluation, assessment, design and new model adoption. The program also supports the municipality in adopting immediate improvement measures that will build popular support for the new management model and increased willingness to pay for higher quality services.

Stage 2: Management model implementation (6 months to one year)

This stage creates the legal instruments required for the municipality to delegate

services under the terms of the management model it has selected. It covers the following areas:

- *Technical:* Detailed design of required investments for improved short-term (three years) system operation, including budgets and implementation schedules.
- *Administrative:* Design of the new service provider, including preparation of the corresponding operational rules and regulations.
- *Financial:* Design of the processes, rules and regulations, ledgers, cost based accounting, and asset valuation systems.
- *Commercial:* Design of tariff scheme (including cross subsidies for low-income consumers), marketing plans and processes.
- *Legal:* Preparation of municipal decrees, agreements, rules and regulations to put the new model into practice and ensure its sustainability.

During this stage, PRAGUAS provides assistance and legal advice for the approval, issuing and publishing of municipal decrees, agreements, rules and regulations to make adopting the new model feasible. It also provides support for preparing bidding documents for goods and works and helps the municipal government to screen and select contractors. In addition, during this stage, the municipality will receive its first incentive payment for water supply investments as well as training for the new provider's personnel using a service management software package developed by PRAGUAS.



Stage 3: Follow up and second incentive payment (at least 2 years)

After two years, the municipality may become eligible for a second incentive payment on the basis of the performance actually achieved by the new management model.

Types of delegation to operators

Management models available to municipalities may be divided into two basic categories⁵:

1. **Delegation to a public operator:** Municipalities delegate service administration, operation, and maintenance to an operator organized with public capital. This is the case of decentralized units within the municipal government, municipal companies (with or without a municipal majority in the board of directors), and state-owned companies.

⁵ Luis Andrade, Asistencia técnica para la delegación a operadores, Agua Yaku #3, Quito, November 2004.

2. **Delegation to a private operator:** Municipalities delegate service administration, operation and maintenance to an operator organized with private capital, either partially, as with mixed-capital companies, or entirely, as with community or private sector operators.

Box 3: Main stakeholders and their roles

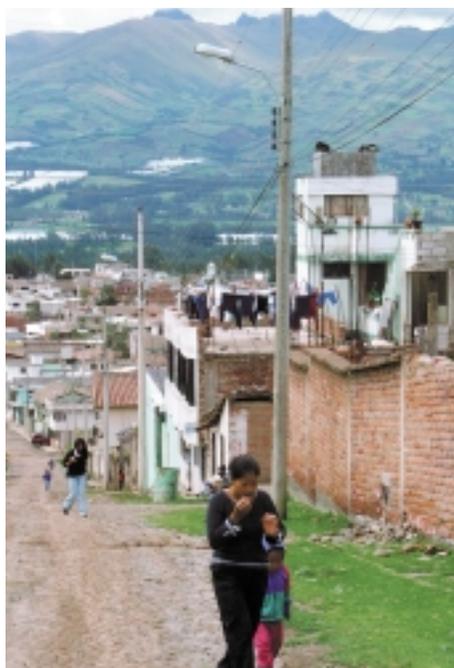
Municipalities retain overall responsibility for seeing that appropriate water and sanitation services are provided and ensure that delegation agreements to operators are complied with. As necessary, municipalities contribute to financing water and sanitation investments. **Communities** pay tariffs that cover costs for quality services. **Operators** provide a quality service in line with well-defined quality, quantity, continuity, coverage and efficiency targets.

To date, 43 municipalities have signed agreements with PRAGUAS for technical assistance towards delegation.

Accomplishments to Date

A nationwide assessment of potable water, sanitation and solid waste.

PRAGUAS' technical assistance program is based on the results of a 1999 nationwide survey by the Sub-Secretariat for Water Supply and Basic Sanitation in 214 municipalities, out of which 191 (89%) indicated that they needed technical assistance, in particular in the commercial and administrative areas of water and sanitation service provision. Survey results provided the basis for quantifying overall demand and the number of municipalities that could eventually get assistance.



Pilot projects

During the design of the PRAGUAS program in 2000, four pilot projects began to design and test the diagnostic tools for the technical, administrative, financial and commercial areas, and to design a methodology suitable for small municipalities throughout Ecuador. The pilots included Caluma, Pedro Moncayo, Quevedo and Tena. The first two have successfully completed stages 1 and 2, while the latter two failed to introduce model changes for political reasons. Based on the pilot experiences, the approach and strategy for stage 1 were supplemented by a social assessment.

Nationwide dissemination of the technical assistance component

To ensure nationwide dissemination of the technical assistance component among municipalities, PRAGUAS organized a dissemination program comprising visits with local mayors and city council members and two international workshops presenting successful experiences with autonomous management models throughout Latin America. The first such workshop was organized by the PRAGUAS project management unit and the World Bank in May 2003 with 168 participants, including 56 mayors, 6 vice-mayors, and 5 council members in addition to municipal water utility managers, and SAPSRS and MIDUVI experts. In January 2005, the second workshop drew mayors and other representatives from 120 municipalities across Ecuador.

Staff training

Achieving the technical assistance component's goals required development of a training program for SAPSRS staff to create awareness of PRAGUAS principles, the delegation component, and strategies for implementing new management models. SAPSRS staff would in turn oversee the work of Delegation Assistance Consultants (CADs) contracted to provide municipalities and enterprises with technical assistance during the service delegation process (stage 1 and 2). Delegation Assistance Consultants were identified using a nationwide call for expressions of interest from firms and associations of individual consultants. An induction workshop for pre-qualified consultants trained 20 of the 24 selected CADs, 18 of which are presently providing TA to municipalities. Both initial induction and training activities for all actors (including SAPSRS staff, CADs, municipal authorities and personnel from the new service providers) is provided continuously.

Arrangements for Monitoring and Evaluation

A water sector information system (SISASAR) is under development that will measure improvements in coverage, service continuity, management quality, production costs, and other key service provision variables.

Service management software

To provide for easier billing and accounting by the new autonomous providers, PRAGUAS has designed and distributed

a service management software package to operators free of charge. Running the software requires a service cadastre including data on users, locations, metered consumption, property history, number of household members per connection, and records on household water meter age. The software package distinguishes expenses by type and identifies what areas are receiving the largest investments. It also simplifies updates to user cadastres through its networks and systems inventory and generates customer invoices in line with Ecuadorian tax requirements.

The case of six municipalities

To date, 43 municipalities have signed agreements with PRAGUAS for technical assistance towards delegation. Four municipalities have dropped out of the program for a variety of reasons, including:

- Concern by municipal authorities' about losing control over water and sanitation services.
- Unwillingness to introduce tariffs consistent with long run marginal costs.
- Unwillingness to implement the recommendations of the stage 1 assessment.

As a result of the above experiences, municipalities are now required to sign an agreement authorizing the Central Bank to deduct the cost of the technical assistance provided by the program from their scheduled central government transfers should they fail to delegate service provision after the stage 1 assessment.

Presently ten municipalities are receiving technical assistance under stage 1, 20 are in stage 2 and six in stage 3. The experience of the six municipalities that have successfully concluded the delegation process is profiled below.

Cayambe (Pichincha Province)

Cayambe's mayor Diego Bonifaz recalls that the locality chose to join the delegation component because PRAGUAS was the only body capable of providing free technical assistance and financing for the works needed to improve services which were on the verge of collapse in 2000. The municipality chose to create a municipal company with a municipal majority in the board of directors (three municipality members and two community members). Higher tariffs have promoted a culture of responsible water use, with less residential leakage and reduced use of potable water for irrigation. The system's water storage capacity has grown by 2500 m³, and household metering has grown to almost 100%. Household meter readings are outsourced to ensure transparent and efficient bill collection. A parallel environmental sanitation program has been introduced to address the needs of 25 city districts or "barrios" that lacked sanitation services before PRAGUAS. Building on the success with water and sanitation service management, the municipal government has recently commissioned the municipal company to take on responsibility for solid waste management services as well. After receiving a "best practice award" in the water and sanitation services category of a competition organized by several government agencies and interna-

Background data: Cayambe
Population: 34,000 inhabitants

Potable water service	Before	After
Management scheme	Municipal department	Municipal enterprise with municipal majority in the board of directors
Number of household connections	3,503	4,561
Coverage	65%	98%
Tariffs (residential)	0,034 \$/m ³	0,10 \$/m ³

PRAGUAS Incentive Payment: US\$ 220,000

tional donors⁶, Cayambe has successfully concluded stage 2.

Pedro Moncayo (Pichincha Province)

One of the pilot projects launched in 2000, this municipality chose to set up a municipal company with a community majority in its board of directors. In addition to two municipal government representatives, the board consists of representatives from the 5 rural parishes in the canton. Public hearings with citizens groups during the design stage forged new relationships between the local government and civil society. This, in turn, gave rise to participatory development plans for improved water and sanitation services that presently cover 90% (water) and 60% (sewerage) of the

⁶ A competition organized by USAID, the Association of Ecuadorian Municipalities (AME), the Ecuadorian Development Bank (BEDE), the National Council of Universities and Polytechnic Schools (CONESUP), the Ecuadorian Association of Provincial Councils (CONCOPE), the German Technical Cooperation (GTZ), and UNDP.

Recent surveys reveal that residents in the city center now enjoy 24 hour a day service and perceive a marked improvement in service quality.

Background data: Pedro Moncayo
Population: 12,000 inhabitants

Potable water service	Before	After
Management scheme	Water Resources Directorate of the Municipal government	Municipal enterprise with a community majority in the board of directors
Number of household connections	1800	2100
Coverage	77%	90%
Rates (residential)	0,014 \$/m ³	0,14 \$/m ³
PRAGUAS Incentive Payment: US\$ 129,000		

population. The most innovative element of the Pedro Moncayo model, however, involves its delegation of service provision to a private operator. The municipal company, (made up of a general manager, a technical director and an accountant) hired a private operator under a competitive tender to carry out a series of system improvements and, subsequently, to operate and maintain both the main transmission pipeline and the water distribution system in the municipal capital for a period of five years or the sale of five million cubic meters of water, whichever came first. In addition, the private operator is required to maintain the sewerage system in the municipal capital and to sell bulk water to the water boards of several rural communities along the main pipeline. Within these rural communities, water distribution remains the responsibility of the local water management boards. Prior to the changes, non-payment rates for services had risen to 74% but have

now fallen to about 30%. Finally, the new tariff structure includes a surcharge to capitalize a forestry fund designed to finance reforestation as well as watershed and micro-watershed conservation plans aimed at preserving the water source.

Pujili (Cotopaxi Province)

Background data: Pujili
Population: 14,000 inhabitants

Potable water service	Before	After
Management scheme	Municipal Department	Municipal enterprise with a community majority in its board of directors
Number of household connections	2550	3000
Coverage	75%	88%
Rates (residential)	0,008 \$/m ³	0,120 \$/m ³
PRAGUAS Incentive Payment: US\$ 162,000		

Pujili chose to organize a municipal company with a community majority in its board of directors. As in other municipalities, it was also necessary to organize a special campaign to create a culture of payment and raise community awareness about the necessity of household water meters. Before the changes were introduced, the annual residential tariff was US\$6 and 80% of household meters were out of order.

The new municipal company has shown particular sensitivity to customer satisfaction. Every 15 days, the company surveys users about their perception of service quality. Recent surveys reveal that residents in the city center now enjoy 24 hour a day service and perceive a marked improvement in service quality.

Guaranda (Bolivar Province)

The municipality of Guaranda chose to decentralize services and to structure a municipal company with a community majority in its board of directors. The transition process took longer than expected, however, due to obstacles in transferring municipal personnel to the new company. Services had previously been rendered by the potable water directorate of the municipal government where excess staff was shared with other municipal directorates.

Background data: Guaranda
Population: 20,000 inhabitants

Potable water service	Before	After
Management scheme	Municipal Directorate	Municipal enterprise with a community majority in its board of directors
Number of household connections	3,800	4,620
Coverage	78%	95%
Rates (residential)	0.03 \$/m ³	0,07 \$/m ³
PRAGUAS Incentive Payment: US\$ 191,000		

Negotiations are now underway to redeploy the most highly skilled municipal staff to the new company. Unfortunately, resources will not be fully available to pay competitive salaries and benefits until new tariffs come into full force at 0.07 \$/m³ (for water) and 0.05 \$/m³ (for sewerage).

The financial incentive available under the PRAGUAS program will be used to contract works designed to improve network hydraulics by dividing the network into three independent pressure zones and installing pressure reduction valves. Once works are concluded, the new tariff schedule will come into force. As in other experiences, massive sensitization and education campaigns are required to raise customer awareness about appropriate water use.

Caluma (Bolívar province)

Caluma was among the first municipal pilot experiences involving the PRAGUAS technical assistance component. The municipality adopted a mixed-capital, municipal/community management model with a 51% municipal government contribution to the company's capital and a 49% community equity stake from in-kind contributions by the users' association.

Newly approved tariffs have been introduced only partially, as all users are presently charged a fixed monthly rate of US\$1 but the additional cost for each cubic meter consumed is not yet assessed. Once new household meters are installed and service continuity improves, an additional volume-based tariff will be charged.

Background data: Caluma Population: 12,000 inhabitants		
Potable water service	Before	After
Management scheme	Potable Water Department	Mixed-capital company
Number of household connections	1,320	1,600
Coverage	78%	95%
Rates (residential)	\$ 0.50 average monthly fixed rate	Fixed charge: \$1 + 0,06 \$/m ³ + 10% for sewage
PRAGUAS Incentive Payment: US\$ 104,000		

Echeandia (Bolívar Province)

Background data: Echeandia Population: 11,000 inhabitants		
Potable water service	Before	After
Management scheme	Potable water department	Cooperative
Number of household connections	1,100	1,500
Coverage	72%	98%
Rates (residential)	Fixed charge: US\$ 0,5 monthly	0,09 \$/m ³
PRAGUAS Incentive Payment: US\$ 139,000		

Echeandia chose a cooperative to operate its water and sewerage services, thereby enhancing citizen involvement and building popular support for the change in management and a new tariff schedule. The management contract extends over 10 years with the first year being a transition phase. During this phase the municipality will subsidize the cooperative's operations until it can sustain itself through realistic tariff charges. A Japanese government donation obtained directly by Echeandia allowed for the installation of 1500 household water meters free of charge, significantly improving tariff collection. Measures such as cutting off services for non-payment and publishing lists of debtors have cut non-payment to 24% from levels near 100% in the city center. Echeandia also received a "best sector practices award" for improved water and sewerage services under a competition organized by several government agencies and international donors.

Lessons learned

Although it is too early to fully evaluate the performance of new service providers (cooperatives, mixed-capital companies or municipal enterprises), several lessons can be drawn about the delegation process itself:

- Combining technical assistance with financial incentives to encourage municipalities to adopt improved management models and cost-recovery tariffs for their water and sanitation services is key.
- Providing technical assistance for delegation required identifying and training Delegation Assistance Consultants

ABOUT THE SERIES:

WSP Field Notes describe and analyze projects and activities in water and sanitation that provide lessons for sector leaders, administrators, and individuals tackling the water and sanitation challenges in urban and rural areas. The criteria for selection of stories included in this series are large scale impact, demonstrable sustainability, good cost recovery, replicable conditions, and leadership.

(CADs). SAPSRS's role is to oversee their performance and to provide direct technical assistance only in those municipalities that are either too remote or too small to attract private TA consultants.

- Tariff increases can be implemented successfully where service quality improves visibly. Tariffs can be increased in the short term to cost recovery levels if communities understand the need for the increase.
- Appropriate financial mechanisms are needed to recoup the expenses incurred

in providing technical assistance to those municipalities that fail to implement delegated management models.

- It is important not to steer municipalities towards a single model for service provision. Forcing municipalities to adopt any one model (whether private or public) is likely to engender resistance by municipal governments and communities. For this reason, PRAGUAS offers municipalities a menu of models, both public and private.

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