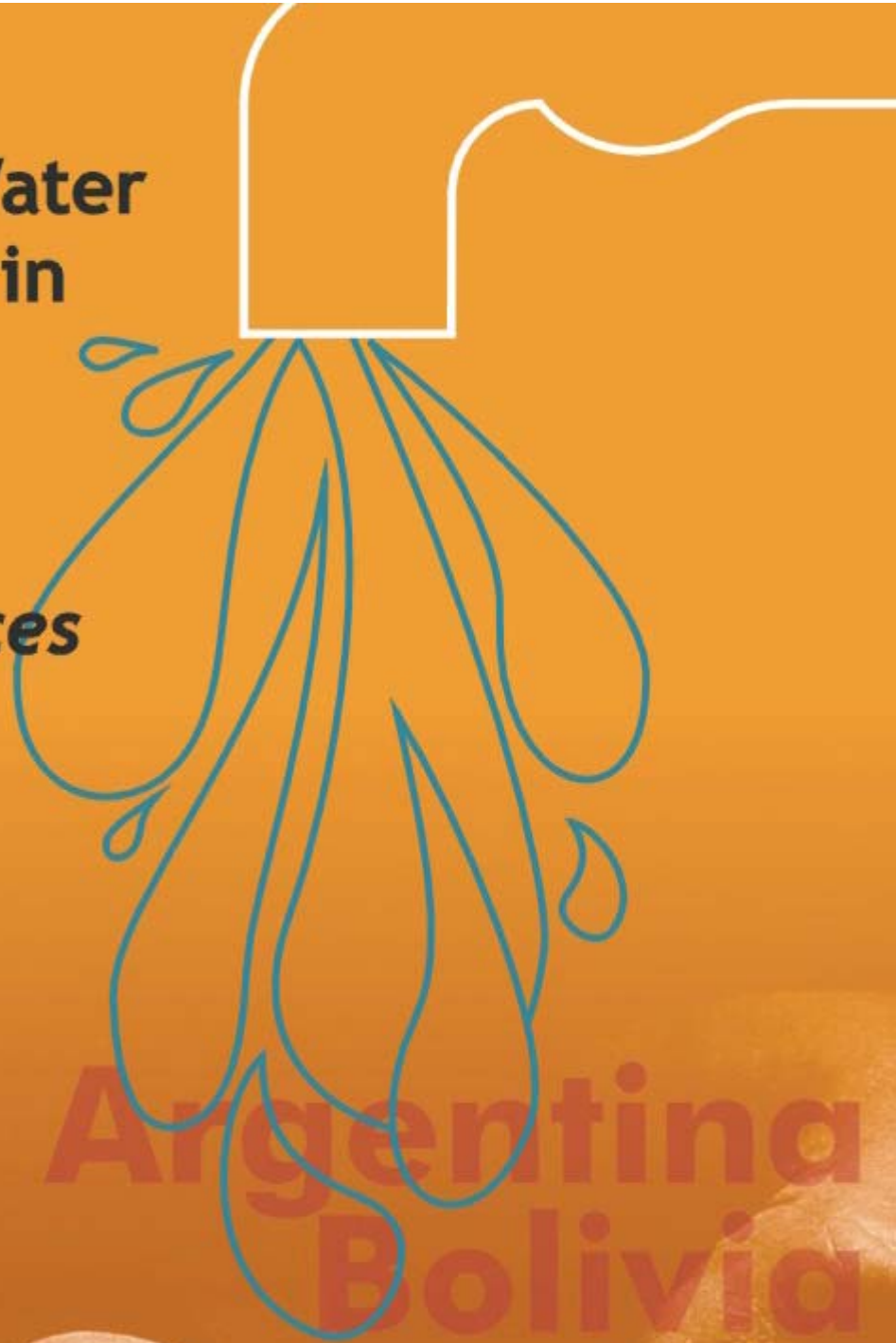


Independent Water Entrepreneurs in Latin America

*The other
private sector
in water services*

by Tova Maria Solo



Argentina
Bolivia
Colombia
Guatemala
Paraguay
Peru




Department of Finance,
Private Sector
and Infrastructure
Latin American Region,
The World Bank

and

Energy and Water Department
Private Sector Development
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Report written by Tova Maria Solo – The World Bank

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Unfortunately it is not possible to list all of those who gave their time and shared their experiences and knowledge to our team. However, of those who stand out in particular, we must acknowledge the support and enthusiasm of the Director of the Water Program in the Colombian Planning Ministry, Luis Fernando Arboleda and his deputy, Luis Fernando Ulloa, now general manager of the water companies of Barranquilla and Soledad respectively, Jorge Triana and Mauricio Lopez of ACODAL, and above all, of Fernando Araujo, Minister of Development for Colombia who put in place a policy to develop small scale water producers. Fernando, I regret to add, was kidnapped in 2000 and is supposed dead. Among the "aguatero" community we must mention Silvio Melgarejo, President of CAPA in Paraguay, Jorge Uribe, of CONHYDRA, Colombia; Chihala Ghassam, President of the Cooperative of el Carmen, Cochabamba, Bolivia, a few of many whose work inspired a re-evaluation of the private water sector in Latin America.

Among the many World Bank colleagues whose help and interest spurred us on we mention Chantal Reliquet, Maria Paniagua and Katia Nemes participated in missions and meetings, Alex Bakalian, first put us in touch with the Aguateros of Paraguay, Menahem Libhaber, whose contacts in Colombia were wonderfully helpful. Guillermo Yepes, Lee Travers, Omar Razzaz, and Vincent Gouarne reviewed the various papers which resulted from the research. Their comments are gratefully acknowledged. Vivien Foster, Marianne Fay, Jonathan Halperin and Jack Stein gave the final push to publish, clearly worthy of a thankful mention.

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Tova Maria Solo
Washington, April 2003

foreword

It is now widely accepted that Small Scale Providers of water supply and sanitation services play an important role in extending access to unserved, mainly poor, urban households outside the reach of public utilities in many developing countries. Although the scale and magnitude of the small scale service market varies from country to country and city to city, recent studies indicate that small scale providers serve about 25% of the urban population in Latin America and East Asia, and 50% of the urban population in Africa. Estimates are as high as 80% for sanitation in urban Africa, and demand for these types of services is growing in excess of 3% per year on average.

Small scale providers come in many shapes and sizes. They range from independent borehole fed networks serving as many as 14,000 households to mobile water tankers serving individual households and institutions. Many have been around for several decades, and some for at least 70 years. However, it was not until 1998, that small scale providers began to gain international recognition as key players in the water and sanitation sector. Until then they were considered a transitory and temporary phenomenon to be ignored rather than supported, as they ran counter to the monopoly service provision model, preferred and desired by many Governments.


The results of a study of the *aguateros* in Asuncion and Ciudad del Este in Paraguay, carried out in 1998 by the Water and Sanitation Program and published here for the first time, found that one third of all water connections serving up to half a million persons had been made in these two cities over the 20 year period preceding the study. These connections had been provided by between 350 and 600 independent *aguateros* at a cost of roughly USD 250 per household, and offered water at a price consistently below the charges levied by the public water company. The study concluded that rather than shun small scale providers, efforts should be focused on learning how best to encourage and support these private sector investments in the provision of water and sanitation services

These findings led to a series of regional studies on small scale providers in Africa, Latin America and Asia that share the following lessons: small scale providers are neither trivial nor transitory, and contrary to popular thinking, are more often

competitive rather than exploitative. Most offer services of a good quality at a price that may be comparable to or lower than that offered by the public utility. Furthermore, they typically operate without external funding – making their own investments in infrastructure; often operate at lower cost – despite the lack of public subsidies; and respond quickly to demand - readily adapting their services to meet consumers needs.

This report outlines the findings of the six-country study of small scale providers in Latin America carried out by the Water and Sanitation Program. The lessons, drawn from Paraguay, Argentina, Colombia, Guatemala, Peru and Bolivia, not only highlight the important role that small scale service providers play in the delivery of services to underserved, primarily poor, households in urban areas, but also underscore the need for policy makers in all countries to “look with a fresh view at all water providers who are investing and active in their cities” and establish a conducive policy and regulatory framework that enables households to obtain access to water and sanitation services from any actor that is able and willing to meet their needs.

Coming at a time when the sector is facing up to the challenge of meeting the Millennium Development Goals, this report is a useful reminder that sector practitioners should remain open and receptive to options that enable us to increase access to water supply services to all consumers. Working with small scale providers may enable us to reach coverage targets faster and more effectively than we would do if we ignored or stifled them. However, in doing so, we should take care to ensure that the actions we take serve only to improve access and affordability to the poor households that we aim to assist.



Jamal Saghir
Director, Energy and Water
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Engineers and historians are increasingly interested in the evolution of water delivery systems and the provision of water and sanitation services. However, only a few users have ever questioned how our public services (water, energy, communications, garbage collection and the like) were managed, let alone wondered about how things might have been different in the past, until privatization began to take hold in the early 1990's. In Latin America privatization of many services met with increasing public resistance leading to a special note of angst in the political dialogue. In most South American countries there are deep rooted convictions that reserve water resources to the public domain, and against the notion that water services should be financially viable and that it could be a profit-making business. However, there are plenty of good experiences in private sector participation in water utility services, from France that has delegated water services to private companies since the 19th century, England that have auctioned off its water utilities in the early 90's, and private sector participation in water utility services Latin America, which provide services to more than 60 million throughout the region, including many small and medium size providers.

Many policy makers, even specialists in water services, do not realize the extent of private involvement in "public" service delivery today. We have always known of the private water truckers working in the shanty-towns or "marginal" communities, when the municipal company is not able to meet the explosive demand of cities. Truckers respond in a costly but timely manner to the demand of those poorest segments of the population that do not have access to the service or of those that while having a connection have unreliable provision. But we know little about other forms of private provision of water services, which, as it turns out, are almost as many and as varied as the locales where they have evolved. This publication, "Independent Water Entrepreneurs in Latin America - The *Other* Private Sector in Water Services" goes beyond the first study conducted by the Water and Sanitation Program in 1998, which documented the experience of the *Aguateros* in Paraguay; and offers a first view of small scale independent providers working in water provision in six different Latin American countries: Argentina, Bolivia, Colombia, Guatemala, Paraguay and Peru.

In the cities reviewed, private providers turn out to reach approximately 25% of the local populations, suggesting that the private sector remains key to provision of water. Sewage collection, treatment and disposal, however, remains a much bigger challenge for small providers given the implicit economies of scale and lower willingness to pay for the investments. Even this short review reveals not only the importance of the small scale private providers, but also their ingenuity. In analyzing their survival strategies, it identifies the benefits of competition and free entry, and the costs of operating on the margin of the law. The lessons which the small scale private providers have learned over the years have formed their present operating patterns. These local entrepreneurs appear then to be an important stakeholder that need to be involved to meet the challenges of serving the additional 120 million urban dwellers that need to have adequate access to sustainable water supply services by 2015, in order to reduce by half the current coverage deficits established by the Millennium Development Goal for water in Latin American countries. In this time when partnerships need to be made to reach the development goals and fight poverty, more than isolating or ignoring the small local private sector, they should be recognized as a key player in sector dialogue, and in revising technical and service quality standards. Its strategies to reach the most difficult segments of the water supply market without explicit government subsidies provides a good example for those risk averse public and private companies that are reluctant to participate in those less favorable segments of the market. One of the main messages of this publication is one of hope as it demonstrate that even the poor are not only willing to pay but are actually paying for water services when the service is provided to them, even in a less than optimal way.



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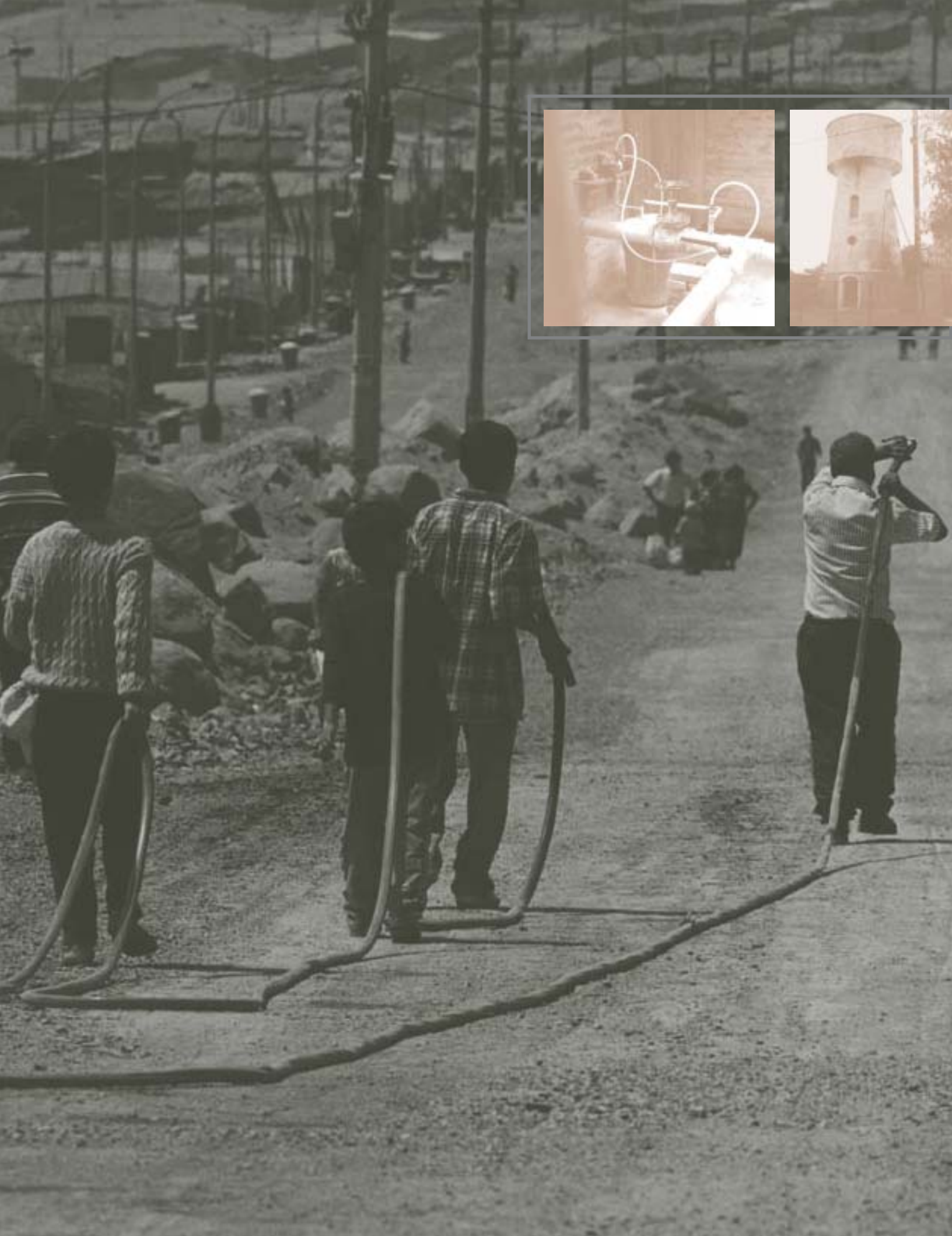


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Since colonial times, private entrepreneurs have provided water to Latin American cities. While many sought permission from government authorities to produce and distribute water, most operated without an exclusive franchise, and without any subsidy or credit support from government. They grew until a wave of nationalization in the mid-twentieth century left almost all of the Latin American water companies in the hands of government. Some of the original independent providers survived (Aguas de Mariscal in Guatemala is over 70 years old), but many more since then have grown up in business niches alongside the public companies.

In the 1990's, private participation in water services made the headlines again as governments, frustrated with the poor service and financial performance of their public-sector utilities, opted to bring in private operators, generally under long-term concession contracts (only Chile has gone for a full divestiture model as in the UK). This new wave of large, often international private providers operate under detailed government regulation, with an exclusive license to provide services in their concession areas. They differ from the smaller homegrown, independent providers who operate with limited government oversight with no government support and who must compete for customers. This group is the focus of this study.

The Water and Sanitation Program (WSP) began collecting information globally about the role of small private providers in 1998. Small providers are active in many market segments, but they have a particularly large market share in the slum and peri-urban areas that are under-served or left out by official utilities. The Program's objective in exploring this

theme, derived from its mission to help the poor gain access to improved services, is to understand the role of independent providers alongside formal utilities. Ultimately, WSP is interested in policy options which, by creating space for the competitive energy and creativity of small enterprise, would offer more responsive services to the poor.

As part of this program, field studies of independent water providers in six Latin American countries were carried out by local consultants. Time constraints precluded consideration of independent sanitation providers. The six countries reflect a broad spectrum of hydrological, economic, and legal environments. In particular, a wide variety of regulatory frameworks is represented. In Argentina and Paraguay, the law is ambiguous with respect to the status of independent water providers. In Colombia and Peru, the constitution encourages private sector participation in water provision, but detailed regulations create obstacles to their operations. In Guatemala, there are few legal limits on independent providers' participation in the water sector. Bolivia is highly regulated, but allows user cooperatives.

In each city, ten to twenty independent water providers were selected for a rapid survey of the services they provided and key performance and price indicators. Similar indicators were obtained for the municipal utility. Five to ten independent providers were then interviewed in depth, but it was not possible to gather detailed financial statements or conduct user surveys. Independent providers identified during these surveys came to a workshop held in Cartagena, Colombia, in February 1999.

This report summarizes the findings of the six country studies, enriched by presentations and



discussions at the 1999 workshop. Based on the partial evidence available, the reports attempt to answer the following questions about the independent providers:

- How important are the services they supply?
- How effective and efficient are the services?
- What obstacles do they face in seeking to scale up their activities or to upgrade their service?
- What are their strategies for competing in the market and coping with business and regulatory risk?
- what policies would be likely to improve their performance and benefit the consumers they serve?

The data obtained in this exercise are not complete or always verifiable enough to draw firm policy conclusions. However, several observations can be made that suggest the value of more in-depth study and policy work on the role of small-scale in specific country cases.

The most striking finding of this review, which makes aggregate conclusions difficult to reach but also makes the topic more exciting, is the sheer diversity of the services, market niches and business models developed by small water entrepreneurs. Perhaps the most useful classification that can be made for policy purposes, is that between mobile providers (mostly tanker trucks) and fixed networks (piped delivery). Network operators have substantially lower costs and prices per cubic meter sold. They offer greater convenience and service quality to their clients, but, as their business model involves “sunk costs” of infrastructure, they are much more exposed to expropriation and regulatory risks. Indeed, network operators do not occur at all in cities. Some cities do

not offer the right hydrological conditions. In others, like Lima, government regulation actively discourages the independent provision of water by networks. Mobile operators offer higher-cost, low-volume service but can do so in higher-risk environments, wherever someone is willing to buy water, and even if this demand is only seasonal. Interestingly, many network operators started as mobile operators, then invested in fixed facilities – when they had accumulated enough cash, and felt they did not risk an expropriation of this sunk investment.

But even within each of these two sub-groups, major differences exist. A mobile provider may operate its own water source, buy from a third-party private source, or retail water purchased in bulk (or sometimes stolen) from the trunk utility. Truckers may serve households directly, deliver water to a community storage tank, or even supply a local fixed network serving a group of standpipes or house connections. Private well or source operators can serve tankers, but also offer top up service to the official utility in drought periods. And many small operators are also active in “value-added water” businesses (bottled, bagged, filtered, flavored waters, and ice). This diversity shows the acumen and responsiveness of small entrepreneurs who live from what they sell. After all, they go broke if they do not offer services that people want or if they misread their business environment.

A second observation concerns the large aggregate scale of activity of small providers. Even in cities where the public utility has a relatively high coverage, they serve a substantial market share of urban households, not only in low-income and other areas where the municipal utility is slow to extend its

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network, but also in a wide variety of niche markets that coexist with and complement utility services.

Third, in the cities sampled, we did not get confirmation of the popular cliché (frequently mentioned in engineering studies and masterplans) according to which all independent operators charge a huge multiple of the public utility's price. Trucked water is more expensive than piped, but in our sample it sells at 4-10 times the public networks' unit price – not the 20-150 times often mentioned in the literature. More interestingly, small network operators in several cities compete favorably on price with the main utility, even though they get no subsidies. Apparently economics of scale may not be as essential to water service industry as often thought. This suggests that government policy might usefully consider creating a space for small operators, especially in cities with large coverage backlogs.

And fourth, government policy does matter. The presence of private network operators, and their willingness to invest in improved infrastructure, varies sharply across cities (lots in Guatemala City and Asuncion, almost none in Lima) — in a way that seems related less to consumer demand (the main utility's coverage gaps) than to the government's

enforcement of exclusive utility licenses and other regulatory constraints. It also varies over time in the same cities. A peri-urban "aguatero" may not feel threatened by an exclusive license held by a sleepy, cash-strapped municipal utility with a track record of slow expansion. But the same aguatero will stop investing, or will attempt to recover its investment faster from up-front connection charges, if the same license is transferred to a private concessionaire who has hard contractual coverage targets and the means and incentives to expand rapidly.

Serving the poor is a huge challenge, in Latin American cities as in other developing countries. This paper suggests that small enterprise can and will be a part of the solution, and that different government policies can promote or hinder the scale and quality of their response. Further work is needed to design specific policies or projects that tap the energy of small providers, but one conclusion is likely to stand: governments, advisors, investors and aid agencies who are looking at water utility reforms in developing countries would be well-inspired to look at this "other private sector", and to think twice before adopting reform proposals that ignore or stifle its potential contribution.

Table 1. Independent water providers in six Latin American cities

City/Country (total city population)	Households Served by IPs (% of pop.)	Independent providers Type (average number of connections where available)	Average Price (\$US/m3)	
			IPs	Utility
Cordoba, Argentina (1,200,000)	38,200 (15–20%)	- Cooperatives (3%) (78-1,150) - Networks (10%) (500) - Truckers (2%)	0.42 0.23 1.25 -2.50	0.54
Asunción, Paraguay (~ 1,000,000)	50,000 (30%)	- Small networks (400; up to 2,000)	0.30-0.40	0.40
Barranquilla, Colombia (~ 1,200,000)	52,500 (20–25%)	- Truckers - Carters - Small networks (up to 14,000)	5.50 – 6.40 0.54	0.55
Guatemala City (> 2,000,000)	> 78,500 (> 32%)	- Truckers - Community systems - Private networks (up to 15,000)	2.70–4.50 0.33-0.58 0.42	0.42
Lima, Peru (5,200,000)	26–30%	- Truckers	2.40	0.28
Ica, Peru	10%	- Private networks (condominial)	0.21	
Cuzco, Peru	30%	- Community systems (200)	0.34 to 1.20 monthly rate (unlimited consumption)	
Santa Cruz, Bolivia (1,000,000)	100%	- Cooperatives (100%) (1,000 – 100,000)	0.25-0.55	n.a.

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Independent providers in Latin America run a wide range of product and service lines, of ownership patterns and of size. An individual with a push cart, selling water by the glass, bag, or gallon, can reach between one and two hundred people daily; a trucker who carries water house to house can generally serve between 70 and 350 households, or between 400 and 1500 people each day. The more complex providers operate network systems that generally serve anywhere from a hundred to several thousand households on a sustained basis, although such companies were found starting up with as few as 10 customers. The average independent network in Asuncion counts about 1,000 customers.

Some independent providers distribute utility-produced water, but others get water from private sources, usually on the city's outskirts. Private water producers with deep wells, dams, and sometimes treatment plants both sell to secondary distributors and maintain private networks and, in some cases, run their own distribution companies. In Lima, where the law forbids private water production within the municipal perimeter, over 60 private wells on the city limits provide water to the independent tank truckers—and to Lima's official water company too when official sources run dry.

Every city study also revealed an independent "value-added" water treatment industry: processed water products, such as filtered and chlorinated ("purified") water, soda, ice, and flavored waters, are being produced in bags and bottles, and marketed and distributed locally – competing partly with utility water, and partly with the soft-drinks industry.

Where do small private providers come from?

Many independent providers had their beginnings on the outer fringes of the city; in settlements not connected to the main service networks. Wells, dams and reservoirs are generally outside of the central city as producers look for sources of better quality water and for areas where they are unfettered by legal restrictions. In Cordoba or Guatemala where small networks, or *aguateros*, have operated for over 30 years, they remain in what is now mid-city, with the rest of the city sprawled around them, although they began as peri-urban service companies. In Lima, the tankers or the communities who buy their water have developed small distribution systems in the outlying slums, but during the summer months they reappear in the well-to-do downtown neighborhoods, when the municipal water service becomes unreliable.

While low-income residents proved the main staple of the independent providers, other market niches are also important. These include middle-class housing developments whose developers found it simpler to build self-contained water and sanitation systems, clusters of vacation homes at the beach whose owners preferred a small self-contained water system to paying for miles of water mains, industrial parks that must have a reliable supply of high-quality water in a city where municipal utilities cannot provide this service, and families of all income levels in cities where the public utility provides intermittent or unreliable service. Many middle-income urban households in Guatemala city have dual connections—one from the municipal utility and another from an independent network.



Independent network systems exist in all the cities studied, though they play a greater role in some cities than in others. While the oldest on record, Aguas de Mariscal in Guatemala, was founded 70 years ago, others (Santa Cruz and Cordoba) go back 50 and 30 years. These network systems show fundamental differences in their ownership and management patterns, and, coincidentally, in their origin. Ownership may be by individuals or by shareholders (cooperatives and condominiums). Most network systems emerged from one of the following beginnings:

- Real estate developers who installed water and sanitation systems in order to sell off lots and stayed to manage the systems, or sold them to independent operators (a model well known in the USA);
- Providers to industrial parks who find a private source more reliable and cheaper, in particular for high-quality water;
- “Mobile” distributors who evolved into network providers;

Two other types of small providers, who may not strictly qualify as “small” or “independent”, are included in the study: new contract operators in small Colombian towns, and user cooperatives.

In recent years, Colombia has seen a growing number of small local firms or individuals (often with a consulting engineering or construction background) take over the operations of municipal water assets in small towns. This occurred after several of the regional companies formerly in charge of these services went into deep disarray in the 90s, after being weaned from government fiscal support as a result of

the country’s decentralization reforms. Most of these new operators have lease or service contracts granted by the local governments, and their water rates are regulated, so they would not strictly meet our definition of “independent” operators (even though the contracts and local regulatory capacities are often weak, and leave these operators exposed to significant business and government risks). However, we included these “mini-concessionaire” in the study as an emerging type of small private providers, of current interest to several Latin American governments looking for ways in which the private sector could help them address the service backlog and weak public management of services in small towns.

The *cooperatives* in Bolivia and Argentina are another hybrid form – between a regulated public utility and a self-governing user “club”. Legally, the cooperatives maintain an independent status and make their own investment decisions without a government mandate of universal service, and without an exclusive right to serve the areas where they operate or restrictions in expanding this area. However, they are recognized and endorsed by law, their rates and service standards are regulated by a formula, and the most established cooperatives have become over the years quasi-official.

Generally obligated to meet performance standards and to pay corporate and extraction taxes, cooperatives can raise investment capital by selling shares, in a way that private for-profit operators cannot. Noted for their management stability, particularly in comparison with some municipal utilities, the Argentine cooperatives offer other services besides water provision, such as electricity, sanitation, even health and funeral insurance, to entire cities. In both countries the larger cooperatives have become established and can even get national government grants or guarantees for multi-lateral loans. We found cases, however, of smaller cooperatives, threatened by recent concession laws which oblige members to connect to a privatized municipal company. Cooperatives have a difficult time competing with concessions, since their tariff regulations generally in Argentina do not provide for recovery of investment costs. In Bolivia, where cooperatives are the sole supplier for several major

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cities, cooperatives seek out and compete for new markets. New cooperatives in peri-urban areas are particularly entrepreneurial, and compete actively with each other to recruit members at the boundary of their service areas.

Evolution from Mobile Trucks to Fixed Networks

Though both network and mobile providers are present in most of the cities studied, operators of network systems appear to be replacing the tank truckers and carters in some cities. Tank trucks remain the mainstay of the independent providers in Lima and in Barranquilla and still figure to a certain extent in Cordoba and Guatemala City. Distribution by truck has been fading in Cordoba, Argentina, except for specialized industrial needs, while in Asunción and in Santa Cruz it has disappeared altogether, in favor of small networks. An intermediate arrangement exist in Lima's squatter settlements: water truckers maintain and supply large holding tanks that rely on gravity to distribute water to several standpipes, and employ residents to control a network of hoses running into each house and to collect payments. This system was actually introduced by international donors in the hopes that communities would manage the water distribution, but it gave way to "mini- concessions" with truckers who offered the best price. Truckers have gladly used the holding tanks, increasing their own revenues and service quality. They have not invested in new water tanks, however, because of regulations which transfer all infrastructure assets to the public company. The trend suggests, nonetheless, that when a mildly favorable regulatory environment, can lead independent providers to invest in delivery systems which involve greater sunk costs and risks, but provide larger volumes of water at a better price to their clients.

Performance and price

Performance indicators gathered in this survey suggest that small network providers – even of a modest scale – compare favorably with municipal utilities in terms of unaccounted-for water, productivity (employees per connection), and operating ratios. The independent providers also show extremely low rates of customer non-payment, perhaps because

they can be flexible in dealing with late payers. Some differences do appear between the profit-making operators and the not-for-profit cooperatives: water cooperatives in Argentina show a somewhat wider margin for non-payment than the entrepreneurial operations.

Trucked water is always more expensive than piped – as utilities who have to provide emergency drought services know well. Even so, this survey did not observe the very high price multiples (20 to 150 times) mentioned in studies of water vendors in Africa or Asia.

Independent network operators routinely undersell the official suppliers when they are in competition. Their capital costs per connection are also generally lower. In Cordoba, Argentina, independent operators kept their costs down for many years to compete with the subsidized public water utility, charging as little for connections and tariffs as a third of the subsidized water prices of the municipal utility. Now that a private concession has taken over and subsidies have been discontinued, independent providers prices run up to 70 percent less than those charged by the concession. In Paraguay and Guatemala the *aguateros* compete favorably on price, despite the subsidies received by the state-run utilities in each country. And the *aguateros* in Paraguay, Colombia, Guatemala and Argentina pay corporate taxes, which the state companies and concessions do not.

Technological innovation

The independent providers' low costs and prices stem in large part from their development and use of innovative, low-cost technologies. The simple well-drilling techniques and plastic hosing used by the *aguateros* of Paraguay has reduced the installation cost of a small water network to about \$250 per person served. In contrast, most utility companies are legally bound to apply rigid engineering standards, and few encourage research into cheaper methods. Tariffs of concessioned utilities in Latin America are often based in «cost-plus», leaving few creating incentives to save capital or to control operating costs. Where governments subsidize connections and/or water rates in low-income areas, as in Buenos Aires, Santiago de Chile, and throughout Colombia, the subsidy reduces the operator's incentive to explore lower-cost options.

Small Scale Economies vs. Economies of Scale

It is frequently assumed that large scale monopoly companies are justified in the water sector because of economies of scale. That is, investment cost/connection costs go down as the size of a water production and distribution operation goes up. The fact that independent operators working on a small scale have been able to undersell the large scale companies calls this assumption into question, at least as an iron clad rule. But it has not been easy to carry out a real cost comparison of large and small operations in the six cities reviewed in Latin America. Independent operators tend to be frightened about revealing their costs and earnings, while public operators and their concessions simply do not have access to such figures. (Many investment costs, in particular those subsidized by national governments, have been forgotten and others are inextricably combined with investments in other works - sanitation, tree planting even zoos.)

One case, however, has been documented in Paraguay, thanks to a proposal elaborated by engineers for CORPOSANA, the municipal water works for Asunción, to secure international financing. These are base construction costs (no financing charges included) which, in this case, were subject to analysis by international development banks for implementation between 1992 and 2000 and are adjusted to 1997 dollars. The comparators in this case are based on two independent operators costs in 1997, analyzed for the same year, and connection charges (presumably base costs, plus finance charges and profit).

	Connection Cost (total cost/#users)	Number of connections 1992-1999 (est.) average size of project	Connection Charges
CORPOSANA	Etapa 1 - \$ 1810.81	37,000	\$ 387.20
	Etapa 2 - \$ 2800.00	25,000	\$ 193.6
<i>Aguateros</i>	Sample 1 - \$183.7	300	\$ 224.00
	Sample 2 - \$272,45	300	\$ 300.00

Cost information from CORPOSANA is based on a report by then CORPOSANA President, Ing. Hugo Ruiz, while *Aguatero* information is based on a study done by CAPA - the Association of Independent Water Providers of Paraguay.

Although their charges are similar, the large scale projects run ten to twenty times the cost of the small scale projects. The dramatic cost differential in this case can be traced largely to technologies used and to the source of the water. CORPOSANA relies on surface water intakes some fifteen miles outside of Asunción (and as the map on page 17 shows, crossing Asunción itself takes another 25 kilometers). To cover these distances CORPOSANA requires hefty piping (minimum ten inches in diameter) and powerful pumping stations. The *aguateros* in contrast can get away with a small diameter flexible hosing because they do not run much more than five miles from any one well source. The well water quality is also superior to the river water and does not require any additional investments in costly treatment plants.

The *aguateros* estimate that they have installed some 50,000 connections in Asunción over the past fifteen years for an investment of around US\$ 20 million in over 400 small scale systems. In contrast, CORPOSANA's \$137 million investment proposed to reach 62,000 new connections in the same time frame. Granted, Asunción, like many of Paraguay's and Argentina's delta cities, enjoys a privileged position with abundant and high quality ground water. However, it clearly demonstrates one case in which the sum of many small scale operations proves more economical than the large scale "economies".

Argentina
Bolivia
Colombia
Guatemala
Paraguay
Peru

Financing

For the independent providers capital financing comes hard. Most invest in infrastructure without recourse to the public funding or soft loans that sustain the municipal utilities. They rely for the most part on personal loans (often secured by mortgaging the entrepreneurs' home) high-interest short-term commercial credits or, where permitted, up-front contributions from customers (as in condominium and cooperative operations). A stunning example comes from Asuncion, Paraguay where 400 *aguateros* have invested over US\$30 million to provide service to 75,000 households, and have recovered both operating and investment costs fully. Few public water companies in Latin America can claim to have been self-financing to such a degree.

Responsiveness to user demand

Poor and untenured neighborhoods in Latin America are sprawling faster than the municipal utilities can reach them. In areas where residents do not have registered title, municipal utilities and concessionaires are generally not authorized to connect residents, and they have few incentives to do so. In contrast, truckers and water carriers move into new settlements as soon as they appear. Sophisticated network operators like the *aguateros* try to set up delivery systems in advance of population growth. Staking a claim in a developing area gives a competitive edge. The small operators' business appears to be unaffected by households' tenure status, family income, or the community's size: in close contact with the community, they seem to be more effective in tailoring services to local needs and resources, and in getting paid.

With *Aguateros*, No Wait for Water in Paraguay

Waiting for a water hook-up is unheard of in Asuncion, an atypical situation in Latin America, thanks to Manuel Lombardo and other *aguateros* throughout Paraguay. Manuel is a young engineer from a family of Paraguayan *aguateros*. Three years ago he had saved up the equivalent of US\$15,000, enough to start his own *aguatería*. He looked for a place that had a few homes but a promising location. When he bought a lot, sunk his well and laid his pump house he had ten customers, not enough to pay back his investment. But the news of his *aguatería* traveled fast and more families moved into the area. By the end of his first year, 45 families were connected, enough to meet

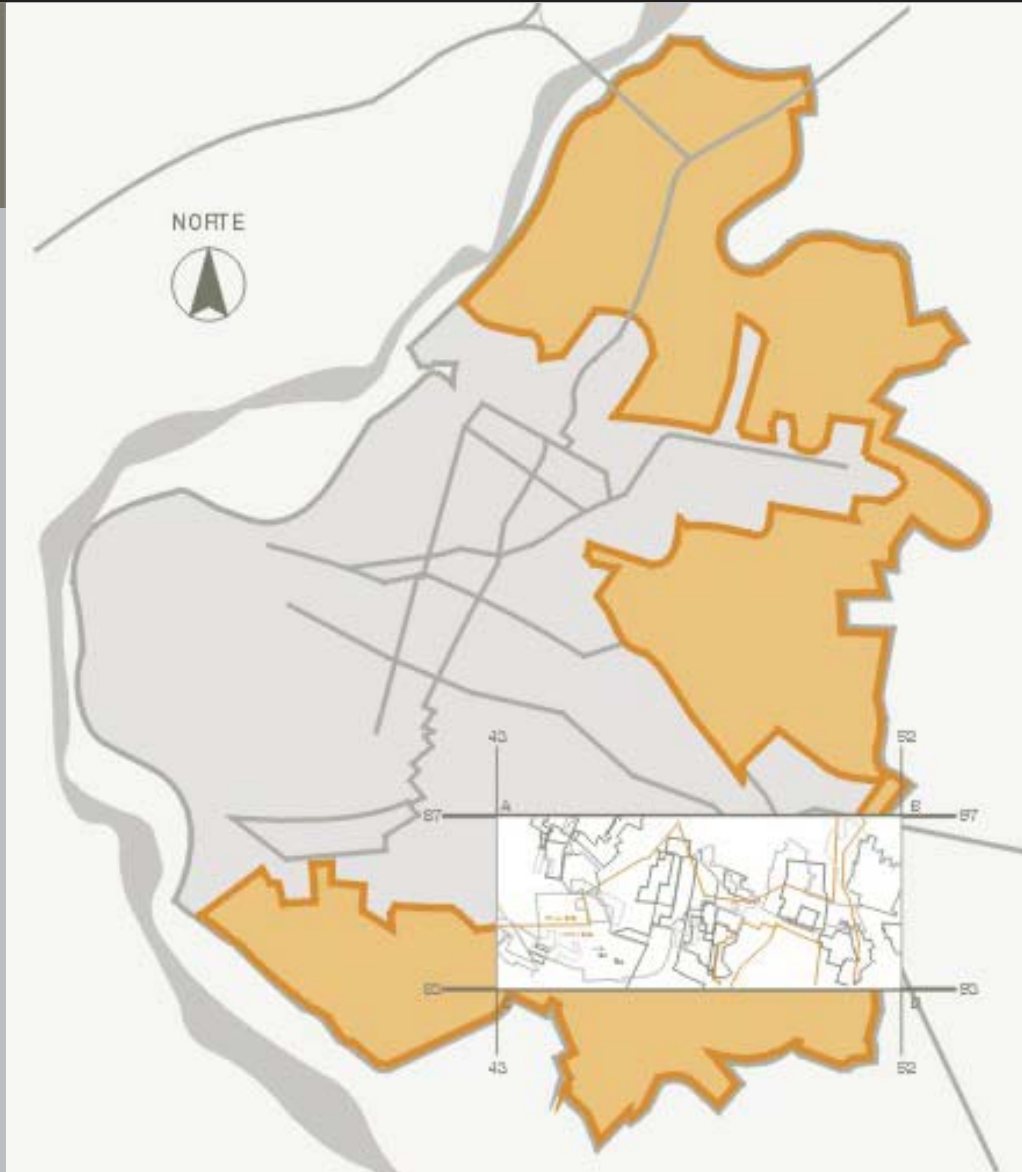
his loan payments, and his goal of 100 customers in five years began to look quite realistic. His piping runs around five kilometers, but his well and pump house have capacity sufficient for another ten. But Manuel didn't count on two other *aguateros*' spotting the same settlement and sinking wells close at hand. Since he has had competition, he has become more aggressive about seeking out new customers. He is now offering easier payment terms and longer payoff periods to bring in more customers.





Asuncion City

In this map of Asuncion the light orange area shows where the public company plans to extend new services. The dark orange lines are major trunk lines, existing and projected, which carry water from a treatment plant and reservoir 15 miles outside of the center of Asuncion. As the detail shows, there are many *aguateros* operating where the company already works, and where it plans to extend services. Customers thus have a choice between public and private services or, (as seen in the example of JS Painu) communal services subsidized by the National Health Service.



This detail of an area of 35 square kilometers shows more than 50 *aguaterias* in existence. Most overlap another *aguatero's* territory and there are few households which can not choose between at least three *aguateros*.



Market Share

In all of the cities studied, independent providers are the primary water suppliers for a significant percentage of the population. But they also supplement the water needs of other users who find the public service deficient. Far from being a transient phenomenon, the independent providers have been around for a long time. The first network water systems in Latin America were built at the end of the 19th century by private entrepreneurs and our six city review turned up businesses which averaged 30 years of service, and one 70 years old. They serve households at all income levels, as well as industrial customers. At the top of the scale is Santa Cruz, Bolivia, where cooperatives are the only suppliers, and no municipal utility, public or private, has ever been established. This situation is repeated in several other Bolivian and Argentine cities. In the latter country, independent cooperatives and condominiums also cover 100 percent of the populations' water and sanitation needs

in a third of the nation's cities. At the lower end, private providers account for somewhere between 10 and 15 percent of water service in Cordoba, Argentina.

Efficient size

The minimum size of a water supply system required to maintain an efficient network operation was found in this review to be smaller than often assumed. Independent operators have developed ways to reduce their initial network costs and to sustain small-scale operations that offer water delivered to the home and/or household connections at often lower prices than the large-scale operations of the municipal utilities. At least in the cities studied, scale does not seem to be a huge factor in operator efficiency – except when government regulation imposes fixed overheads that can be recouped only with a certain scale, as in Colombia.

What is the Best Size for a "Water System"?

Aguatero Silvio Melgarejo from Asuncion has three different network systems and a total of 2,700 households as customers. But he wishes he could go back to 1,000 clients. He didn't make as much money then, but he knew each of his clients and worked directly with them, with no middle manager. He thinks that a diversified 1,000-client operation offering sanitation and garbage collection services in addition to water could earn the same profit as he now does with 2,700 clients, but with a smaller area and client group.

In Colombia, Jorge Uribe president and principal stockholder of CONHYDRA faces a different problem. His water company has 14,000 connections in eight different cities. It's large and unwieldy, but it is the smallest size which Uribe can make effective, given the legal requirement for every public service enterprise to have its own accounting and planning departments in house, prepare formal business plans and rates submissions etc. CONHYDRA would be better off smaller, but it couldn't afford to pay the required staff and meet the costs of regulation with fewer clients.

A Dynamic and Competitive Market

Water provision as developed by the independent providers presents not only a wide range of operators and products but also one that is constantly evolving. The handcarter saves to buy one truck, and then another. The water trucker looks for opportunities to supply a small network or start up his own. Small network providers expand services as fast as they can generate profits to plow back into their business.

While competition can be assumed to exist among mobile water distributors (absent “water mafias” or other cartel practices), networks are often thought to have natural monopoly characteristics.

However, the study found numerous cases of overlapping networks, and of competition for individual customers at the edges of small networks. When providers extend their networks into the same territories, as in Asunción, Paraguay, they compete to get families from the same neighborhood to hook up to their systems. In Guatemala, families are frequently hooked up to more than one network – providers then compete directly in the product market. Since the study did not include a household or user survey, it offers no explanation of why households chose to have two connections, only the fact that it is a frequent occurrence where systems overlap.

Table 2. Types of competition and small provider strategies

Examples	Client/Customer choice	Business strategy
Mobile distributors selling in the same area Lima Barranquilla Guatemala City	Choice of product and of provider Customers chose particular seller for one-off or recurrent purchase of water. In Peru and Guatemala, longer contracts with guaranteed supply — and purchase.	Lock customers into longer supply contracts. Create distinctive products. Create customer loyalty through personal attention.
Overlapping networks Guatemala City Asuncion	Choice of Service (Guatemala) Customers connected to more than one service provider; decide which to draw from. Choice of provider (Asuncion) Customers can chose or switch providers.	First in: Set high connection fees to discourage clients from switching to new providers, and to avoid losing investment if they do. New entrant: Cut connection costs so that families can switch server easily.
Contiguous networks (competition at edges of networks) Santa Cruz Asuncion Cordoba	Choice of provider Customers can chose between providers at outset or can switch from one to another provider; overlapping networks provide options for change.	Lower connection fees to win new customers.
Networks operating in proximity Guatemala City Santa Cruz Cordoba	Choice of management/ yardstick competition Customers/shareholders in cooperative systems pressure management to match performance or price of another system nearby.	Spread fixed costs by increasing market size. Create customer loyalty. Acquire less efficient systems.

Argentina
 Bolivia
 Colombia
 Guatemala
 Paraguay
 Peru

Cordoba, Argentina, offers another case where families on the borders of private network systems can choose between the private independent operator and the municipal utility. In general, the independent operators charge between a third and two thirds less than the municipal providers, although their water suffers from occasional “funny taste” resulting from sulfur deposits. There is evidence that families are using the independent operators’ water for washing and toilet-flushing, but turn on the municipal water tap for drinking.

Independent operators in Cordoba, and peri-urban cooperatives in Santa Cruz, compete for new clients in “unclaimed” areas, or at the edges of contiguous networks. In Colombian and Peruvian cities, where the independent networks are scattered, competitive pressure is indirect. Providers feel the need to improve their services, whenever information about better service or lower prices can reach their customers. Cooperatives in the suburbs of Santa Cruz, for example, appear to be engaged in an open war for new customers and management takeovers. Operators on the city’s periphery are rushing to improve service (increasing the hours and pressure) before their shareholders sell out to other cooperatives.

Consumer benefits from competition between independent providers show up in the prices they charge. A detailed look at 28 *aguaterias* from Paraguay showed that connection fees range from US\$ 87.00 to US\$350.00 – and the fees are lowest

where *aguateros* overlap with other *aguateros*. Interestingly enough, they increase somewhat where the competitors are CORPOSANA and SENASA, the public utilities, presumably because the *aguateros* trade on their reputation for higher quality service and can charge higher rates accordingly. The water truckers of Guatemala follow a similar pattern, charging prices that increase as distance from the city center increases and as the competition diminishes. Their prices are four times as high at the fringe as in city center, suggesting that transport costs are not the only factor in setting prices.

Price-fixing did not seem to be a pervasive issue in our sample. However, the Barranquilla case study revealed attempts by producers and distributors of purified water in bottles to organize a cartel and to set prices. While the bottled water suppliers have never managed to form an agreement (among 140 producers, a few always have remained on the outside and cut prices below the levels agreed on), the tank truck distributors, who are supplied and contracted by the official company and are thus an extension of the monopoly utility, maintain a single price and operate in assigned sales territories. This price, set by the public authorities probably with the intention of protecting customers, is the highest in our sample – it is in fact as high as the price of much higher-quality bottled water in the same city, suggesting again that competition is often more effective than regulation in lowering customer prices.



The independent providers face a difficult environment for investment and business development. They operate in legal limbo and face pricing and other regulations that were designed with larger, monopolistic water providers in mind. Increasingly, they face outright expropriation. In response, they find ways to reduce their risks.

Business Constraints

Legal limbo In all six countries studied, the regulatory frameworks dealing with water production and distribution were conceived for large monopoly providers, whether public utilities or private concessions. With the exception of the cooperatives, which are regulated to protect shareholders, none of the countries studied has a regulatory framework that acknowledges the existence of, much less encourages, independent providers in the water sector. In the Latin American context, where municipal utilities enjoy official mandates and recognition, the independent providers are left in a kind of limbo: neither completely legal, nor explicitly illegal. Their invisibility under the law leaves them at a clear disadvantage, for example, when dealing with deadbeat customers or unauthorized taps, because the local police cannot come to their defense. The independent providers thus find themselves under pressure to do favors for the local police in return for undefined protection.

Unfair monopoly practices Consumer protection laws, antitrust legislation, and regulations against “dumping” or price-fixing and other monopolistic practices are a rarity in Latin America in any sector, and the

water sector is no exception; water industry regulations in Latin America offer little recourse to water users or to the cooperatives as businesses. They have no grounds to complain of unfair competition when a municipal utility offers water at no charge or gives financial assistance to consumers. The independent providers of Guatemala City relate how the municipal utility, EMPAGUA, provided water free to families who agreed to block independent providers’ attempts to run pipes down their streets and connect to families on opposite curbsides. The Paraguayan providers cite a similar case in which the public company effectively engages in “dumping”, charging prices below the cost of provision (in this case an estimated 10 percent of operating and investment costs) in an attempt to run the independent providers out of the area.

Of all the difficulties they face in doing business in such an uncertain and unprotected environment, the following specific ones came up most frequently in discussions with independent operators as those which most threaten their security and limit their options: lack of secure ownership of infrastructure they have built, pricing regulations, restriction of service areas, and inappropriate technical and operating standards. They also feel that the utilities’ recourse to subsidies and external financing creates an uneven playing field, where the utilities and concessions do not face the same discipline of having to recover costs in the marketplace as they do.

Threat of infrastructure expropriation In most of South America, the state reserves the ownership and sovereign right to use of ground or surface water and may also legally claim ownership of all production and



(piped) distribution equipment in metropolitan areas. While the likelihood of confiscation or expropriation varies from country to country, and while individual wells are generally tolerated, the threat is enough to discourage investing in infrastructure. In Lima, the official provider takes over any privately financed infrastructure in neighborhoods where it extends its services. In Paraguay, the threat of expropriation roused the *aguateros* to form an association to lobby against passage of a proposed new law. Independent operators in Colombia point out that government's ownership of water supply networks not only discourages new investment, but also increases insecurity in the face of political change.

Tariff restrictions Prices are regulated in three of the six countries studied. In Bolivia regulators set tariffs for each individual provider based on performance criteria and business plans, while in Colombia and Argentina profit margins of 14 and 25 percent respectively are permitted but only on operating costs (comparable to or less than returns on simple bank time deposits or other safe market investments in these countries). Such tariff restrictions, which are meant to protect consumers, also appear to limit new entries and/or investment in new services. The fact that bottled water prices are not restricted, probably because bottled water is felt to be a luxury good, may also explain why over 140 producers crowd the bottled water industry in Barranquilla while only a handful of private networks are operating. To raise capital to replace or build new equipment, independent operators must find new customers to pay connection fees up front. They cannot raise funds to pay off debt through tariffs, making it virtually

impossible for the operator to invest in ways to improve service. At the same time, the tariff regimes actually discourage the provider from reducing costs, since lower costs will lead to lower profits.

Service area restrictions The regulatory frameworks in Latin America spell out clearly what services public operators are to provide and where. In designating a service area, the state also establishes a utility's exclusive rights to sell network water, and it frequently obligates consumers to hook up to the official provider. Whenever the official company redefines its sphere of operation, the independent operators may be displaced. When public utilities are privatized, the contracts generally give exclusivity to the concessionaires, even when independent operators already have invested in and are serving an area. This is the case in Cordoba, Argentina, and is a threat to the *aguateros* in Asuncion. In Paraguay and Colombia, recent proposals would establish zones for private operators and cooperatives. Regulatory frameworks in Colombia have already created a patchwork of independently regulated monopolies. This transformation of unregulated independent operators into regulated mini-concessions limits the possibilities for growth and for competition for clients, activities in which they have been highly successful, and place them at the mercy of regulatory authorities rather than their success with customers.

Technical and operating standards In the name of public health and safety, water services are subject in most countries to highly detailed quality and engineering standards. These standards are not always strictly necessary for health and can raise tariff

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levels above the levels affordable to low-income groups. To give a commonplace example, regulations in most countries require that piping be built of “durable” material—cement or, in special cases, PVC. The flexible hosing which has served the *aguateros* of Paraguay so well is not allowed. Independent providers cannot keep up with new regulations that apply U.S. EPA standards to drinking water in some Latin American cities. The tariff regulations make no provision to cover investment in new treatment plants and they have no access to long-term financing.

Other regulations, even more remote from user needs, specify organizational charts or planning, management and information systems. They are protested by the large monopolies but can put the smaller organizations out of business. In Colombia, independent providers under a certain size have not been able to survive costs imposed by regulations, and in some cases they simply went underground for fear of being caught out of compliance with regulations.

Subsidization of utilities' capital costs Regulations of the municipal utilities vary but most allow only operating costs to be covered from customer revenues. Connection charges cover the investment in tertiary networks and meters, but investment in

production, new dams, treatment plants and other major works is generally financed through partnerships with national government and/or external loans. It is thus rare for major capital investments of utilities to be recovered through water rates, although new concessions should in principle follow more of a private sector pattern in the future. While these regulations do not bear directly on the independent providers, they make for an uneven playing field. The independent providers cannot count on such subsidies or soft loans. They must recover their investments fully or go broke.

Strategies to Reduce Risk

Independent water providers in Latin America have devised a range of strategies for coping with the constraints they face. These include cutting costs and prices and improving services, which improve service, but also bribing officials to renew contracts and operational permits, which harms provider performance.

Table 3 summarizes the risks most frequently mentioned by operators interviewed and the survival strategies they were observed to have adopted. The most common survival strategy to reduce risks is to recover investment costs fast (typically in less than

Regulations for Independent Operators in Colombia

Colombia's constitution of 1991 and subsequent water sector legislation is meant to encourage private participation in the sector and to ensure business-like management of water utilities. However, because the issue of scale as a barrier to entry was never considered by the drafters of the law, some of the requirements are onerous, especially for independent operators. A Permanent Regulatory Commission monitors “public service enterprises” (EPSs) and sets the conditions which they must meet to stay in business. Among other requirements, all EPSs must

- have an accounting department which employs at least one full-time professional accountant (to justify the salary of a full-time accountant, operators need a minimum of 14,000 clients);
- present the Regulatory Commission with an annual business development plan with specific goals and methods for achieving these goals;
- present a roster of employees for review of professional qualifications by the Regulatory Commission;
- organize and support a customers' association that elects a permanent representative to the EPS' board of directors.

The plethora of controls (of which the above are but a sample) is characteristic of a monopoly framework. It has no antitrust provisions that might protect consumers or producers from monopolistic practices. Independent providers are more stifled than stimulated.

three years). Loading investment costs into a connection fee or a share price (as do the cooperatives and condominiums) can protect entrepreneurs from a certain amount of loss, but it also encourages providers to favor investments in high-income areas and reduce extensions to poor neighborhoods. In the case of mobile providers, reducing risk means limiting investment in fixed infrastructure.

While the truckers of Lima could increase their productivity considerably by investing in holding tanks and neighborhood piped networks, they prefer to

invest in additional trucks. A new truck cannot increase revenues as much as a holding tank and network, but it will not expose the owner to a loss if the holding tank is expropriated by the state.

Operators also diversify their investments, opening up new market areas or developing new product lines such as flavored waters, soda and ice. The service cooperatives of Argentina have long offered a multiplicity products from electricity to funerals, and some *aguateros* in Asuncion are considering getting into the sewer business.

Table 3. Risks faced by independent water providers in Latin America

Risk	Survival Strategies	Examples
Changes in Regulations or Large-scale privatization Leading to: <ul style="list-style-type: none"> - loss of operating rights - confiscation - new technical standards - new bureaucratic costs 	Association and Lobbying Limit investments to a short term recovery strategy, or to “recoverable” infrastructure (e.g. trucks) <i>Form “partnership” with large scale or public company</i> <i>Evade controls</i> <i>Bribe officials</i>	Asuncion Asuncion, Lima, Cordoba, through-out Colombia Barranquilla, Cordoba
Confiscation/ Expropriation of assets (infrastructure)	Invest short term Association and lobbying Look for support from international organizations Purchase infrastructure	Santa Cruz Asuncion throughout Colombia
Price Controls Applied <ul style="list-style-type: none"> - limit earnings and investments 	<i>Associate with Public Company (share losses and investments)</i> <i>Manipulate cost information (creative accounting)</i>	Barranquilla Cordoba
Loss of Contract	Limit investments Association to lobby higher level government for stability Attempt to purchase infrastructure <i>Bribe officials</i>	throughout Colombia

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Strategies in italics are considered harmful to competitive markets and to service improvement.







Limiting investment An extreme example of limiting investment has occurred recently in the face of extreme risk faced by Paraguay's *aguateros*. Legislation passed in January 2000 introduces a regulatory system designed to permit private management of the municipal utility, CORPOSANA. It also calls for confiscation of the *aguateros*' operations and replacement of open entry and private ownership with a system of management permits renewable on a maximum two year basis with approval by the regulator. Faced with the possible loss of their jobs and investments estimated at over US\$30 million, the *aguateros* of Paraguay did organize and attempted to lobby against the law, but were unsuccessful. They also stopped investing in their networks, once the new regulatory system began threatening to become a reality.

Buying cover A second common survival tactic is that of "buying cover." At its worst this implies outright bribery. Independent operators are usually not in a position to make hefty bribes to municipal utility officials or highly placed municipal officials. The operators who admitted to this particular risk-averting strategy generally dealt with petty functionaries who controlled paperwork or billing for municipal water. But another form of "buying cover", perhaps in the

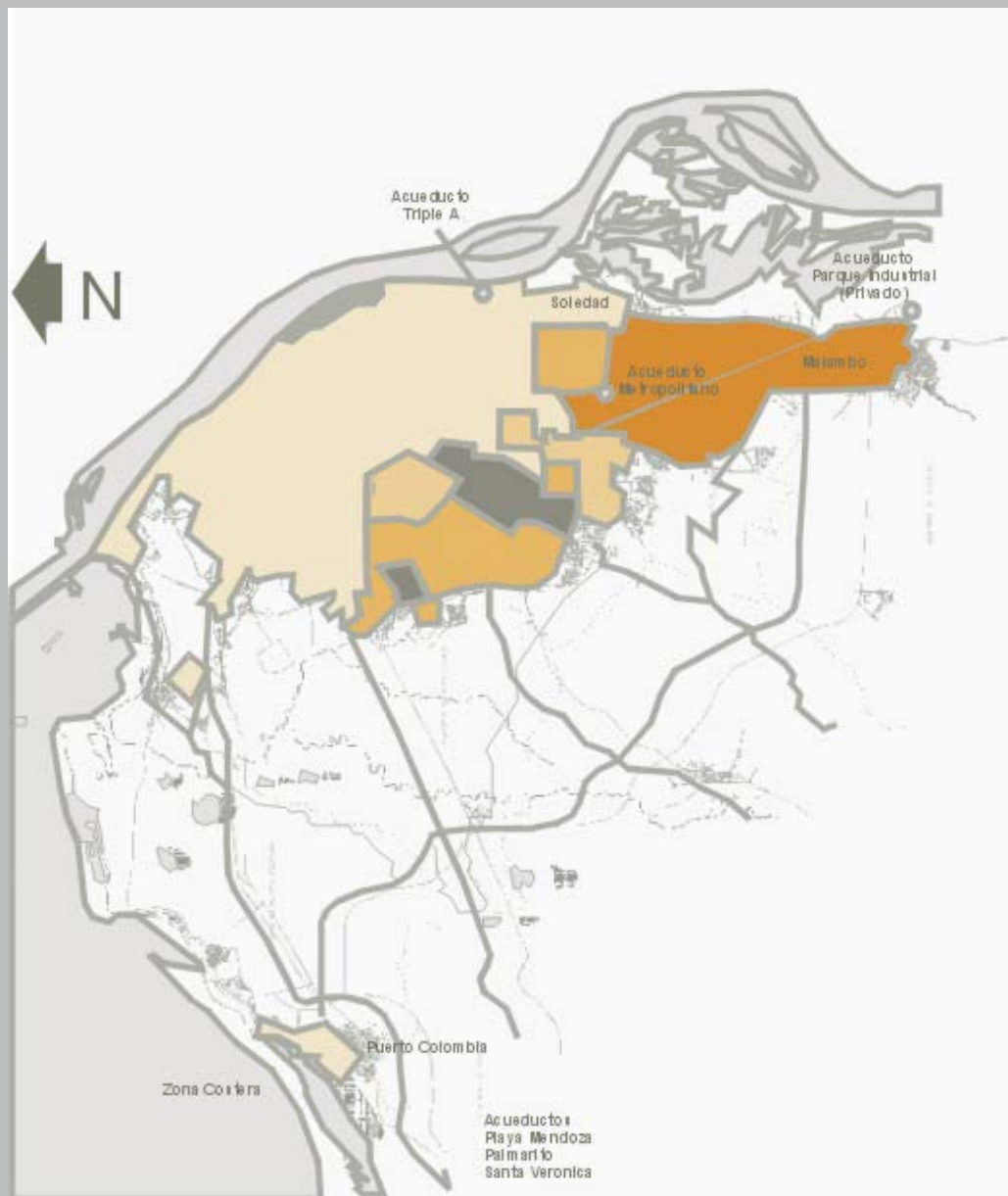
grey area, involves seeking a mixed partnership, sometimes with reputable NGOs, sometimes with the municipal utility. Such bailouts by public funds, or by international NGOs, may provide stability to one particular group but cannot make for sustainable and expanding services.

Barranquilla offers an example of a partnership that ensured the survival of such an independent water operation. A private developer, Aguas Metropolitanas, stumbled on an abundance of high-quality ground water in the late 1980s in an area of Barranquilla beyond the reach of the municipal utility. Within two years of its initiation, when it had grown to serve some 14,000 households, Aguas Metropolitanas sold half its shares to the city. The aqueduct now serves an estimated 30,000 households, of whom only half are paying customers. But operating in the red does not affect the owners of Aguas Metropolitanas. The municipality's purchase paid off the initial investment and the municipality makes up the company's losses through budgetary transfers (the original owner also made money by selling real estate in the area). *Aguas Metropolitanas* has few remaining incentives to improve delivery or to expand, and service has declined for the past six years, since no technical adjustments have been made.

References:

-  Service during 24 hours
-  Service during 12 hours
-  Service during 4 hours
-  Service during 4 hours 3 times a week
-  No service
-  Rationed service

Metropolitan Area
of Barranquilla
Aqueducts Coverage

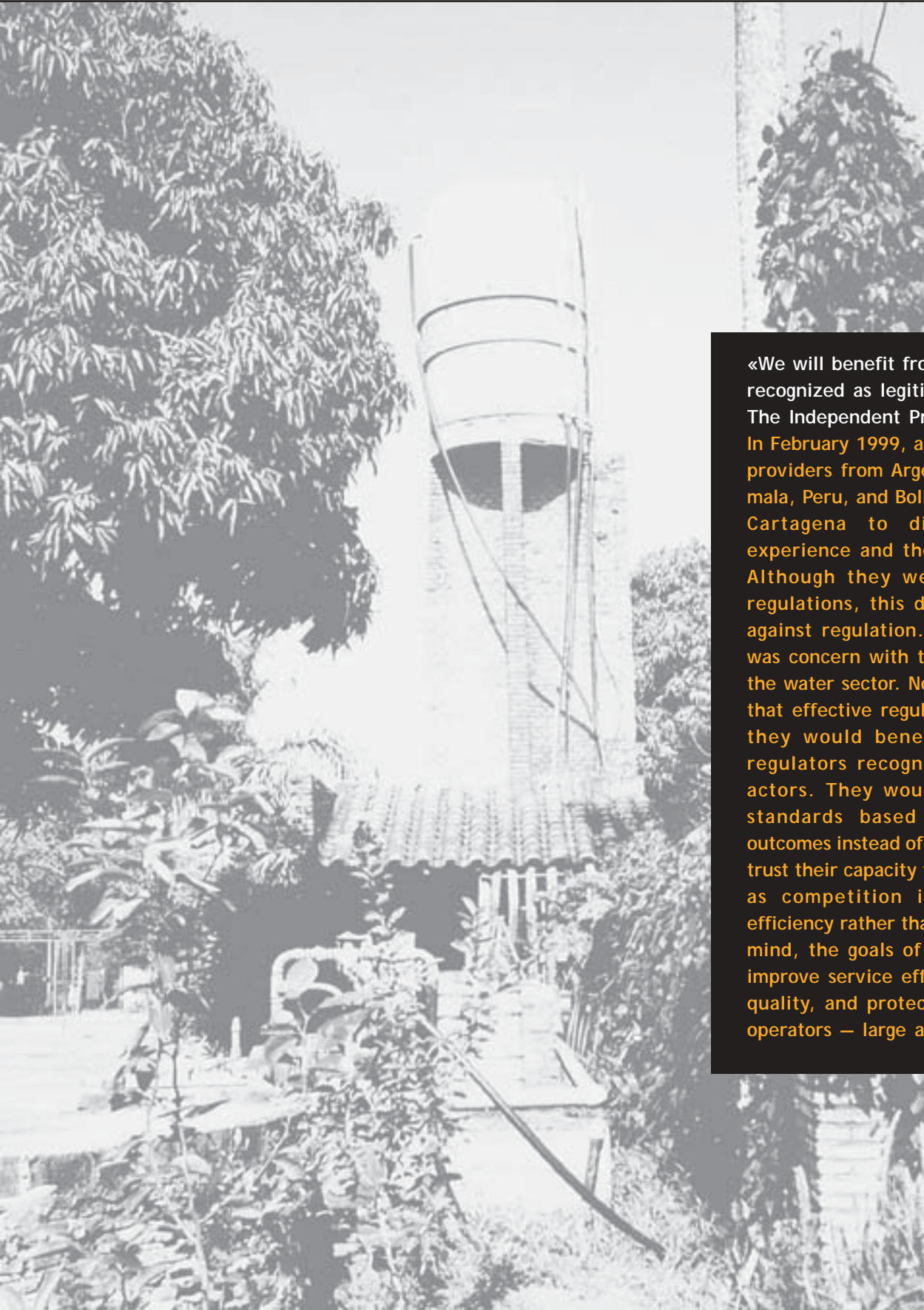


The results of the country surveys of independent water providers and of the February 1999 congress which brought them together for the first time point towards a vision of a new kind of business environment for water provision in Latin America, one which gives all providers incentives to improve the quality and coverage of services while keeping prices competitive. In this kind of environment, government becomes an enabler rather than an operator. The right balance between large and small companies, municipal utilities and independent providers, is determined by customers and market forces, rather than by predetermined assignment of roles and exclusive privileges. International donors and financiers, national and local governments, and the independent providers themselves are all stakeholders in this environment, and all have new roles to learn.

International donors, financiers, and developers could benefit from looking carefully at what the independent providers are doing before undertaking major investments in the water sector. Where exclusivity is assigned to concessions, this can spell the end of investment by the existing local private providers. Independent providers could even be viewed as potential clients, rather than interlopers. Donors could speed the pace of technological exchange by supporting the creation of networks and associations that bring these providers together, with each other, with their counterparts in other countries and regions, and with manufacturers of related goods and services. The better pump, the portable water purifier, the best drilling techniques, the new software for billing clients that are discovered and used in one city may not be known in the next city or country.

National and local governments could review their statutes and regulations with an eye to opening the doors to independent providers, enabling competition, and ensuring that all providers' investments are secure before the law. They might rethink the tradition of competition only by contract, which gives monopoly powers of water production and distribution to a single company, and consider finding ways to subsidize low-income users directly rather than through tariff structures or operating subsidies. And there are clear roles for government in preventing price setting, cartels, and other monopolistic practices, mediating disputes among providers and between providers and consumers, and monitoring water quality and service quality and sanctioning providers who violate their contracts with their customers.

The independent providers themselves also need to begin networking to make themselves known and respected, developing their strength through association and business training and using it to lobby and defend their rights while resisting the temptation to create cartels, set new entry barriers, fix prices, or restrict service areas.



«We will benefit from regulation if we are recognized as legitimate actors»—

The Independent Providers Speak Out

In February 1999, a group of 29 independent providers from Argentina, Colombia, Guatemala, Peru, and Bolivia met for three days in Cartagena to discuss their common experience and the constraints they face. Although they were critical of current regulations, this did not mean they were against regulation. On the contrary, there was concern with the lack of guidelines for the water sector. Not only was there a sense that effective regulation is needed but that they would benefit from it as long as regulators recognize them as legitimate actors. They would like to see common standards based on performance and outcomes instead of processes or inputs. They trust their capacity to be competitive, as long as competition is based on economic efficiency rather than political clout. In their mind, the goals of regulation should be to improve service efficiency, guarantee water quality, and protect the investments of all operators — large and small.

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That the independent operators assure a steady supply of water to a significant percentage of Latin America's urban population may not come as a surprise to many who have frequented the slums of the developing world. But their diversity, creativity and advantages in reaching niche groups have perhaps not been fully appreciated in the past. Nor, perhaps, has the potential which open entry and competition for customers can offer the water sector—and the water user. The independent providers are important, with continuing niches, even in cities where the utility provides good coverage. Their success in building and operating small networks challenges the belief that fixed water networks are a natural monopoly. Competition for customers is active and it works, but it would work better in a business environment which enabled competition rather than surrounding it with uncertainty and inappropriate regulation. The independent providers of water present a clear challenge to public authorities and policy makers:

- how to develop appropriate policies, which build on the positive aspects of this private sector while safeguarding the public health and well-being;
- how to regulate “even playing fields” so that the virtues of a competitive market system can improve water services;
- how to open possibilities for multiple providers, and how to assure that effective and efficient servers are not put at risk by regulatory systems.

As a start to answer these questions, policy makers should be encouraged to look with a fresh view at many water providers who are investing and active in their cities.



