MANAGEMENT MODELS FOR SMALL TOWNS
Management Contract in Marinilla, Colombia

Daniel Rivera

Abstract

This case study documents a successful management model using private sector participation for adequate provision of water supply and wastewater services in Marinilla, Colombia. Located 30 miles from Medellín, Marinilla has a population of 26,000. Although Colombia transferred responsibility for water supply and sanitation (WS&S) services to municipalities in 1987, the regional agency of ACUANTIOQUIA continued to operate the system in 40 municipalities, including Marinilla. In 1997, ACUANTIOQUIA awarded a management contract to CONHYDRA, a domestic private sector company, to manage services in Marinilla and six other municipalities.

After two and a half years of coordinated work between the municipality and CONHYDRA, services have improved. An additional 3,500 people have been connected to the system. Water service, treatment, and quality have been upgraded, unaccounted-for water has decreased, and customer satisfaction has improved. The existing infrastructure has been upgraded and a long-term investment program has been developed with the first phase currently being executed.

Marinilla provides an excellent example of the potential for private sector participation in municipal water supply and wastewater. The case study discusses the factors that need to be addressed for the model to be sustained and replicated in other municipalities in Colombia. Marinilla represents a valuable example of increasing community participation in government decision-making. Despite practical and political problems associated with decentralization in Colombia, strong evidence exists that local communities are capable of organizing accountable institutions, reducing political interference, and promoting good government practices for the benefit of their citizens.

1. Background and Context

Colombia’s Water Supply and Sanitation Sector

In 1999 Colombia had a population of 42 million and a gross domestic product (GDP) of US$87 billion. (GDP per capita is US$2,093.) The water sector in Colombia is organized in a complex structure with many different institutional actors. It consists of about 1,800 water utilities, and most of these companies are publicly managed. About 45 large companies operate in cities with more than 100,000 inhabitants, while the vast majority of water utilities are located in small towns, villages, and rural areas.

Municipal responsibility for provision of water supply and sewage services began in 1987; however, despite the progress achieved, decentralization efforts are far from consolidated.
Politicization of management and conflicting roles assigned to the companies have contributed to inefficient and overstuffed operations, as well as to insufficient funds available for system maintenance and/or quality improvements. It is estimated that, on average, 90% of the total revenues are used to cover operational costs; the rate of collection is below 78%, and water losses are around 45%. Wastewater treatment has been neglected for years.

Although all these inefficiencies offer great potential for improvements through private sector involvement, only a few groups of mid-sized cities—Cartagena, Barranquilla, Tunja, Palmira, and Montería—have initiated processes to attract private sector participation in the form of management or concession contracts.

**Coverage Levels**

Nationally, potable water coverage in Colombia is about 76%. Although water supply coverage has increased significantly over the decades, it is estimated that 10 million people (24% of the population) still lack access to water services. Total sewage collection coverage is estimated at 64%, which means that more than 14 million people lack access to adequate sewerage service. Only 5% of the population has access to wastewater treatment. Figure 1 shows the evolution of water supply and sewerage coverage over the last 30 years.

![Figure 1. Colombian Water Supply & Sewerage Coverage](image)

Coverage figures hide problems with service and water quality. Official data estimates that only 630 out of 1,090 municipalities currently have a potable water treatment plant. In addition, it is estimated that only 60% of water distributed in urban areas meets the standards defined by the Ministry of Health.

Differences in water supply coverage between urban and rural areas are striking. Urban water coverage averages 90%, while coverage in rural areas remains significantly low at nearly 44% with poor quality of service. Urban sewage collection coverage has remained constant at 80% over the last 12 years, while only 37% of rural dwellers have access to an appropriate sewage collection system.
Wastewater treatment has been a low priority in Colombia. Only 90 (or 8%) of the country’s 1,090 municipalities have sewage treatment plants in operation. The share of collected sanitary sewage receiving any treatment is below 5%. Most municipal collection systems simply discharge sewage directly into rivers or other bodies of water.

**Water Sector Financing**

Funding for the WS&S sector in Colombia has increased from 0.4% of GDP in 1993 to 0.7% of GDP in 1999, i.e., from US$250 million in 1993 to US$600 million in 1998 and 1999. The new National Water and Sanitation Plan 1998-2002, called *Change to Build Peace*, envisages average annual investments of US$650 million.

Historically, most funding has depended on government budget allocations; central government grants and legal transfers to municipalities\(^1\) have accounted for the major share of total funding (60%). Less than 30% of funding has come from tariffs. As a response to the severe fiscal restrictions faced by the Colombian economy over the last three years, the new approach makes an attempt to reverse this historical trend. Although the government’s contributions are expected to decrease, the main sources of investment will focus on utilities’ internal cash generation and local government funds coming from federal government transfers.

Private capital investment in the sector has gradually increased. Private investment in water projects was US$3 million in 1995, and increased to nearly US$104 million in 2000.

**The Legal and Regulatory Framework**

Since the end of the 19th century, Colombia has adopted a centralized model as a valid alternative to help consolidate national institutions, develop the industrial sector, and build a base of human and physical capital. By the early 1980s, however, the highly interventionist approach of the central government as regulator and producer of goods and services revealed conclusive signs of exhaustion. The centralized scheme became excessively inflexible and bureaucratic, contributing to serious administrative failures; corruption; inefficient allocation of resources; curtailment of fiscal, political, and administrative autonomy for regions; increasing violence; and economic and social stagnation.

In an attempt to increase productivity and international competitiveness and to restore the legitimacy of the political regime, Colombia adopted a new constitution in 1991 that established the foundation for modernization of its economic, institutional, and legal structures. The new constitution, and the Public Services Law (142/1994), established a new legal and regulatory framework for public services provision, reinforcing decentralization and encouraging private sector participation in the WS&S sector.

The new institutional framework redefined of responsibilities for WS&S services between the central, provincial, and municipal authorities. The central government now sets policies,

---

1 According to Law 60, 1993, municipalities are obligated to invest at least 20% of the federal government transfers into water and sewerage projects.
regulates, and oversees the water sector, while municipalities are responsible for provision of services and securing investment capital.

Water Pricing System

The Colombian water sector has a complex tariff structure comprised of a fixed fee plus three different levels of per unit rates for consumption. Residential customers are divided into six socioeconomic categories. The pricing system is set so that high-income payers (10% of users) subsidize lower income users. This tariff structure has resulted in water utility deficits, creating a severe obstacle for sector investment.

Historically, tariff levels have been below actual costs. Efforts to rectify this situation have not been successful. Currently, tariffs paid by low-income users barely cover one-third of service costs. According to the Public Services Law, water companies should achieve full cost recovery by 2001; however, municipalities have cited socioeconomic and political impediments to meeting the deadline, and the central government extended it until 2004. Most municipalities, particularly small and medium-sized, will continue to have problems with implementation of required tariff levels.

The Public-Private Management Model in Marinilla

Given the institutional background above, Marinilla was selected as an interesting case study for three main reasons:

- It represents a successful management model for water services provision in small municipalities. This model could be replicated in other towns in Colombia and elsewhere.

- Marinilla also represents a valuable example of cooperative work between the local authorities and the private sector for the benefit of the community.

- This case shows how important and constructive community participation can be in strengthening the decentralization process.

Marinilla is located at the northwest point of Colombia in the province of Antioquia, 30 miles from the capital of Medellín. It has a population of 26,000 inhabitants, with an average growth rate in the last three years of 3.5%. The local economy is based on agriculture, especially vegetables. Although a recent dip in Colombia’s macroeconomic performance has increased the unemployment rate, local industrial corridors have mitigated the impact on the economy and social structure. Compared with other small cities in Colombia, Marinilla has a relatively high level of development and its income level is above the national average.

Marinilla belongs to a privileged group of municipalities that have a good record of administrative and managerial capacity. Its proximity to Medellín contributes to its ability to offer excellent educational prospects to public leaders and local citizens. Mayors are democratically elected for three year terms. The Municipal Council, composed of 13 members, exercises political control over the mayor.
Management Contract in Marinilla, Colombia

By the early 1980s, it was clear that Colombia’s centralized approach had failed to deliver adequate WS&S services to communities. After decades of centralized management, the national water company, INSFOPAL, entered into an unsustainable administrative and financial crisis that led to its liquidation in 1987. Responsibility for water service provision was transferred to the municipalities, while most of the regional entities that INSFOPAL had controlled were transferred to provincial governments.

ACUANTIOQUIA, a regional agency created in 1960, was responsible for the administration, operation, and financing of water systems in more than 40 municipalities in the province of Antioquia. Initially proficient, ACUANTIOQUIA’s performance was gradually affected by inefficient administrative practices. The curtailment of INSFOPAL’s financial support further reduced ACUANTIOQUIA’s ability to meet the increasing demand for adequate services. In 1995, the provincial government decided to initiate the liquidation of ACUANTIOQUIA, transferring the responsibility for service provision to the municipalities. Since then, ACUANTIOQUIA’s role has been valuation of the operative assets utilized by the municipalities and preparation of bidding documents to select qualified operators in several municipalities under its jurisdiction.

Between 1996 and 1997, ACUANTIOQUIA developed about 40 bidding processes aimed at selecting specialized operators to manage — for a 15-year period — all the water and sewerage systems that remained under its responsibility. CONHYDRA, a newly formed private company, was awarded seven different contracts to operate systems in seven municipalities. Marinilla was one of these municipalities.

What is interesting about Marinilla’s case is that both the local authorities and the community were interested in participating in the decision-making process since it directly affected their lifestyle. Residents argued that they were not willing to accept ACUANTIOQUIA’s decision to sign a contract directly with a private operator without first discussing the terms of that contract. The representatives of ACUANTIOQUIA discovered that the community was surprisingly mature and organized, had a high sense of social commitment, and was willing to discuss, through participatory democratic mechanisms, the best alternative to secure an efficient provision of services.

As a result of those discussions, in 1997 the local authorities in Marinilla, backed by the community, decided to support a management contract between ACUANTIOQUIA, as the owner of the physical infrastructure, and CONHYDRA, as the private operator. The major change the municipality introduced was related to limiting the contract period to five years, with the option to extend the contract if the operator met coverage goals and service quality standards. The contract was signed in March 1997.

The management contract clearly defines and limits the role of ACUANTIOQUIA as a technical auditor. The contract follows the guidelines established in the national constitution, which assign overall responsibility for efficient service provision to the head of the municipality. The local authorities are in charge of planning, financing, and monitoring operator performance and
supervising the accomplishment of the management contract objectives. ACUANTIOQUIA retains ownership of the system until it transfers the assets to the municipalities.

ACUANTIOQUIA is committed to completing its own liquidation process. To reach this goal, ACUANTIOQUIA must set up appropriate mechanisms to transfer its assets to the municipalities, either by selling or ceding them. Current operating contracts would be transferred either to the municipalities themselves or to new water companies they create.

2. **Scope of Services Provided**

Since March 1997, CONHYDRA has administrated, operated, and maintained the water and sanitation systems in Marinilla and executed expansion programs to improve coverage and quality of service.

Water coverage in Marinilla reaches 99% of the population. Existing infrastructure allows pumping raw water from two intakes to a conventional treatment plant with a capacity of 90 liters per second (lps). Potable water is stored in a 1,000 m$^3$ storage tank. This system serves nearly 7,000 water connections. CONHYDRA has prepared a US$42,000 project to increase treatment production capacity to 140 lps. This project has been postponed to 2001, pending approval of a tariff increase. All connections are metered, and service is provided 24 hours a day.

Marinilla has a sewerage network system that serves 90% of the population; however, the city does not have a wastewater treatment infrastructure. Sewage is discharged directly into the creek that goes across the town through more than 20 disposal points. As a result of effective action taken by the local authorities and with the technical support of CONHYDRA, the Regional Environmental Agency, CORNARE$^2$, recently approved a US$950,000 grant to finance the construction of a sewage collector system and a 70 lps primary wastewater treatment plant. This plant began operation at the end of 2000.

3. **Management and Coordination**

CONHYDRA is a private Colombian company that was created in 1997. It successfully manages and operates water systems in Marinilla and six other small municipalities located in the province of Antioquia$^3$. CONHYDRA’s organizational structure has two major components: headquarters staff, located in Medellin, in charge of the managerial, strategic, and administrative activities; and the municipal offices, responsible for operative and commercial activities. The municipal office in Marinilla has 16 employees, including the general manager, consumer complaints office, three plant operators, a technician expert in repairing meters, and some workers. A local group of women trained by the company is in charge of the billing distribution

---

$^2$ CORNARE (Corporación Autónoma Regional) is one of 37 regional environmental agencies in Colombia. These agencies are responsible for the implementation of environmental policy, defining environmental standards, setting targets, billing and collecting fines, and financing wastewater treatment facilities.

$^3$ The seven WS&S systems awarded to CONHYDRA, and still under its operation, are Marinilla, Puerto Berrío, Turbo, Chigorodó, Sonsón, Mutatá, and Santa Fe de Antioquia.
and meter reading process. Including headquarters personnel, CONHYDRA has 3.1 employees per 1,000 connections.

Relations between CONHYDRA and the municipality have been productive and well balanced. The private operator autonomously makes decisions about operational and managerial issues and carries out initiatives for service improvement. General policies, planning, and investment programs are discussed and agreed to at the Executive Board level. The mayor presides over the board, which convenes every two weeks. The board makes decisions by majority vote. When the board’s decisions require financial or political approval, the mayor presents the issue to the Municipal Council. For example, the Council must approve the annual budget distribution, as well as any bidding processes for contracts over US$25,000. Part of the board’s success is that, to date, technical criteria and political autonomy have guided its decisions. Beside the official board meetings, CONHYDRA promotes periodic informal meetings with the Municipal Council and key utility staff. CONHYDRA prepares technical reports that are discussed with the municipal authorities. They also organize meetings with community leaders. CONHYDRA provides timely information to consumers about investment progress, tariffs, and performance indicators, they also organize public education campaigns through the media and visit schools and community groups. All these activities contribute to a productive working environment; potential problems are nipped in the bud before they intensify.

4. Financing and Cost Recovery

CONHYDRA’s total billing in 1999 was US$450,000, of which US$375,000 (84%) was collected. Revenues covered the operational and administrative costs; in addition, $80,000 was used to amortize previous loan operations and to invest in system infrastructure.

In 1998, the municipality, with the technical support of CONHYDRA, undertook a US$250,000 emergency investment program to overcome the water rationing instituted in response to a drought caused by the El Niño phenomenon. The municipality financed US$150,000 of the emergency program, and the remaining US$100,000 was received through a short-run credit operation on behalf of CONHYDRA, to be paid from the annual operational income.

Also in 1998, Marinilla completed studies for the Water and Sanitation Master Plan, which is designed to cover service demand over the next 20 years and to maintain and replace the aging infrastructure. Total investment needs have been estimated at US$5 million.

The municipality is currently executing the initial phase of the master plan with investments of around US$2 million. This first phase consists of repairing and rehabilitating the water and sewerage networks in Marinilla’s downtown area; increasing the treatment capacity of the potable water plant from 90 to 140 lps; and constructing a sewage collector and new primary wastewater treatment plant. Sources of funds are as follows:

---

4 The mayor of the city chairs the Executive Board, which is comprised of the Secretary of Public Works, the Secretary of Health, the Secretary of Planning, and CONHYDRA’s general manager. The board would be willing to incorporate new members to the committee. New members would have the same duties and rights as the rest of the board.
The Municipality of Marinilla (Central Govt. Transfer) is providing US$ 600,000. CORNARE (Grant) is providing US$ 950,000. The Ministry of Economic Development (Grant) is providing US$ 250,000. CONHYDRA (Short-term loan) is providing US$ 250,000. The TOTAL funding is US$ 2,050,000.

CORNARE and the Ministry of Economic Development are providing grants. (Such grants are assigned only to those municipalities that demonstrate good managerial practices.) Disbursements are conditional on the municipality’s securing other funds adequate to ensure complete financing of the project.

Four key factors have contributed to improved financing conditions in Marinilla: the introduction of a long-term planning concept, the presence of an accountable operator with clear rules of the game established in the management contract, a reasonable cash flow to guarantee credit operations, and financial incentives (CONHYDRA’s profits) directly related to improvements in operational and financial performance. If CONHYDRA can increase collection rates, reduce unaccounted-for water, and reduce costs, they will increase their profits.

Tariff levels in Marinilla remain below real costs, especially for low-income consumers. Colombian regulations require high income water users to subsidize lower-income users through a progressive tariff structure. According to the national framework, tariffs include a fixed charge and three different strata of increasing charges per unit of consumption. Basic consumption is between 0 and 20 m$^3$/month; medium consumption is between 21 and 40 m$^3$/month; and the highest level is over 40 m$^3$/month. In addition, there are six different strata for residential customers, ranging from low income to high income, as well as separate categories for commercial and public agencies. Each of these categories has a different rate structure based on consumption.

In Marinilla, poor consumers pay only 34% of the average cost of services. Given the high proportion of low-income consumers, financial resources for investment are limited. In most cases, service expansion depends on the availability of external funds. Current tariffs for a typical mid-income consumer are shown in Table 1.

<table>
<thead>
<tr>
<th>Fixed Charge</th>
<th>Average Price per m$^3$ of Water</th>
<th>Average Monthly Bill (Water and Sewerage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>US$ 2.50/month</td>
<td>US$ 0.15/m$^3$</td>
<td>US$ 8.25</td>
</tr>
</tbody>
</table>

Table 1. Water and Sewerage Tariff Levels in Marinilla

In theory, CONHYDRA can increase revenues by requesting tariff increases or increasing collection rates. If it can demonstrate that the additional revenues will be used for new investments or rational cost increases, the National Water Regulatory Commission (CRA) will...
approve the request. However, since ACUANTIOQUIA is still the legal owner of the assets, it is the only entity that can request a tariff increase. CONHYDRA, ACUANTIOQUIA, and the municipality are working together to request an increase in 2001.

5. Legal and Regulatory Framework

Individual municipalities and provincial or central government agencies have traditionally shared the task of providing WS&S services in Colombia. The 1991 constitution and the Public Services Law (142/1994) gave responsibility for provision of these services to municipalities. Based on criteria of efficiency and quality of service, the law establishes the principles of competition and regulation of monopolies and promotes the participation of private sector investors and operators. The regulatory framework defines the rules for private sector participation (PSP) in the water sector to maximize competitive forces through transparent bidding and an award process. It establishes minimum requirements for contracts and provides a coherent set of performance indicators that serve as the basis for contract supervision and control and tariff setting. The framework also provides consistency between the private sector contracts, municipal development plans, and sector policy.

Under the new framework, the Ministry of Economic Development sets policies and sector strategies, defines technical conditions for the WS&S services, and executes government programs. The Ministry of Finance and the National Planning Department establish criteria for the allocation of public resources, provide overall follow-up, and monitor the development of water projects. The National Water Regulatory Commission (CRA) oversees monopolies, promotes competition, defines tariff methodologies, and approves tariff increments based on standard formulas and investment plans submitted by the operating companies. These methodologies rule all of the country’s private and public utilities.

The Ministry of the Environment defines environmental policies. Regional autonomous environment corporations throughout Colombia (37 currently exist) are in charge of implementing policy, setting environmental targets (e.g., water quality and wastewater discharges), and billing and collecting retributive and compensatory taxes. The superintendent of public services supervises the performance of water companies, public as well as private sector, and enforces regulations. Finally, the Ministry of Health defines and oversees drinking water quality standards.

Despite significant efforts to build a sound, operative institutional and legal framework, the performance of the newly created regulatory agencies has thus far been mixed. Although central government agencies have set policy initiatives to encourage sector efficiency, their track record for actual implementation of these policies has been poor. Political interference, institutional fragmentation, and overlapping responsibilities have resulted in limited benefits.

The low tariffs and the resulting financial restrictions that impede greater improvements in Marinilla illustrate the nature of the institutional and legal conflicts. In an attempt to follow the law and the regulatory framework, municipal authorities as well as the private operator have requested authorization from the CRA to gradually implement tariff increases. Tariff increases
are backed by various surveys that demonstrate that consumers are willing to pay higher tariffs if they are accompanied by service improvements.

To date, the CRA has denied any authorization to raise tariffs, arguing that ACUANTIOQUIA, as the legal owner of the assets, is the only entity allowed to request tariff increases. However, ACUANTIOQUIA is not interested in requesting tariff increases because, first, its role is only as an auditor, and it is not responsible for the management and systems operation; and, secondly, it is under a liquidation process. These institutional and legal barriers reveal the urgency of transferring the assets to the municipality and completing the liquidation of AQUANTIOQUIA as a fundamental step to facilitating the long-term financial sustainability of Marinilla’s public-private management model.

6. Environment and Health

Until recently, Colombia had no clear regulations governing either the use of water from various sources or wastewater discharges into these bodies. This institutional vacuum resulted in low investment in and degradation of the environment. In 1993, with the creation of the Ministry of the Environment, prospects for upgrading and protecting the environment improved.

In April 1997, decree 901 established cost-effective policy instruments to improve the quality of water resources in Colombia. The main economic instrument to induce the usage of environmental technologies is the retributive tax. Environmental targets are set by agreement between CORNARE and each municipality for a five-year period. Rates are reviewed every six months to encourage water utilities and industries to evaluate the convenience of paying the taxes, or building their own treatment facilities at a lower cost. Regional corporations collect the retributive tax, which must be paid by anyone who uses water bodies for dumping. According to this regulation, all users in Marinilla currently pay CORNARE a retributive tax of US$ 0.40 per month. CORNARE invests these resources in the construction of treatment facilities in the municipalities under its jurisdiction.

Since 1993, the municipality of Marinilla and CORNARE have reforested the region’s basin. More than 38 hectares have been recovered, and negotiations are underway to buy and reforest 15 additional hectares to protect the river basins.

During its two and a half years of operating Marinilla’s water and sanitation systems, CONHYDRA has always met high quality standards for potable water. Improved operations and maintenance has upgraded the potable water in Marinilla since CONHYDRA took over. Qualified personnel operate a new water quality laboratory and equipment for quality control of drinking water. Standardized procedures and systematic daily sampling tests in both treatment facilities and the water network guarantee excellent quality of water and compliance with the government’s policy on health.
7. Performance

The provision of WS&S services in Marinilla has improved since CONHYDRA took over operation. In March 1997, 21,600 people had connections to piped water and 19,500 to sewerage. By January 2000, an additional 3,500 of the city’s inhabitants had been connected to the water system (a 15% increase). Sewerage coverage has increased by 5%, an increase of 700 connections, or 3,000 people. The quality of potable water also has been upgraded. Water pressure has been optimized and physical leakage has diminished. Unaccounted-for water has decreased from 46% to 41% in the last two years, and it is expected to drop to below 35% by 2001. Service is provided 24 hours per day. CONHYDRA has also improved customer service. According to the last surveys, user satisfaction is at 93%.

CONHYDRA has strived to maintain appropriate performance indicators in different areas. As a result of this effort, it was awarded the international certificate of quality insurance, ISO-9001, in February 2000. Relevant performance indicators are presented in Tables 2, 3, and 4. Multiple reasons can be attributed to its success. The company has optimized technology, laid off unproductive staff, implemented outsourcing strategies in meter reading and billing, reduced unaccounted-for water, and improved collection rates. Although it was beyond the scope of this case study to assess the situation in the six other municipalities where CONHYDRA operates, its performance is considered to be effective.

Table 2. CONHYDRA Technical Performance

<table>
<thead>
<tr>
<th>Marinilla</th>
<th>March 1997</th>
<th>1999</th>
<th>2000 (Projected)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>n.d.</td>
<td>25,280</td>
<td>26,070</td>
</tr>
<tr>
<td>Number of water connections</td>
<td>5,880</td>
<td>6,754</td>
<td>7,106</td>
</tr>
<tr>
<td>Water supply coverage (%)</td>
<td>94%</td>
<td>98%</td>
<td>99%</td>
</tr>
<tr>
<td>Sewerage coverage (%)</td>
<td>85%</td>
<td>88%</td>
<td>90%</td>
</tr>
<tr>
<td>Metering (%)</td>
<td>84%</td>
<td>93%</td>
<td>100%</td>
</tr>
<tr>
<td>Water produced (million m$^3$/year)</td>
<td>2.0</td>
<td>2.06</td>
<td>2.12</td>
</tr>
<tr>
<td>Unaccounted-for water (%)</td>
<td>46%</td>
<td>41%</td>
<td>35%</td>
</tr>
<tr>
<td>Continuity of service (%)</td>
<td>83%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Consumption per connection (m$^3$/month)</td>
<td>n.d.</td>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

Source: CONHYDRA

Table 3. CONHYDRA Financial Viability

<table>
<thead>
<tr>
<th>Marinilla</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual billing (US$)</td>
<td>448,000</td>
</tr>
<tr>
<td>Collection rate (%)</td>
<td>84%</td>
</tr>
<tr>
<td>Total annual revenues (US$)</td>
<td>375,000</td>
</tr>
<tr>
<td>Operating cost recovered (%)</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: CONHYDRA

5 Tables 3 and 4 have no data with which to make comparisons.
Table 4. CONHYDRA Commercial Performance

<table>
<thead>
<tr>
<th>Marinilla</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of billed connections</td>
<td>5,673</td>
</tr>
<tr>
<td>Consumer complaints</td>
<td>697</td>
</tr>
<tr>
<td>Consumer complaints resolved</td>
<td>697</td>
</tr>
</tbody>
</table>

Source: CONHYDRA

8. Factors that Contributed to Success

Ironically, one of the main factors in the success of Marinilla’s public-private management model is related to the institutional and financial crisis of the centralized model Colombia had adopted to provide public services. The failure of the centralized model encouraged small municipalities to create alternative and innovative proposals focused on guaranteeing more and better services to an increasingly demanding population. Most municipalities, however, have had difficulty breaking the habit of dependence. The transition to a decentralized scheme has been erratic and costly, while the capacity of central government entities to guide the process has lagged behind expectations. Only a limited group of cities has been able to take advantage of these difficulties and successfully face the challenge of decentralization by increasing autonomy, fostering community participation, and designing and implementing their own suitable solutions.

Three factors positively influenced the institutional and social climate in Marinilla and ensured that local service provision would improve: community participation, municipal administrative capacity, and participation of the private sector.

- **Community participation.** Marinilla’s inhabitants are above the Colombian average in level of education and training. The proximity of the town to large educational centers in Medellín (Antioquia’s capital) facilitates access to good education and to elevated standards of living in the region. Both of these factors encourage people to demand reliable public services. Marinilla’s inhabitants know what they want, and they have developed participatory democratic mechanisms to reach agreements to improve their quality of life. CONHYDRA also makes a special effort to provide timely information to the community and to consult regularly with community leaders.

- **Municipal administrative capacity.** The municipal administrative staff in Marinilla is composed of highly qualified technical people, with a clear social interest and commitment. Local authorities are conscious of their capacity and have a strong sense of social responsibility. Marinilla has a social control mechanism along with a community that demands specific results from the local authorities.

- **Private sector participation.** The private operator CONHYDRA is committed to its objective of building and consolidating sound, accountable, and autonomous managerial practices. A well-balanced operation contract clearly defines CONHYDRA’s rights and responsibilities and creates financial incentives to maintain good service standards. The community knows the rules of the game and the company’s service goals. On the other hand, the contract includes penalties associated with service default. Repetitive failure in service standards can
lead to contract termination. In addition, the operator’s performance is closely supervised by the municipality. CONHYDRA is obligated to publish periodic reports about its activities to the community. Good customer service and concrete results have contributed to increased legitimacy and community respect.

9. Prospects of Long-term Sustainability and Replicability

Prospects for Sustainability

Three basic factors have encouraged an increasing number of municipalities in Latin America to look for innovative alternatives to improve coverage and quality of WS&S services:

- Deterioration of existing infrastructure
- Eroded financial condition of most municipalities and public utilities
- Increasing demands of the population for more and better services

There is a growing recognition of the need to overcome the vicious cycle that has characterized the water sector development: low tariffs, insufficient investment and maintenance, poor quality of services, low collection rates, and lack of accountability to consumers. One way to break this cycle is through the creation and strengthening of autonomous entities that have entrepreneurial criteria, are financially sustainable, and adopt clear standards of social responsibility supported by the government.

The gap between an unsustainable and weak situation as seen in many municipalities and adequate service provision indicates that there is great potential to improve the operator’s productivity and social benefits for the community. The managerial model developed in Marinilla has proven to be a practical, realistic option for increased coverage and improved quality of water services. It combines private sector efficiency with effective local control over key decision-making.

This model is not guaranteed to be sustainable, however. The municipality must direct efforts to consolidate the strengths of the management model and overcome the following remaining obstacles and weaknesses:

- **Institutional and legal barriers.** To secure complete autonomy of the municipality and positive results in the long run, it will be necessary to clarify the roles of the municipality and departmental governments in the context of the decentralization process. In Marinilla for example, ACUANTIOQUIA must complete the transfer of ownership of assets to the municipality.

- **Financial restrictions.** The backlog of investment in the WS&S sector is enormous, and annual maintenance requirements are considerable especially in small municipalities. Tariff increases are necessary, although in practice they are limited by the users’ capacity to pay. Private sector involvement can contribute to reducing, but will not eliminate, the need for
government financing and the government’s obligation to develop innovative financial mechanisms and provide guarantees and subsidies when necessary.

- **Political risk.** Although technical criteria have dominated the decision-making process in Marinilla, political interference is an underlying risk. Mayors are elected every three years, and they have a decisive influence on the Executive Board. There is a moderate risk of reversing the reform process under the weight of a populist backlash before the real benefits can become consolidated. Clear, stable rules and balanced contracts will be key factors in minimizing this type of risk.

**Prospects for Replicability of the Model**

Colombia has 1,090 municipalities, 500 of them with populations ranging between 12,000 and 50,000 inhabitants. A great majority of these small municipalities have shown interest in transforming public water utilities and modernizing managerial practices. The municipalities’ increasing interest in improving the provision of water and sanitation services may be channeled and strengthened through the implementation of systematic technical assistance and financial programs designed by the federal government with the support of international agencies.

The following five main stages are necessary to promote the replicability of the Marinilla management model in other mid-sized municipalities and facilitate a successful transition from inefficient public water utilities to autonomous and accountable companies:

- Federal and municipal governments must ensure strong and sustained commitment at the highest political level.

- Private sector participation projects require careful preparation. Governments should finance and facilitate the sound structuring of technical, financial, and legal aspects of sustainable private sector schemes. Developing simple guidelines, model contracts, and standard bidding documents will help to reduce transaction costs. Contracts must be clear and flexible and include incentives and penalties according to the operator’s performance.

- Tariff levels should be consistently evaluated in relation to the population’s financial capacity and realistic investment programs. Governments need to improve the mechanisms for subsidies for the poor and facilitate wider access to the benefits of private sector involvement.

- Governments may have to maintain a financing role in the WS&S sector. The major challenge is to find the right balance between public and private financing and risk sharing. Crucial challenges for national governments and external financial institutions include the development of risk-reduction mechanisms, local capital markets, guarantees that encourage long-term private lending, and alternative financial instruments to provide accessible credit to investors and private operators for at least the first five years of contracts for municipal service provision.
Governments must work effectively to manage consumer expectations. Experience suggests that long-term benefits from private sector involvement take time to become firmly established. To facilitate public acceptance of the reform process, governments should foster community involvement, promote the dissemination of clear and reliable information, and implement adequate supervision and control mechanisms.

* * * * * * * * * *

**Acronyms**

ACUANTIOQUIA  a regional agency created in 1960 to manage water systems in over 40 municipalities in the province of Antioquia

CONHYDRA  a domestic private sector company that operates WS&S services in seven municipalities, Marinilla being one

CORNARE  *Corporación Autónoma Regional* (Regional Environmental Agency)

CRA  *La Comisión Reguladora de Agua Potable y Saneamiento* (National Water Regulatory Commission)

GDP  gross domestic product

INSFOPAL  the national water company (liquidated in 1987)

lps  liters per second

PSP  private sector participation

WS&S  water supply and sanitation