

## Water and Sanitation Utilities Partnership

### Report #2

# POTENTIAL PRIVATE-SECTOR PARTICIPATION IN LIMA'S WATER SERVICES

## REPORT OF A WORKSHOP

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### Introduction

The main objective of the newly created Utilities Partnership is to improve the water supply and sanitation (W&S) services available to urban people in developing countries (see Utilities Partnership Report #1). The Partnership is being established at a time when unprecedented windows of opportunity for reform are emerging. Decision makers involved in reform efforts need concise, up-to-date, practical information on reform options and experiences.

This issue reports on a workshop organized at the request of the Government of Peru to examine the possibility of arranging private-sector participation (PSP) in W&S services in Lima. Participants brought together a wealth of information on options for PSP in the sector and experience on what has worked--and has not worked--in several countries.

### Private Participation in Water & Sewerage: An Answer to Lima's Problems?

The three-day workshop was held in early December 1992 in Washington. Organized under the Utilities Partnership and convened at the request of the Government of Peru, the workshop was designed to provide Peruvian authorities with information about the experiences with PSP in a variety of other countries, and to draw conclusions relevant to the political, social and economic circumstances of Peru.

Peruvian participants included the Vice-minister for Infrastructure, members of the government's privatization committee, officials of the Lima Water Company (SEDAPAL), representatives of the Inter-American Development Bank's (IDB) Peruvian project unit and the Pan American Center for Sanitary Engineering in Lima. The seminar also attracted a delegation of sector staff from Brazil and representatives from UNDP, the IDB, and World Bank.

Presentations included case studies of PSP in seven developing and industrialized countries and discussions of key regulatory, financial, and economic issues. Funding to cover the costs of the meeting was provided by UNDP, the World Bank, and the Japanese government.

This report summarizes key lessons that emerged and their relevance to Lima. Seminar papers are available from the Water and Sanitation Division of the Transport, Water and Urban Development Department of the World Bank.

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## **Water Supply Services In Lima**

Between 1975 and 1990, the population of Lima doubled. Seven million persons, one third of the population of Peru, now live and work in the city and by 2000 the population is projected to exceed 9 million. Presently, about 80 percent of the population is provided water and sewerage service through house connections, while 20 percent rely on public hydrants or water vendors. Fewer than half the connected houses receive water 24 hours a day, and water pressure in 70 percent of the districts is below recommended levels. If losses and waste were reduced to reasonable levels, production would be more than sufficient to meet current needs, but because there is practically no water metering, losses and waste are very high. As a result, water rationing is on the increase. While tariffs barely cover operating costs, the costs incurred by consumers, especially the poor, for the storage and transportation of water to meet needs that are not satisfied by the public service are very high.

The Lima Water Company, SEDAPAL, has little autonomy and is subject to pervasive, uncoordinated government interference in day-to-day management as well as investment planning and financing. Investment decisions have favored the

expansion of the distribution network without regard to the availability of water or the need to improve the maintenance of existing facilities. SEDAPAL has a well-qualified staff, and middle management turnover is low. With 5.3 employees per 1,000 connections, its labor productivity is lower than that of similar utilities in the region. Although in 1992, revenues exceeded operating expenditures, the latter were well below the level required for adequate maintenance, and have been for many years. As a result, most assets have been poorly maintained and are now in need of rehabilitation.

## **Water Resources Management Issues in Lima**

Rapid growth and industrialization are placing tremendous stress on the scarce water resources of the Rimac River basin. Competition among households, industries, farmers, and the hydroelectric company for the most readily available sources is intense, and there are no effective mechanisms for protecting and allocating water resources and ensuring that they are used efficiently.

In the absence of an effective framework for pollution control and environmental protection, the misuse of water resources is compromising the health of the population, exacting high economic costs, and degrading the quality of the resource base. The current cholera epidemic has resulted in

almost three thousand deaths and the loss of an estimated one billion dollars in agricultural and tourism revenues. Seawater intrusion is becoming a concern, as industries and SEDAPAL overexploit groundwater resources and lower the water table. Untreated domestic and industrial wastewater and poorly controlled solid waste have polluted ground, surface and coastal waters. As a result, the cost of maintaining the current production level for urban use is rising. Treatment costs have increased by 30 percent in recent years, and Lima may soon be forced to move its water intake upstream.

Waste contributes to the costliness and ineffectiveness of service. Unaccounted-for water (UFW) in the Lima distribution system due to illegal connections and leaks is estimated at 50 percent. SEDAPAL is not financially autonomous; its resources are severely constrained and accountability is lacking. It has neither the incentive nor the means to control UFW. Since tariffs are very low and only 14 percent of connections are metered, consumers also have little incentive to conserve water or to repair leaking fixtures. A proposed scheme to transfer water from the Atlantic watershed to meet the growing demand in Lima would provide water at a very high cost—double that of water from the existing sources. In contrast, a strategy to improve management of available resources would be less costly and would make it possible to postpone

or reduce the size of new investments. Eliminating leaks would make more water available to consumers. Increased metering, the elimination of illegal connections, water tariffs that reflect the true cost of water, and an effective billing and collection system would motivate conservation. Water flowing into the sea could be used to replenish the aquifer and make it possible to increase the use of groundwater when the flow in the Rimac river is low. The creation of incentives for water reuse for industrial processes and irrigating parks is another option that would relieve pressure on the resource base.

While managerial autonomy for SEDAPAL, better investment planning and full cost recovery for its services would go a long way toward improving the quality and reliability of service, the reform of the framework for production and distribution of urban water services alone, including possible private sector participation, will be inadequate to solve Lima's water supply crisis. An appropriate regime for water resources management and environmental protection is urgently needed as well.

## **Lima's Investment Needs**

Lima's financial resource requirements in the water and sewerage sector over the next decade are estimated at \$200 million for urgent rehabilitation works, and from \$700 million to \$1.5 billion (depending on the level of service) to achieve full service coverage and to improve service quality and reliability. These estimates do not include sewage treatment facilities or large water transfer schemes such as the one mentioned in the previous section. Raising investment resources of this magnitude represents a major challenge; in recent years, annual investments have amounted to only \$15-20 million in Lima, and \$35 million nationwide.

A tariff regime that ensures full cost recovery (while allowing subsidies for low-income households) will be required. But even if investment costs are recoverable in the long term, other barriers to raising finance for the costly investments required still have to be overcome. Strategies for attracting private investors and sharing risks are needed.

## **Lessons from Buenos Aires and Caracas**

Two recent attempts to arrange concessions for large municipal water and sewerage services in Latin America have attracted attention. In Caracas, Venezuela, the effort failed to attract responsive bids. In Buenos Aires, Argentina, the effort has been more successful: in December 1992, a concession was awarded to a consortium of local and international companies.

The arrangement chosen for both cities was based on the French concession model. Under such an arrangement, a private or mixed enterprise assumes responsibility for operating, maintaining and investing in fixed sector assets, which nevertheless remain the property of the public sector and must be returned to the appropriate public authorities in good condition at the end of the contract period, usually 25 or 30 years. During this time, the concessionaire assumes all commercial risks and most financial risks. In the case of Caracas, the concession would have lasted for 25 years. In Buenos Aires it is for 30 years.

In both cases, the preparation process took about three years, including one year to prepare bidding documents and draft the pertinent legal documents. The quality of existing operational and commercial information was very poor. Revenues could not be audited;

financial projections and estimates of water consumption and demand were based on rough calculations. Maintenance had been inadequate and little was known about the actual condition of the assets and the extent of rehabilitation requirements. To overcome these shortcomings, in Buenos Aires considerable attention was devoted to gathering information on the quality of assets and costs of operation. However, the same was not done in Caracas. Technical assistance for the preparation process in Argentina was provided under a World Bank loan at a cost of about \$4.5 million. The Venezuelan government chose not to avail itself of World Bank or other external assistance.

Large foreign private water companies were invited to prequalify. Several of them formed consortia with other foreign and local partners. In both cases, a total of five international consortia, incorporating various groupings of British, French, Spanish, and local companies were prequalified, and interest appeared to be keen.

Selection followed a two-phase process in which the financial proposals of only those bidders which passed the technical evaluation would be considered. For the technical phase, service quality and coverage targets were established and bidders were invited to present technical solutions to meet the target goals. Required elements differed somewhat in the two cases. For Buenos Aires, a mandatory

basic investment program totaling \$1.5 billion, including sewage treatment facilities, was foreseen. For Caracas, the investment program was not specified and final disposal of sewage was not included in the proposed concession. In both cases, the financial selection criterion was the bidders' proposed price of water. Whereas in the case of Caracas, the possibility of negotiations following the award of the contract was strictly excluded, the award process for Buenos Aires left open the possibility of negotiations to work out final details.

Bidding documents for the two contracts laid out in broad terms the proposed regulatory regimes and the membership of the proposed regulatory agency. In both cases the mandate of the regulatory agency was to be limited to the capital city. In neither case were the structure and operational procedures of the agency detailed in advance. In Buenos Aires, where the assets belong to the federal government, the "Ente Tripartito," with equal representation from the federal, provincial, and municipal governments, is now being established. The processes by which it will carry out regulatory functions and the extent of its authority remain to be defined, and will inevitably evolve over time. In Caracas, where several metropolitan municipalities own the assets, a "Mancomunidad Municipal" representing the municipalities would have been responsible for regulation, but this proposal lacked cred-

ibility because the municipalities had never reached any agreement on the arrangement; indeed their relations were fraught with tension.

The water companies of both cities were characterized by excess staff. In Buenos Aires, a voluntary reduction of 1,800 employees, out of a total of 8,000, was negotiated with the union. The operator is expected to absorb the remaining payroll, free of liabilities and retroactive payments. Because further reductions are clearly warranted, the government has agreed to provide up to \$38 million in severance benefits for future reductions. In Caracas, all 4,000 employees were dismissed at a cost of \$100 million to the government. A new autonomous company was established and some staff were rehired under a new staff regime. Despite the high cost, the approach adopted in Caracas might have been considered preferable, because it would have permitted the new arrangement to be initiated unencumbered by excess staff and liabilities. However, in practice, the execution of the lay-off program encountered a number of problems.

The tariff situation in the two cities differed substantially. At the equivalent of \$.04/m<sup>3</sup>, the average tariff in Caracas represented only a fraction of operating costs, whereas in Buenos Aires the average charge of \$.40/m<sup>3</sup> covered all operating and maintenance costs. Since it was assumed that the pri-

vate operator would be more efficient, bidders for the Buenos Aires concession were expected to offer initial rates that were lower than the existing tariff. In fact, the winning bid was about 20 percent lower.

Finally, exchange rate risk can be a major deterrent to foreign investment, and the risks in Venezuela are higher than in Argentina. Under Argentine law, investors are protected against exchange rate changes. In Venezuela, all risks associated with exchange rate devaluation would have been assumed by the operator.

In summary, although the approaches that were adopted in the two cases had much in common, there were several features of the Caracas situation that seemed to undermine what was an otherwise sane approach. First, and perhaps foremost, the lack of good working relationships among the Caracas municipalities was a weakness. This might have been overcome by strong political commitment at the highest levels of the Venezuelan government, but the central government was besieged with a variety of political difficulties which effectively prevented it from assuming strong leadership in this effort. The very low tariffs, inadequate technical preparation and the rigidity of the contract terms were additional disadvantages. In contrast, the strong political commitment of Argentina's federal government, its previous experience in privatizing a large number

of state enterprises, the higher tariffs and the lower overall riskiness of the country's political and economic environment appear to have made the difference for Buenos Aires.

### Lessons

- Consensus building and negotiation among interested parties regarding the model for private participation and the related legal instruments help create a positive environment that will attract the private sector and gain its confidence.
- Political support and the active participation of top leadership in marketing the arrangement is critical.
- The participation of multilateral agencies and independent consultants may contribute to the transparency of the process and enhance credibility.
- The adequacy of revenue level and tariffs prior to the initiation of a concession affect the willingness of the private sector to get involved.
- Political and economic risks, particularly exchange rate risks, to the private sector should be assessed and appropriate mechanisms for their alleviation created.

## Chile's Regulatory Reform

Water supply and sewerage services in Chile are among the best in Latin America, both in terms of the quality of service and efficiency of operations. In 1991, 98 percent of the population had access to water supply, and over 78 percent to sewerage (100 percent and 90 percent, respectively, in urban areas). Staff productivity is the highest in the region.

Sector reform was initially pursued in the 1970s through both command and control directives as well as incentives to improve performance. In Santiago, extensive use of service contracts with private firms for a variety of operational and maintenance tasks contributed to remarkable achievements in staff productivity and cost containment.

Until 1990, regional utilities operated under the aegis of SENDOS, an agency of the Ministry of Public Works (MOP). Tariffs were determined by the Ministry of Economy (ME) and MOP on the basis of cash flow needs. In the late eighties, average tariffs were about 50 percent of total costs (including investment), but cross subsidies kept the rates for minimal consumption by poor households even lower. Renewals and expansions were constrained as a result of inadequate cost recovery and dependence on budgetary resources for investments, and the quality of service deteriorated during the eighties.

In 1990, the government introduced a more transparent and effective regulatory framework, and a commercial approach to sector operations. Sector reforms included: (a) the separation of operational and regulatory functions; (b) the establishment of a consistent rate policy for both public and private operators that would promote both efficiency and full cost recovery; (c) the definition of a clear set of operational policies; (d) the replacement of cross subsidies with direct subsidies to poor consumers; and (e) the creation of tradable property rights for water resources. These reforms were enacted into law between 1988 and 1990.

The Superintendency of Sanitary Services (SISS) is now responsible for establishing service standards, reviewing tariffs, approving investment plans, and enforcing regulations affecting these areas. SISS is autonomous and its director is appointed by the President. ME plays an active role in coordinating the regulation of all public services and gives final tariff approval. There is an agreed upon plan, articulated in government decrees, for tariffs to cover the full cost of service (including investment) by 1994.

All regional water and sanitation utilities including EMOS (Santiago) and ESVAL (Valparaiso) have been transformed into stock companies that are fully owned (98%) by CORFO, a central government development corporation. Sector companies have been de-

centralized and are supposed to enjoy autonomy in their operations. They have a clear mandate to improve services and operations and maximize the return to stockholders within tariff and service constraints. Nevertheless, CORFO still plays a direct role in investment planning and management.

While the new system represents some improvements, it is not problem-free. The regional companies, even though decentralized in geographic operations, are still firmly controlled by the center. Local governments and communities are involved very little in company affairs. This is inconsistent with Chile's decentralization policies which call for transferring responsibility for urban utilities to local governments once the companies achieve financial autonomy. Another problem has arisen from the fact that, since tariffs are now based on actual costs, they vary significantly from one region to another. Costs are often highest in areas where the capacity of the population to pay is lowest, raising serious transregional equity questions. Solutions, under study, would involve modifying the tariff and subsidy systems.

Water pollution poses major challenges, particularly in large urban areas. The economies of agglomeration for waste water treatment are difficult to capture when sewerage services are provided by more than one agency as

they are in Santiago, and a strategy for resolving this problem has not been formulated.

At present, participation of the private sector is almost exclusively through service contracts. Small privately owned and operated systems exist in high-income neighborhoods, but these have little applicability to broad-based service provision. The government is considering the possibility of private participation in BOT (build, operate, and transfer) and BOO (build, own, and operate) arrangements and other private investment schemes that would increase financial flows to the sector.

### **Lessons**

- ☛ Even service contracts, the least investment-intensive form of private-sector participation, can significantly enhance productivity.
- ☛ A clear regulatory framework is essential and should include rules about how rates are determined.
- ☛ There are strong arguments for delinking subsidies for low-income households from the finances of sector companies and the tariff structure through direct payments by the government on behalf of the beneficiaries; but direct subsidies require effective administrative arrangements, as well as budgetary resources, which may be substantial if entire regions

of the country are affected.

It is very difficult to guarantee the autonomy of, or decentralized control over, centrally owned state enterprises.

### **The French "Model" as Applied in Paris and its Implications for Lima**

The arrangements for private participation in water services in Paris demonstrate that the French model is not a single, rigid approach but a set of principles that are applied flexibly. The Paris example also illustrates how key concepts such as risk and competition shape the mode of private sector involvement. Finally, this case provides a fascinating example of the role of consumers in the regulatory process.

Private investors began participating in the water supply of Paris in the mid-1980s. One initial innovation was that the distribution system was split into two geographically distinct areas. "Affermage" contracts were negotiated with Lyonnaise des Eaux Dumez for the left bank and Compagnie Generale des Eaux for the right bank. Under these contracts the private firms assumed responsibility for operating and maintaining the publicly owned distribution system as well as the commercial risks associated

with service provision. While these contracts were not tendered competitively, they have resulted in keen competition between the two largest water companies in France as each vies to outperform the other in Paris. Since the contracts were arranged, performance has increased dramatically, with the level of unaccounted for water dropping from 22 percent in 1987 to 12 percent in 1991.

A second important element pertains to information and risk. It might be assumed that in a modern city in an industrialized country, detailed information about the condition of assets would be available. In fact, there was considerable uncertainty about the status of the assets prior to private involvement. As a result, a private operator assuming responsibility for the facilities as a whole would have faced a high level of risk. Because the risks associated with distribution differ from those associated with production and treatment, it was possible to structure arrangements for PSP that kept risks to the private operators within acceptable limits.

The private operators felt that they could estimate the condition of the distribution system on the basis of experience elsewhere, and that any discrepancy between their estimates and the real conditions would not, in any event, be unmanageable. As a result, they were willing to assume responsibility for distribution and commercial operations. Initially, their contracts

included replacement of mains less than 300 mm in diameter. After several years, during which the operators acquired better information on the system, they assumed responsibility for replacement of all components of the distribution systems.

In contrast, production and treatment depend on a limited number of major pieces of infrastructure, the failure of any one of which could be catastrophic. Accordingly, the private operators would have demanded a very high premium to assume this risk. The solution in this case was to form an autonomous production company which is jointly owned by the city of Paris (70 percent of equity), and the two private companies (15 percent each) and operated like a private enterprise. This arrangement has increased efficiency markedly. The staff of the production company has decreased by over 60 percent in its six years of operation. Moreover, the process of raising revenues for the large works needed for bulk water supply has been transparent; they were financed largely through tariff increases.

The French system works like a ladder. Initially the private partners chose an appropriate rung. If circumstances warrant, they have the flexibility of stepping up or down. Eventually production functions for Paris may be assumed entirely by the private sector. In other municipal areas of France, private operators initially assume management functions only and

may gradually increase their involvement to include responsibility for financing renewals and investments.

The Paris experience, moreover, is illuminating with regard to regulation. There is a single person in the city government who has a regulatory role. Accountability in the Paris system is more direct and relies on competition between the two distributors. A high premium is placed on providing user-friendly, reliable and timely information to the public at large. This includes information on discrepancies between service standards and performance, and information on the resultant fines levied against the operators. Thus, it is the public, the press, and consumer interest groups that are in fact the principal regulators of the suppliers of water in Paris.

### **Lessons**

- Where risk is high, ways should be found for sharing risks. This usually involves a public-private partnership of some sort.
- The initial arrangement should be seen as a step on a ladder, with the public and private partners renegotiating in good faith as information improves and conditions change.
- Regulation should not be perceived exclusively as a bureaucratic task, but as one that should involve consumers, by provid-

ing information on service standards, and on actual performance and by providing mechanisms whereby consumers can use this information to hold the service providers accountable.

- Competition is even more effective than regulation and, where feasible, great benefits can be gained from structuring arrangements so that competition between private companies is ongoing.

## **Two West African Cases**

The experiences of Cote d'Ivoire and Guinea with PSP in urban water services demonstrate both the flexibility of the operational contract model, and the importance of well-designed regulatory frameworks.

A mixed enterprise assumed technical and commercial responsibility for all urban water supply services in Guinea in 1988. A lease contract was arranged on advantageous terms in spite of a number of pre-existing problems, any one of which could have discouraged the private sector: extremely poor performance of the sector; low tariffs; lack of information on assets, connections, and effective demand; and the overall riskiness of operating in this country. While the operator assumed all commercial and technical risks, re-

sponsibility for investment was retained by the public sector, and exchange rate risks were shared. The government committed to a schedule of substantial tariff increases aimed at achieving full cost recovery over time and, during the interim, the World Bank agreed to finance a declining part of the foreign exchange costs of the operator's contract. The government, in addition, guaranteed that tariffs would be at least adequate to cover the remaining part of the operator's fee.

Results thus far have been promising: the collection rate has increased from 20 to 70 percent, and technical performance is better. This success is attributable to the adoption of a transparent regulatory framework prior to tendering; and the design of realistic arrangements for sharing risks. However, the publicly implemented metering and rehabilitation program was subject to administrative delays, compromising technical and commercial improvements during the first two years of the arrangement. Project designers believe that in future operations, this problem could be overcome by incorporating rehabilitation into the lease contract and arranging for the World Bank and other donor financing to be on-lent to the operating company.

The case of Cote d'Ivoire demonstrates the possibility of progressing to more intensive forms of PSP, and the importance of linking investment planning with demand,



especially when responsibility for investment is retained by the public sector. Ivorian urban water supply services, which have been operated under a variety of lease contracts and concessions for more than 30 years, are among the best in the region. The original contract with SODECI was a concession for water supply in Abidjan. In the early 1970s, SODECI was also awarded a lease contract (which does not include investments) for water supply in other urban centers, a maintenance contract for Abidjan sewerage and drainage, and responsibility for maintaining rural water points.

By the mid-1980s, while the company's financial performance was good, the government's sectoral financial performance was seriously deficient as a result of flaws in the overall institutional and policy environment. A fragmented institutional framework in which those responsible for planning investments were neither dependent on the revenues generated, nor responsible for repaying the loans, led to over-investment by the government in production facilities. In addition, high industrial tariffs, which were intended to raise revenues to support rural services, in fact depressed demand for water and, consequently, the government's share of revenues under its agreement with SODECI.

In 1987, the government restructured the sector, moved rural service out of SODECI, eliminated cross-subsidization of rural

water service, and negotiated a comprehensive concession with SODECI under which it is responsible for operations and investments for all urban water supply services in the country. Authorities plan to upgrade the management contract for sewerage to a lease contract in the near future. The company now receives no operating subsidies, and all new investments in water supply assets are self-financed.

### Lessons

- ☛ It is important to adopt a transparent institutional and regulatory framework in advance of the contract tendering.
- ☛ The regulatory framework should include incentives and sanctions to ensure that all actors, public and private, are held accountable for their performance.
- ☛ When investment and operational responsibilities are separated, it is essential to provide formal coordination mechanisms and to create incentives for investment planners to ensure commercial viability of new investments.
- ☛ Operational contract models allow risks to be shared, and the contractor to assume greater commercial and investment risks over time.

## Taxes Discourage US Private Sector

There is surprisingly little private investment in water supply, sewerage and waste treatment in the US. Although water services in a number of small and medium sized cities are owned and operated by private firms, the trend is away from private ownership and investment. Management contracts, particularly for treatment plants are gaining in popularity, but these are short term contracts of three to five years and involve no investment and little commercial risk.

Limited private involvement is largely due to current tax laws and financial arrangements that favor public ownership and investment. Municipal companies are usually exempt from taxes which private companies must pay. Private companies cannot take advantage of tax-exempt municipal bonds, or state and federal grants for wastewater treatment that are available only to municipally owned systems. Thus, capital for private water companies is more expensive. As a result, tariffs for privately owned systems tend to be higher than those for public systems. Critics of the existing arrangements have called for a level playing field that would give private water companies the same advantages and incentives as the public sector.

## **Lesson**

- ✦ Tax laws and financing arrangements can have a significant impact on the ability of the private sector to participate in public services.

## **Polish Reforms Encourage PSP**

Countries of Eastern Europe are facing the tremendous challenge of shifting from centralized control of their economies to more decentralized and market-oriented models. In Poland, a legal and institutional framework is emerging in the water and sanitation sector which, it is hoped, will encourage the development of efficient companies and private participation in both operations and investment finance.

In 1991, the central government transferred water supply and sewerage assets to municipal governments. This was done in spite of the fact that, in many instances, several municipalities share production and distribution systems, making separate ownership and operation inefficient. To redress this anomaly, municipalities are now being encouraged to form regional joint stock companies to which each municipality transfers its water supply assets in return for a share of the company stock. If this pattern is widely adopted, there will be about 500 companies serving the 3,000 Pol-

ish municipalities. These companies are expected to be fully autonomous and operate like private companies under the commercial code making them subject to the same taxes as private companies.

Ultimately, water supply services are expected to be completely self-financing and to receive no operating or investment subsidies from the Polish government. Private participation is possible through operational contracts with the companies, as well as through the acquisition of shares in the joint stock companies. Operational contracts with foreign companies have already been arranged in one or two cities.

Since most facilities are in poor condition and will require substantial rehabilitation and upgrading, it will be essential to attract private investment finance to supplement official sources. The World Bank could assist by lending directly to the water companies or by partially guaranteeing private investments against sovereign risks. This guarantee mechanism is a fairly new lending instrument which is available to selected countries that are close to being creditworthy for commercial lending.

World Bank funds are limited and their impact needs to be maximized. One proposal that would achieve this is to establish a municipal water fund in which funds lent by the World Bank, the European Development Bank, and other donors, as well as private investment banks, would be mixed and

lent to the water companies on blended terms adequate to cover all costs. In this way, the distortions and inequities that might occur if concessional finance were made available to some companies while others were forced to seek more expensive private finance would be avoided. The disincentives for private investment that exist in the U.S. water supply sector would also be avoided, since all water companies would be subject to the same tax regime and have access to the same sources of finance.

## **Lessons**

- ✦ In designing a new legal and regulatory framework for the water sector, it is important to allow for flexibility in converting from public to private operation and for the evolution of the system over time.
- ✦ Financial policies for the water sector need to incorporate strategies for leveraging private sources of finance.

## **Lima: Next Steps and Possible Options**

On the last day of the seminar, the president of the Peruvian government's committee charged with arranging private participation in Lima's water and sewerage services (CEPRI-SEDAPAL) outlined the next steps to be taken. In the first stage, a new regulatory framework will be introduced to clarify the role of the state in tariff and other policy areas, make private participation possible, and meet the requirements of the private sector. Studies to assess the condition of assets will be undertaken, and other essential information will be collected. Management improvements will be introduced in SEDAPAL in anticipation of private participation.

During a second stage, consultants will assess investment, rehabilitation and operational requirements, and recommend arrangements for private participation. The committee would like to consider a variety of operational and financial options and risk-sharing arrangements, and may ultimately choose a mix of options for different parts of the system. Once the choices have been made, bidding documents will be prepared.

We recommend that, prior to structuring the final arrangements, attention be devoted to the issue of water resources. The preparation phase could focus on the identification of various options for

increasing the availability of water, including end-use conservation, reduction of unaccounted-for water, and reuse. The costs of these should be compared with the cost of developing new sources. Water resource allocation and pricing policies need to be adopted. Such an approach might enhance the possibility of successful private participation by reducing the size and riskiness of required new investments. It might also create incentives for other types of private investment, such as for industrial waste water reuse schemes.

Lima's committee is considering the possibility of a gradual approach to PSP, initially through operational contracts, and eventually, once confidence has developed on both sides, including larger and larger investment responsibilities. Another option, which could be combined with a gradual approach, is to separate production from distribution and seek private involvement in both, but on different terms and possibly phased in time, taking into account the investment requirements and risks associated with each, similar to what was done in Paris.

**This is the second of a series of reports issued by the Utilities Partnership. They are intended to be a flexible and varied means for disseminating practical and timely information. Some reports will be more journalistic in style and tone. Others will be more detailed, technical reports on specific issues. Under preparation, for example, are papers on the recently awarded concession for W&S in Buenos Aires, the public-private partnership for W&S in Paris, and a regulatory and institutional framework for improving water and sewerage services.**

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