Roundtable Executive Summary

Water in Brazil:
Implications for Project Development and Technologies

Rio de Janeiro, Brazil
August 30 and 31, 2001

Introduction

Sixty people attended the Institute of the Americas' Water Roundtable held in Rio de Janeiro, Brazil, on August 30 and 31, 2001. Attendees included representatives from public and federal governmental agencies responsible for water policies and sanitation and for public services of water supply and sewage treatment. Representatives from engineering and law firms, equipment suppliers, construction companies, and investment banks were also in attendance.

The roundtable assessed five major topics: water resources policies, water supply and sewage treatment, water reuse in industries, and the implementation of sewage treatment concessions (its regulatory and financing aspects and the availability of new technologies).

Conclusions

The major conclusions are as follows:

- In the past, water resources and sewage treatment in Brazil were discussed separately. Today, however, water resources and sewage treatment are discussed together since there is a direct correlation between water resources, sewage treatment, and public health and the environment.
- The recently amended "Water Law" emphasized that water is a limited natural resource with a high economic value and must be regulated.
- The water resources management should allow multiple uses of water.
- Basins should be treated as a territorial unity of development, independent of geographic borders and politics.

The following challenges were identified at the roundtable:

- The reduction of water pollution and water scarcity.
- The efficiency of sewage treatment and collection systems (only an estimated 20% of the urban population benefit from sewage treatment and collection).

The federal government has many concerns regarding the scarcity of water, including the massive water losses through treatment with the average national water loss as high as 40%.

- A water conservation program can be complemented with a program of reclaimed and reused water.
- Different industries already reduce costs by reusing water, by efficient water management, and by the implementation of new technologies. Aracruz Celulose and Petrobras are two such companies.

The financial necessities for sewage treatment are expected to reach R$40 billion. Consequently, international investments will be needed. The major conclusions are:

- The water industry is continuing to grow and can provide an excellent opportunity for international investors.
- Latin American countries are willing and open to international investments, especially Brazil.
- Implementing sewage treatment in Brazil was discussed, including the possibilities of operational contracts and maintenance, BOT (Build, Operate, and Transfer), and private concessions.
- Meetings and forums held by representatives from law offices and investment banks (including Banco Nacional de Desenvolvimento Econômico e Social-BNDES) have shown that the relationship between clients, banks, stakeholders, operators, and consultants could be achieved harmonically. A clear and defined regulatory scenario is necessary.

It was concluded that the lack of sewage treatment policy in Brazil and the political complexities are obstacles for direct private participation at any level.

- Along with the concession of sewage treatment, regulatory aspects should be privatized. The regulatory agency must be strong both at state and local levels.
- The relationship between sewage treatment policies, public health, water resources, and the environment must be improved.

Major Projects

In the discussion and networking a number of pending projects were mentioned, such as for example:

Pinheiros River Dissolved Air Flotation (DAF). This project is an interesting case of the interaction with power generation and drinking water supply and the surface water contamination of the Tiete River. As a result of this contamination, the outflow of the Pinheiros River into the Billings reservoir was halted. This had two secondary effects: One, a reduction of the power generated by the 900 MW power plant to 20% of its capacity; Two, a controversial problem with the potable water supply of 4 M^3/sec., in the SW sector of Sao Paulo. A project cleaning the Pinheiros River with Dissolved Air Flotation that could solve all these problems simultaneously is being studied. Estimated project value is 100-200 million dolares.

Tiete River Clean Up-Second Phase (Sao Paulo.) This is São Paulo's state water and sanitation company (SABESP) US$400mn second stage cleanup of the Tiete river watershed that drains Sao Paulo's metropolitan area. Enlargement works will take some 30 months and stretch for 24km along the river. River remediation will take some 10 years. The cleanup will allow Sabesp to continue efforts through 2005 to reduce river pollution caused by industrial waste and invest in sewer systems, pumping stations, piping and water treatment. Stage two is expected to raise the metropolitan area treated sewage rate to 48-55% and connect 400,000 more households to the sewer system. It also entails launching a program to make Sao Paulo metropolitan area residents aware of the need to properly dispose of solid waste.

The **Guanabara Bay Remediation Program (PDBG)**, ***(Rio de Janeiro).*** The State of Rio de Janeiro is undertaking a significant clean-up project of the Guanabara Bay Basin, an area that affects 4,000 sq. Km. of land, 35 rivers, a 8.6 million population, and approximately 6,000 industrial plants. The project includes sewage and solid waste treatment and industrial pollution control. Initial implementation of the project was delayed from 1995. PDBG's first phase has five components: 1) potable water and sewerage works; 2) solid waste management; 3) river drainage and channeling works; 4) digital mapping; and 5) complementary works, such as facility upgrades and personnel training. Approximately 20 companies have purchased bidding rules for a tender launched by Rio de Janeiro state waterworks company Cedae in July, 2001 to manage works for the PDBG program. Offers for a US$2.5mn, 26-month contract are due November 13, 2001 with a winner expected to be announced in December. The winner will supervise PDBG's US$793mn first phase, for which the Inter-American Development Bank is putting up US$350mn, Japan's Bank for International Cooperation US$237mn and Rio state US$206mn.
The secretariat has identified four principle hydrographic basins for action in PDBG II: Alcantara (Sao Goncalo municipality), Iguacu-Botas (Baixada Fluminense), and Acari and Bangu (both in the Rio de Janeiro municipality). Current treatment of wastewater around the Guanabara Bay is less than 10%; by the end of the first phase in 2003, approximately 55% of the wastewater should be treated and by the end of the second phase, this figure should rise to more than 80%.

Brazil's Rio de Janeiro state government is working to recover the credibility of the PDBG. This program was first launched in 1994, but most of the progress has been stifled by a lack of commitment from the federal and state governments in providing matching funds for the international funding. The program has been revived in the last two years, and a number of projects have been successfully implemented. The government is currently presenting a number of achievements from the first phase to a team of seven experts from the Japan International Cooperation Agency (Jica), which is currently touring the bay.

Todo os Santos Bay Cleanup (Bahia-Salvador). This project is to extend and upgrade the waterworks system in the city of Salvador. Embasa plans to award four contracts covering different parts of the northeast Brazilian city and network. The project's goal is to reduce the pollution generated mainly by domestic sewage delivered into rivers that flow into the Todos os Santos Bay. The project affects the city of Salvador and other small cities surrounding the bay. The contracts are part of the Environmental Sanitation Program for Salvador and the municipalities of Todos os Santos Bay, for which the Inter-American Development Bank is providing some US$264mn financing out of the US$440mn total cost. Current status of project: A consortium formed by Tams/Noronha/Umal was selected to provide advisory services for the management of the Todo os Santos Clean Up Program. CH2MHILL prepared the solid waste plan for the BTS project. Breakdown is $331 million contracted, $58.3 million under bidding process, $10.5 million to be tendered, $40 million financial costs. Embasa plans to award four contracts covering different parts of the northeast Brazilian city and network. Bahia's state-owned waterworks company Embasa has delayed the reception of bids for contracts to extend and upgrade the waterworks system in the city of Salvador until June 8,2001