

Indo-US Financial Institutions
Reform and Expansion Project -
Debt Market Component
FIRE(D)



FIRE Project Notes Compilation

February 2004



INTRODUCTION

The Indo-USAID Financial Institutions Reform and Expansion (FIRE-D) project, a joint initiative of the United States Agency for International Development and the Government of India, assists municipal and state governments in India to develop safe and sustainable urban environmental services (water, sewerage, and solid waste) and to ensure that the poor have access to them.

Based in New Delhi, the project aims to achieve this goal in three ways. First, by increasing participation of municipalities, the private sector, and community organizations in the development and delivery of commercially viable urban infrastructure services. Secondly, by improving the ability of municipal and state agencies and other urban professionals to manage urban growth, mobilize resources, and improve environmental services. Thirdly, by supporting the development of a market-based urban infrastructure finance system.

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Called the FIRE-D project – the “D” refers to “debt” – the project helps cities mobilize resources by issuing bonds, obtaining loans from financial institutions, or using other debt financing mechanisms for urban infrastructure.

The project staff, primarily Indian professionals, assists central, state and local government officials. Partner organizations also provide technical assistance, financing, training, and policy advocacy. The policy advocacy work with central and state agencies aims to create a supportive environment for cities to make vital reforms. The project assists Indian cities with project development and financing, resource mobilization, decentralization, and capacity building.

The project has achieved significant results in the ten years since its beginning in 1994. Some of these successes, as well as much work that remains to be done, are described in this compilation of selected *Project Notes*. This compilation groups the *Notes* by three closely related themes: municipal finance; policy framework for municipal finance; and commercial viability of urban services.

Each *Project Note* captures lessons learned from specific FIRE-D project activities. Comparing *Project Notes* on one theme provides a view, over time, of how critical issues related to urban infrastructure have been identified and addressed in India. By distributing the *Notes* to urban officials throughout India, the project helps disseminate key lessons learned. This is one small way to enable urban policy makers and managers to better understand what works and what does not.

This compilation includes 14 of the 31 *Project Notes* published to date. All *Project Notes* are available online at www.indiaurbaninfo.com under *newsletters*, www.dec.org under *title search “FIRE(D) Project Note,”* and www.tcginternational.net under *documents*.

MUNICIPAL FINANCE TOOLS

Each *Project Note* captures lessons learned from specific FIRE(D) project activities. Comparing *Project Notes* for one theme provides a view, over time, of how critical issues related to urban infrastructure have been identified and addressed in India.

One theme, municipal finance tools, focuses on issuing municipal bonds to finance urban water and sanitation projects. The Municipal Corporation of Ahmedabad was the first city in India to issue a municipal bond, without a state warranty, in 1998. Subsequently, seven other Indian cities have issued bonds for infrastructure development. In April 2002, Ahmedabad issued India's first tax-exempt municipal bond to complete its water and sewerage plan, extending these services to all its 4.5 million residents.

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Project Note No. 2, *Ahmedabad Water Supply and Sewerage Project*, written in January 1998, describes the project and how the investment would be financed by the municipal bond. The Note then shows how the issuance of the bond is the culmination of a progressive program of administrative and financial reform within the Corporation itself as well as of a partnership with the US Agency for International Development (USAID) and the FIRE project.

Project Note No. 17, *Ahmedabad Municipal Bond Issue: India's First Without a Guaranty*, written in July 1999, examines the city's bond issue and the evolving municipal bond system in India. It then identifies issues that must be addressed to facilitate other municipalities' tapping the capital markets via municipal bonds. These issues encompass system development, capacity building, and support for instrument development.

Project Note No. 25, *Lessons Learned from the Ahmedabad Municipal Bond* summarizes an evaluation of the municipal bond issuance to identify lessons for other municipalities considering using this means of resource mobilization. The FIRE project funded the evaluation, conducted in 2000. The Note summarizes the evaluation's findings about obtaining a credit rating, structuring the bond and transaction documents, and using the bond proceeds. Ahmedabad used the bond proceeds and a loan from the financial intermediary, Housing and Urban Development Corporation, guaranteed by USAID, to build the Raska Water Supply system that serves 60 percent of the city's people.

Project Note No. 31, *Pooled Finance Model for Water and Sanitation Projects: The Tamil Nadu Water and Sanitation Pooled Fund*. Pooled financing allows smaller and mid sized cities to access domestic capital markets to finance infrastructure projects. The FIRE project supported the state of Tamil Nadu's Water and Sanitation Pooled Fund to develop such a mechanism and issue a bond in December 2002 that is financing water and sanitation projects in 14 small and medium sized towns. This note describes the background of US bond banks, the objectives and structure of the mechanism, the first example in India (and outside the United States), and the roles of the Government of India and USAID's Development Credit Authority.

Project Note No. 2

Ahmedabad Water Supply and Sewerage Project

The Ahmedabad Municipal Corporation plans to undertake a major investment program for water supply and sewerage services which will address existing deficiencies as well as the demand for services in the future. The Corporation also plans to undertake a capital investment program for other services including solid waste management, roads, bridges and slum improvement. And it will finance these investments, in part, through India's first municipal bond issue. This investment program is the culmination of a progressive program of administrative and financial reform within the Corporation itself, and a partnership developed between the United States Agency for International Development (USAID), the FIRE Project, and the Ahmedabad Municipal Corporation.

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Project Profile

The proposed investment program includes expansion and improvement of water supply and sewerage services within the old city limits as well as newer areas that have been added in recent years. The main components of the water supply project include:

- Source Development through a series of two french wells and sixty bore wells
- Conveyance System
- Additional underground storage and pumping stations
- Transmission Lines in seven new areas
- Augmentation of the existing distribution system in fourteen areas.

The plan proposes to allocate water to customers at 180 lpcd in the AMC/West, and 150 lpcd in the AMC/East. With these allocations, the present supply shall be ensured to the old AMC limits, and in the case of the recently extended East, the supply would be enhanced.

The proposed sewerage project will provide sewage collection, treatment and disposal facilities to a part of East Ahmedabad which is currently unserved. A sewerage project in the developed part of East Ahmedabad will be implemented under Phase II, a short term plan, between 1997 and 2001.

The total cost of investment in water supply and sewerage services is estimated to be Rs. 4890 million (\$140 million). Total cost for water supply components is estimated to be Rs. 4393 million (\$126 million) and sewerage components to be Rs. 497 million (\$14 million). The total costs reflect base costs, price escalation during construction, design and supervision charges, physical contingencies and interest during construction.

The water and sewerage project is positioned within an Urban Finance Framework. The project will receive significant transfers from general sources of the corporation such as octroi and property taxes. Cost recovery for water supply and sewerage services will also be enhanced by revision in taxes, connection charges and other fees related to these services. In April of 1997, the AMC revised taxes and charges in the water supply and sewerage sectors by between 15 and 100% depending upon the user group. As a result of these revisions, revenue is expected to increase by Rs. 500 million (\$15 million) during the 1997/98 fiscal year and by 10 percent per annum in future years. Collection performance is also expected to improve by approximately 25 percent. Connection charges were also revised in 1997, and the minimum connection charge was raised to Rs. 300 for a half inch pipe. The AMC projects 51,000 and 35,495 new connections for water and sewerage services, respectively, by the year 2001.

Ahmedabad Municipal Corporation: A Progressive Record of Reform

During 1992-93, the AMC's financial and liquidity position was under a severe strain. But during the next year, the AMC achieved a relatively low revenue surplus of Rs. 58 million (\$1.7 million). And by 1994-95, the AMC had reached a revenue surplus of Rs. 490 million (\$14 million). This success gave the city a momentum which allowed it to focus on investments in Ahmedabad's urban infrastructure and environment through innovative partnerships with other institutions who have a stake in the future of the city.

In the fall of 1994, the AMC launched a major effort to improve collection of octroi and property taxes. To combat corruption and intimidation at octroi check-posts, and to address inadequate information and monitoring, law enforcement officers and all Deputy Municipal Commissioners were deputed

to supervise check posts both day and night. Municipal accounting systems were also computerized and improved.

Due to these measures, octroi collection increased by over 60%. Turning to property taxes, the AMC cracked down on evaders by conducting raids, issuing attachment warrants and disconnecting water and sewer from those in arrears. Through these measures, collection of property taxes increased by over 55%.

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The municipality also took an important step toward the professionalization of its workforce. For the first time in India, the city recruited certified chartered accountants and recent graduates with Masters' degrees in Business Administration. In one year, the AMC recruited forty such professionals and placed them in key administrative positions with responsibilities in project management and oversight. Improvements in the financial situation of the city allowed it to take up other important activities. Road conditions of the city are being improved substantially, and road and bridge widening projects are underway. Improvements along C.G. Road, one of the main commercial streets, were implemented through a public-private partnership and completed in 1997. The Kotarpur

Water Project, left dormant for some time, was completed in 1996. And the innovative Slum Networking program has been initiated which will improve living conditions for the urban poor in a number of areas.



In 1996, Ahmedabad became the first urban local body in India to request and receive a rating for a municipal bonds issue. Credit Rating and Information Services of India, Ltd (CRISIL), the country's premier credit rating agency, assigned Ahmedabad an "A+" rating for a municipal bond issue of Rs. 1000 million (\$29 million).

The AMC appointed Infrastructure Leasing and Financial Service, Ltd. (IL&FS) as the investment banker for the municipal bond issue. The municipal bond has been developed as a structured obligation with the escrow of octroi revenue of the Corporation to be monitored by an independent trustee, and special covenant on additional debt mobilization. With this structure, the rating of the instrument was enhanced to "AA(SO)".

Partnership with USAID and the FIRE Project

In 1994, USAID took the first step in what grew to become a multifaceted partnership with the city of Ahmedabad. The production of Urban Environmental Workbooks, an urban environmental mapping exercise, was carried out by the National Institute of Urban Affairs. The exercise consisted of the production of a series of city maps reflecting a variety of features such as water supply systems, roads, slum areas, sewerage services, etc. The real utility of the maps was to analyze them in combinations to demonstrate, for example, the coincidence between areas unserved by sewers, and those with a high incidence of gastroenteritis.

This exercise culminated in a workshop, sponsored by USAID, which was attended by municipal officials, community leaders, and others interested in the maps' applications. Ultimately, the mapping exercise demonstrated the importance of information and its role in formulating public policy.

Building on this theme, USAID next sponsored a Comparative Environmental Risk Assessment of the city of Ahmedabad, which was carried out by the Centre for Environmental Planning and Technology (CEPT). The risk assessment identified and ranked a variety of urban environmental health threats, such as air pollution or food contamination, in terms of their severity, impact, mitigation costs and other factors. The results of the assessment showed ambient air pollution to be the greatest threat, and vehicular emissions emerged as one of the greatest offenders.

Armed with this information, the AMC decided to take action against the risks identified, and USAID assisted the AMC to develop a follow-up agenda. The result was a long-ranging process of discussion and study by policy-makers, academics, community leaders and others stakeholders, which resulted in a proposed Action Plan to combat the three greatest risks identified by the assessment: ambient air pollution from vehicular sources and from point sources, and water contamination.

The Project Development Process

The AMC then invited FIRE(D) to provide targeted technical assistance and build its capacity in municipal accounting and financial management, project management and non-tax revenue generation which would improve the AMC's overall

financial position. Once the city was ready with infrastructure investment requirements, FIRE(D), in association with IL&FS, continued to work with the AMC to prioritize investment proposals, conducted detailed financial analysis of the proposed investments and assist in the technical and financial aspects of water supply and sewerage project development. Based on the Project Pre-Feasibility Analysis developed by FIRE(D), a draft Project Report was produced which included technical and financial analysis and a project implementation plan. In addition to working with the corporation, FIRE(D) provided assistance to the range of private consultants engaged by the city. The methodology for evaluating and rating municipalities – the first of its kind in India – was developed by Credit Rating and Information Services of India, Ltd. with the assistance of the FIRE(D) Project, and has since been applied to other Indian cities.

When IL&FS was enlisted by the city to develop the projects' financing package, FIRE(D) assisted IL&FS and the AMC in developing the proposed bond documents and financial planning. FIRE(D) also worked with the city to review the report on the water supply projects produced by the city's consultants and provided key assistance in the integration of water and sewer systems in project analysis; the need to assess water supply investments in relation to other proposed investments; and the need to incorporate the city's own financial contribution into project analysis.

Financing Plan for Water Supply and Sewerage Projects

The proposed projects are expected to be financed through the internal accruals of the AMC, debt from the capital markets and a loan from IL&FS using funds made available by a loan guaranty through the Housing Guaranty Program of USAID and other financial institutions, such as the Housing and Urban Development Corporation and Life Insurance Corporation of India.

In India's first issue of municipal bonds, the AMC will float a Rs. 100 crore (\$30 million) bond issue in January of 1998, with both public and private placement. The bonds have been listed on the Ahmedabad Stock Exchange and will also be listed on the National Stock Exchange. As of this publication, a majority of the issue has already been booked by financial institutions.

Project Implementation Plan

A special structure has been designed for the management and implementation of the AMC's infrastructure investment plan. Project management consultants will be enlisted from the private sector to facilitate the process of project design and approval, tendering, construction supervision, quality control, audit and budgetary controls and payments. This structure is based on the approach developed by the City and Industrial Development Corporation (CIDCO) of Mumbai to successfully execute a number of large projects simultaneously. This CIDCO model has been adapted to meet special requirements of the AMC as a statutory body, and the AMC is expected to adopt this management approach and eventually reform its overall project administrative structure.

The structure will be lead by a Project Coordination Cell, responsible for overall project coordination, monitoring and reporting. This cell will provide updated information on progress of work and assist AMC management to take corrective measures when necessary. A professional project management consultant will serve as Project Management advisor to the Project Coordinator, an AMC officer.

Three Project Management Units — two units for water supply, one for sewerage — will consist of 4-6 AMC engineers who will work exclusively on the water and sewerage project. These units will draw upon the services of professional design consultants throughout the design and tender process. Project Management Consultants will be appointed by the AMC for management of the construction phase.

To remedy the current time-consuming approval process, it is proposed that the Standing Committee and General Body of the AMC give in-principle approval to the project as a whole, and that tenders for the project be directly placed before the Standing Committee for approval without sequential review by other committees. When the estimated costs of the project are ready, the AMC will invite tenders. in anticipation of approval by the Standing Committee. It is expected that this approach will help to reduce delays and cost overruns.

Project Note No. 17

Ahmedabad Municipal Bond Issue: India's First Without a Guaranty

In January, 1998, the Ahmedabad Municipal Corporation issued India's first municipal bonds not backed by a state guaranty. For Indian cities that face an increasing demand for services and, at the same time, a decline in transfers from state and central governments, such bonds are a promising means of tapping capital markets to finance urban infrastructure. As with any innovation, however, time and effort are needed for the necessary support systems to evolve. This Project Note describes the Ahmedabad municipal bond issue, the evolving municipal bond system in India and issues which must be addressed to facilitate the issuance of such bonds in the future.

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In January, 1998, the Ahmedabad Municipal Corporation (AMC) opened a Rs. 1 billion (\$25 million) issue of municipal bonds, the first to be issued in India without a state guaranty. The issue was designed to support the water supply and sewerage components of a Rs. 5.89 billion (\$147 million) infrastructure investment program that also includes roads, bridges and solid waste management. A 75 percent private, 25 percent public issue, its success gave momentum to a growing national consensus that municipal bonds provide a promising alternative for financing urban infrastructure. As interest in this new approach to financing of municipal infrastructure evolves, however, it is important that necessary support and provisions of a municipal bond system develop.

Why Municipal Bonds?

India is facing severe shortfalls in the capital required to finance growing urban infrastructure needs. Estimates indicate that as much as Rs. 300 billion (\$7.5 billion) may be needed annually to provide for India's cities, while Rs. 30 billion (\$750 million), at most, is flowing to this sector annually. As a result of recent liberalization and financial sector reforms, there has been a decline in mandatory investment through the directed credit system. Clearly, new sources of financial resources are needed, and India's nascent capital markets present one opportunity.

Municipal bonds represent an approach to capital market borrowing by municipal and utility authorities, that presents a number of benefits over more traditional financing approaches. Most importantly, borrowing through capital markets imposes market rigor, which requires project development based on commercial principles, that is, project structures that provide for an adequate return on investment, give attention to risk mitigation and allocation and offer secure institutional structures. In essence, development of a municipal bond market represents a step in the

direction of developing a market-based infrastructure finance system.

Scrutiny by the market also focuses attention on municipal performance which, in turn, provides incentives for improved management of municipal finances and services. Municipal bonds also allow for greater flexibility in the timing of investments, because municipalities are not constrained by annual budget cycles and grant decisions made at other levels of government. In light of these advantages, interest in tapping Indian capital markets for urban environmental infrastructure has been mounting.

The Evolving Policy Consensus

Currently, there is an international trend away from financial intermediation, reflecting global recognition of the need for more market-oriented approaches. In India, there has been a growing consensus among policymakers that municipal bonds represent a promising alternative. In 1995, discussion of a municipal bond system was initiated at a national workshop in Bangalore, sponsored by the FIRE(D) Project, on the potential and relevance of a municipal bond system for India.

In the following year, the Rakesh Mohan Committee on Commercialization of Infrastructure Projects, established by the Ministry of Finance, issued recommendations for capital market development which included the development of a municipal bond system in India. The task force set up to assist State Finance Commissions (SFC) also recognized the need to promote municipal bonds, and many SFCs have included promotion of market borrowing through municipal bonds in their recommendations.

The Ninth Plan Approach Paper produced by the Planning Commission in 1997 recommended the issue and trading of municipal bonds, and the Working Group

for Urban Water Supply and Sanitation Sector for the Ninth Five Year Plan recommended direct market access for local bodies through a municipal bond system.

The First Step: A Municipal Credit Rating

A credit rating is a key element of the pre-sale stage of a municipal bond issue, for it provides an indication of the risk level associated with an issuer's ability to repay debt. The rating exercise focuses on four major areas relative to the municipality's profile, its existing operations; its financial and managerial performance; and the specific project for which it intends to borrow funds. In this way, it has also come to be regarded as a solid indicator of a city's performance and competitiveness.

The city of Ahmedabad took the first step toward issuance of municipal bonds when it requested and received a municipal credit rating in February, 1996. India's first municipal credit rating, the city received an A+ for a general obligation of Rs. 1 billion (\$25 million), which indicated adequate assurance that investors would be repaid.

Ahmedabad's positive rating reflected a financial revival that began in 1994. Though the city had accumulated significant losses up to that point, it achieved a revenue surplus of Rs. 380 million (\$9.5 million) by the end of March 1995 through strong, committed leadership and improved revenue collection and property tax administration. This revenue surplus has been substantial in subsequent years and is expected to continue.

The rating was conducted by Credit Rating and Information Services of India, Ltd (CRISIL) based on a methodology it developed with assistance from the FIRE(D) Project. Since then, all three Indian rating agencies – CARE, ICRA and CRISIL – have become involved in the rating process. The cities of Mumbai, Pune, Vijayawada and Bangalore have been rated and 34 other cities and utility boards have been or are in the process of being rated.

Financing the Ahmedabad Water Supply and Sewerage Project

The city developed a capital investment plan of approximately Rs. 5.89 billion (\$147 million) in water supply, sewerage, roads, bridges and solid waste management. At the same time, it initiated a Rs. 1 billion (\$25 million) project to provide sewerage treatment and slum upgradation with private sector participation. The city elected to develop the water supply and sewerage project, worth about Rs. 4.89

billion (\$122.25 million), in a commercially viable format. The financing plan was designed based on opportunities in the capital markets as well as constraints on institutional finance for urban infrastructure projects.

This component of the Ahmedabad capital investment program then became eligible for financing through USAID's Housing Guaranty (HG) Program under the FIRE(D) Project. The AMC appointed Infrastructure Leasing & Financial Services (IL&FS) as its merchant bankers, and an initial financing plan was developed that included municipal bonds. These two institutions, together with the Housing and Urban Development Corporation (HUDCO), CRISIL and USAID went forward to develop and issue the city's bonds.

Initial AMC Financing Plan

Municipal Bonds	Rs. 1 billion (\$25m)
Loan from IL&FS <i>(USAID HG Loan through the FIRE(D) Project)</i>	Rs. .9 billion (\$22.5m)
Institutional Finance <i>(HUDCO and Life Insurance Corporation of India)</i>	Rs 1.52 billion (\$38m)
Internal AMC Resources	Rs. 1.47 billion (\$36.75m)
Total	Rs. 4.89 billion (\$122.25m)

Introducing a Structured Debt Obligation

One important step was to re-examine the project financial structure and to introduce credit enhancement. IL&FS, in association with the FIRE(D) Project, worked with the AMC to shift from a general obligation bond to a structured debt obligation (SDO). The SDO provided greater security for investors in several ways. Revenues from ten octroi collection centers were earmarked to service the bonds, and an escrow account was created which would be independently monitored by a trustee.

Further credit enhancement was achieved through overcollateralization with a minimum debt service ratio of 1.5 and provisions giving investors recourse to the general revenues of the corporation. Assets were mortgaged with a 1.25 asset coverage ratio, and a sinking fund was created for principal repayment. The AMC then returned to CRISIL with this SDO and receive a improved rating of AA-(so). This improved rating strengthened the perceptions of potential investors, a critical element in the success of a bond issue.

Bonds Are Issued

A determination was made to apportion the issue as 75 percent private placement, that is, sale of the bonds through pre-negotiated agreements with specific institutional investors. The private placement was organized by IL&FS with co-lead managers Kotak Mahindra, SBI Caps and ANZ Grindlays.

The remaining 25 percent were publicly placed, that is, a scheduled release for sale through the open market. Even though public issue was expensive in term of mobilization, the AMC took this step to create a market image and to help further the agenda for creating a municipal credit system.

The draft prospectus for the public issue was approved by the Securities Exchange Board of India, and in December, 1997, applications were filed with the National Stock Exchange (NSE) and the Ahmedabad Stock Exchange (ASE).

In the following month, the issue opened. The face value of the bonds was Rs. 5,000 (\$125) in multiples of Rs. 1,000 (\$25) thereafter, with a coupon rate of 14 percent, tenor of seven years and principal repayment during the final three years.

The private placement was allotted to a dozen Indian financial institutions, including the State Bank of India, the Unit Trust of India, Housing Development Finance Corporation, Ltd, and with commercial banks and mutual funds.



Advertisement of the public issue was handled by Mudra Communications, in newspapers, on buses, hoardings, city cable television and kites. Press conferences were also held in Ahmedabad as well as in Mumbai and Delhi. Brokers conferences were held in those three cities

as well as Baroda, Rajkot, Surat and Bhavnagar. Greater than 95 percent of subscribers were individuals, and the issue was oversubscribed by more than 10 percent.

Since that time, some trading of the bonds has taken place at the NSE and the ASE. Though trading has been in small amounts, this represents the beginning of a secondary market.

The Way Forward

Based on this experience, as well as research conducted by the FIRE(D) Project, it is possible to

identify three main areas that require attention if municipal bonds are to become a more common, reliable method of financing urban environmental infrastructure.

System Development

- *Develop a regulatory framework for permission to issue bonds and disclosure norms:* A structured, streamlined system for state-level support and regulation in the areas of borrowing purpose, capital investment planning, project development and carefully monitored ceilings on debt would be essential. In addition, it is also necessary to develop disclosure norms in consonance with market-based corporate debt instruments prescribed by market regulators in India.
- *Develop the long term debt market:* Currently the tenor of debt instruments is in the range of five to seven years, but several measures are being put in place to develop the long term debt market during the medium term. Pending this development, measures to enhance the tenor of municipal bonds through guarantees for later maturities of principal repayments and interest payments are needed.
- *Liberalize investment guidelines for long-term funds and other resources:* Long-term lending is one approach to providing cheaper financing, and access to sources such as pension and insurance funds should be explored. At present, investment by provident and insurance funds is controlled by central government regulations in favor of government securities. Investment guidelines for long-term funds are expected to be released as a part of financial sector reforms. With this, it will be possible for municipal authorities to access long-term funds.
- *Develop bankruptcy legislation for local bodies and other issuers:* Investor confidence can be strengthened, to some degree, by legal structures which provide recourse for bonds that do not perform as expected.
- *Provide tax and fiscal incentives for the issue of bonds:* The Ministry of Finance (MOF) and Ministry of Urban Affairs and Employment are developing guidelines for the issuance of tax free bonds, and the MOF has sanctioned the issue of Rs. 2 billion of tax-free municipal bonds. This will serve as an impetus for the development of a municipal bond market.

Capacity-Building for Issuers and Advisors

- *Build capacity for project development and management to ensure timely and efficient utilization of bond proceeds:* Accessing capital market funds requires projects developed in commercially viable formats with adequate attention given to project management and implementation. One of the most important aspects relates to identification and

management of risks associated with project development and operations. Any risk management strategy will need to both mitigate risks and allocate them to the most appropriate actor, within the contractual framework of the project. This requires considerable initial investment in project development.

- *Enact local reforms in accounting and financial management to meet rigorous disclosure norms:* Reliable information is the foundation of a credit rating and an essential factor in generating investor confidence. For this reason, the FIRE(D) Project has worked to support reforms in financial accounting, reporting and management at central, state and local levels.
- *Reform tariff structure to improve financial viability:* The development of commercially viable infrastructure projects requires the introduction of (at least gradual) tariff reforms and a move toward cost recovery or an efficient pricing regime.
- *Share information and experiences among rating agencies, lenders, investment bankers and financial advisors:* Dialogue among these institutions can only improve and hasten the development of a healthy municipal bond system in India.

Support for Instrument Development

- *Support credit enhancements through sustainable and commercially viable mechanisms:* One of the keys is to develop alternatives to the blanket state government guarantees which have been routinely used for financing urban infrastructure projects. In this context, alternatives need to be explored, such as escrow arrangement with necessary reserve funds; bond insurance structured on market principles, as found in the United States and European nations;

financial guarantees; and performance guarantees such as for raw water quantity and quality.

- *Compile comparative information on the performance of potential issuers to develop industry norms and benchmarks:* A Comparative Performance Indicator System, which has been developed with FIRE(D) Project support and applied in the state of Tamil Nadu by Kirloskar Consultants, Ltd, is an example of such a system. By assembling and analyzing information across cities and over time, it becomes possible to compare performance and to analyze trends and relative strengths and weaknesses of urban local bodies
- *Develop new structured financing arrangements within Urban Finance Frameworks:* Unlike the traditional Project Finance Framework, which is limited in scope and focuses only on finances related to a specific project, an Urban Finance Framework takes in account the totality of municipal finances and provides developers and potential investors with a more comprehensive picture of the financial setting within which a project exists.
- *Develop pooling arrangements for small issuers:* Though the limited financial and physical resources of most Indian municipalities makes market borrowing prohibitive on their own, by pooling together it is possible that scale can be reached, that enables development of a commercially viable project and financing through municipal bonds.

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<sup>1</sup> Conversion is based on Rs. 40 = US\$ 1.

# Project Note 25: Lessons Learned from the Ahmedabad Municipal Bond

*Municipal bonds are now accepted as a viable option for financing urban infrastructure in India. Recent Government of India issuance of guidelines for tax-exempt bonds will only expand capital market interest in the municipal debt market. Last year, the FIRE project evaluated the bond issued in 1998 by the Ahmedabad Municipal Corporation, India's first municipal bond not backed by a state guarantee, and identified key lessons for other municipalities that are considering this means of mobilizing resources. This Project Note summarizes the evaluation's findings about obtaining a credit rating, structuring the bond and transaction documents, and using the bond proceeds.*

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In January 1998, the Ahmedabad Municipal Corporation (AMC) issued Rs.1,000 million (US\$25 million) in bonds to partially finance a Rs. 4,393 million (US\$110 million) water supply and sewerage project. This was a remarkable achievement since it was the first municipal bond issued in India without a state guarantee and represented the first step toward a fully market-based system of local government finance. The AMC had previously instituted significant fiscal and management reforms, with technical assistance from USAID's FIRE project, including improved tax collection, computerizing the accounting system, strengthening AMC's work force and financial management, and developing a comprehensive capital improvement program. These reforms laid the necessary groundwork for AMC's bond issue and successful implementation of the infrastructure project.

## Laying the Groundwork

### Local Reforms

Public sector reform and resource base expansion are often necessary precursors of a bond issue. During a deteriorating financial situation in 1994, AMC launched a major effort to improve revenue collection with a focus on octroi<sup>1</sup> and property taxes. Due to these measures, AMC was able to turn around its financial position and achieve a closing cash surplus of Rs. 2,142 million (US\$54 million) in March 1999. In addition, management innovations introduced by the municipal commissioner and supported by staff and elected officials helped AMC to change its image among the local citizenry.

### Project Development

AMC prepared a capital investment plan of Rs. 5,973 million (US\$150 million) for 1996/97 to 2001/02, which included a water supply and sewerage

## Role of USAID's FIRE Project

The FIRE project's partnership with the AMC began in 1994 with the preparation of an urban environmental workbook and an environmental risk assessment. In this exercise, the FIRE staff helped AMC carry out financial analyses and prepare a corporate investment plan. The investment plan, prepared in conjunction with the Infrastructure Leasing and Financial Services Ltd. (IL&FS), helped AMC to design a water supply and sewerage project. The FIRE project also assisted CRISIL to develop a methodology for carrying out credit ratings of urban local bodies (ULBs) in India. Ahmedabad was the first city where this methodology was applied. In addition, the FIRE project helped create the City Managers Association of Gujarat in 1998 and sponsored participation of AMC staff and elected leaders in training programs and study tours to build their capacity to undertake and sustain reforms. The FIRE project's multifaceted assistance to the city of Ahmedabad played a vital role in developing the bond issue.

component for Rs. 4,393 million (US\$110 million). AMC proposed to meet 30 percent of the total investment from internal accruals, while mobilizing the remaining amount through a municipal bond and loans from financial institutions. The financial viability of these investments was determined on the basis of the Corporation's overall financial position, rather than on the viability of the water and sewerage sector alone. Thus, the project was structured within an urban financial framework that was predicated on receipt of significant transfers from general corporation revenues such as octroi and property taxes.

## Credit Rating

In 1996, Ahmedabad became the first city in India to request and receive a credit rating for a municipal bond issue. CRISIL, an independent rating agency, first assigned a credit rating of “A+” to Ahmedabad’s municipal bond. Following this initial rating, AMC revised the financial structure of the bond offering and added several credit enhancement features, including a “no lien” escrow account of octroi taxes collected at ten collection centers. This financial mechanism is referred to in India as a structured debt obligation. However, because the city pledged all octroi taxes and other income to bondholders in the event that revenues from the ten collection centers were insufficient to make debt service payments, the Ahmedabad issue was in reality a general obligation bond. With these modifications to the bond financing structure, AMC received an improved rating of “AA.”<sup>2</sup>

## Structuring the Bond

### Bond Structure

AMC’s general obligation bond contained several credit enhancement measures (more commonly found in revenue bond offerings) designed to address political and repayment risks. These measures, in addition to the “no lien” escrow account for collection of octroi revenues, included innovative credit enhancement concepts such as a sinking fund for principal repayment, an annual debt service coverage ratio of 1.5, and property pledges with a 1.25 asset coverage ratio. However, in future bond offerings, greater planning and attention to details will be required to ensure the enforceability of these special covenants.

### Improving Transaction Documents

The key financial documents in a municipal bond transaction are the disclosure (prospectus) document and trust indenture.

#### *PROSPECTUS*

While the prospectus for the AMC bonds provided a general overview of the economic, environmental, and fiscal condition of the AMC, and identified internal and external risks to investors, the degree of detail and specificity fell below international norms. In addition, it appeared at times that the prospectus attempted to explain away risks rather than provide the investor with all the necessary information to reach an independent evaluation of those risks. The prospectus was written to comply with disclosure guidelines of the Securities and Exchange Board of India (SEBI), which were

designed for corporate offerings. This occurs in many countries and can be addressed by developing separate SEBI guidelines for municipal bonds. SEBI launched such an initiative as part of the Malegam Committee review of existing disclosure guidelines. These guidelines for municipal bonds should:

- provide the investor with sufficient detail, specificity, and information to reach an independent evaluation of risk; and
- clearly define all covenants, especially debt service covenants.

#### *TRUST INDENTURE*

A trust indenture is a binding legal agreement between an issuer and a trustee acting on behalf of the bondholders. AMC’s trust indenture lacked sufficient specificity in many critical areas. As the market matures, investors will demand greater specificity in provisions relating to security pledges and perfection of all security interest at bond closing. The Ahmedabad bond prospectus and trust indenture are in need of substantial modification to fully inform investors of the risks and circumstances of the bond offering and to properly secure the financial interest of the bondholders. Development of a model trust indenture would help avoid future shortcomings in the structure and security of bond transactions and enhance investors’ comfort in these financial undertakings.



A model trust indenture should insure that:

- all security interest is in place at the time bonds are issued or shortly thereafter;
- all credit enhancements discussed in the prospectus are included in the trust indenture;
- to manage interest rate risk, call provisions or redemption clauses are included (they allow an issuer to call bonds early and take advantage of market conditions to refinance at lower rates); and
- the trustee’s duties are precisely defined and automatically triggered by specific actions.

In a bond financing, the trustee is the custodian of funds and official representative of bondholders. As such, a trustee insures compliance with the terms of the bond trust indenture and represents bondholders to enforce the contractual obligation of the issuer. It is in the best interest of the issuer, trustee, and bondholders if the trustee’s responsibilities are established in the trust indenture without discretion and the trustee actively

pursues those responsibilities on the bondholders' behalf. AMC's bond indenture provides an extraordinary level of discretion to the trustee, which should be avoided in future bond offerings. As India's bond market matures, greater specificity of the trustee's responsibilities and greater attention to bondholders' interest will be required.

### Transaction Costs

The transaction costs for the AMC bonds, including underwriters, brokers, and legal fees, as well as advertising and printing expenses, equaled 2.89 percent of the bond offerings or Rs. 28.9 million (US\$722,500). This excludes stamp duty cost. A state government guarantee of AMC bonds would have resulted in considerable savings in transaction costs. However, a state government guarantee fee, annually assessed at one percent of outstanding principal balance, would have cost AMC Rs. 49.9 million (US\$1.25 million). for this particular financing. This savings more than offsets the higher transaction costs.

### Using Bond Proceeds

#### Project Implementation

In the bond prospectus AMC pledged to establish special project sanctioning procedures to reduce project delays and to appoint private project management consultants to facilitate the process of project design, approval, tendering, construction supervision, quality control, and payments. AMC did not, however, follow through on these pledges. The lack of specialized project management support and AMC's normal approval process were partly responsible for delays in project implementation. Under pressure of an impending water crisis, the AMC rapidly expended bond proceeds to successfully implement an emergency bulk water supply scheme, the Raska Water Project, in a record five months.

#### Spending Bond Proceeds

Although criticized in certain circles in India and abroad, the two years that AMC took to use most of the bond proceeds is within U.S. norms for similar projects. Because interest rates dropped after AMC bonds were issued, the income AMC received on invested bond proceeds fell below the level of interest payments on the outstanding bonds, creating what is known as "negative arbitrage." AMC claims, however, that this availability of cash permitted it to obtain highly competitive tenders from the private contractors, which came in at 10 to 15 percent below the estimated cost. AMC estimates that this more than offset the loss of interest on the debt.

## The Raska Water Project

Facing a very severe drought situation in August 1999, city officials decided to use the bond proceeds together with a Housing and Urban Development Corporation (HUDCO) loan, backed by USAID's Housing Guaranty program, to build the Raska water project. Designed to supply 6.5 crore (65 million) gallons of water a day to the city, the project consisted of constructing a pump house and laying 42 km of pipeline — most more than two meters in diameter — to bring water to the city. To ensure that the project would be completed by the end of March 2000, the municipal commissioner personally took charge of project implementation and obtaining necessary construction approvals from state and central government bodies.

The entire project was completed in 130 days, a record for engineering projects in India. The municipal corporation worked in partnership with two private contractors to coordinate 32 sub-contractors from all parts of India, whose 4,000 workers labored around the clock. Today, the Raska project supplies water to 60 percent of the city's population. The AMC can provide treated water to all residents for two hours in the morning and half an hour in the evening. Timely completion of the project not only saved Ahmedabad from severe water shortages during the summer of 2000, but also it provided a permanent and reliable source of surface water for years to come.

Utilization of bond proceeds should be accelerated to the extent possible. Before actual issuance of bonds, municipal corporations should have in place the following arrangements: a phased capital investment and financing plan for project implementation; identification of benchmarks for project commencement and completion; final tender documents for the proposed projects(s); and a separate project implementation group and project officer who will monitor the progress of works.

## Summary of Conclusions

Great strides have been made in India in evolving the policy and legal framework for local government access to capital markets. Municipal bonds are now available as an option for financing urban infrastructure. Public financing concepts are well understood by the

financial community and are becoming familiar to the local government sector. However, to routinely access capital markets for municipal bonds, ULBs will have to strengthen their capacity to develop commercially viable projects. This will require appropriate pricing of services, improved cost recovery mechanisms, improved accounting and financial management systems, enhanced professionalism of the work force, improved service delivery systems, and development of capital investment plans. To complement project development, ULBs will have to institute efficient project management systems and procedures to reduce time delays and cost overruns. The most critical factor for obtaining market finance will be a healthy municipal revenue base.

Furthermore, implementation of public finance concepts in the form of disclosure and transaction documents for municipal bonds needs to be improved to avoid financial difficulties and negative market consequences in the future. Adoption of a model prospectus and trust indenture would help address those shortcomings, as would the adoption of special disclosure guidelines by SEBI for local government bond offerings. Advanced public finance mechanisms, including revenue bonds, concession contracting and special purpose vehicles financing, will also require greater attention to legal documentation to be fully successful in India.

# Project Note 31:

## *Pooled Finance Model for Water and Sanitation Projects: The Tamil Nadu Water and Sanitation Pooled Fund (WSPF)*

*In the past five years, some of India's larger municipal corporations have accessed domestic capital markets to fund infrastructure projects. However, until recently small- and medium-sized urban local bodies have not been able to access the market. The USAID-FIRE (D) project supported the state of Tamil Nadu's Water and Sanitation Pooled Fund to develop a pooled financing mechanism and issue a bond that is financing water and sanitation projects in 14 small- and medium-sized towns. This Project Note describes the background, objectives, and structure of the state-level pooled finance mechanism, the first example in India, and the role of the Government of India (GOI).*

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The majority of urban infrastructure projects undertaken by urban local bodies (ULBs) depend on subsidized funds from state governments and semi-public financial institutions that lend to ULBs relying on state government guarantees. This traditional reliance on cheap and readily available funding has hindered the introduction of fair user charges and efficient operations and maintenance. The declining availability of state funds and the Reserve Bank of India's endeavor to discipline lending against state guarantees has limited the flow of funds to ULBs for infrastructure projects and compelled them to explore alternative sources and methods of funding.

One such source, direct access to domestic capital markets that was pioneered under the USAID-FIRE (D) project, is now an accepted option for larger, financially viable ULBs. Since 1996, at least ten ULBs received investment grade credit ratings and six successfully issued municipal bonds. Others are in process. In most cases, bond proceeds funded water and sewerage projects.

Small- and medium-sized ULBs, particularly in those states that have abolished *octroi*,<sup>1</sup> do not have the ability to directly access domestic capital markets nor is direct access cost-effective for them. Another constraint to the expansion of the municipal bond market has been the lack of investor interest in long-term debt. Until now, the term of municipal bonds has not exceeded seven years because longer-term bonds were seen by investors as too risky and priced too high for municipalities to afford.

### **United States Bond Banks as a Relevant Model**

A number of states in the United States created state-level pooled financing structures, often called bond banks, to support borrowing by smaller municipalities that otherwise would find it difficult to directly access

the capital market. A bond bank is a state-sponsored intermediary that borrows from the capital markets, usually with some state or federal credit enhancement, and typically uses the proceeds to purchase debt obligations of local governments. Bonds generally are secured by loan repayments of the pool of local borrowers, as opposed to one locality, which helps reduce risk for investors and interest rates for borrowers.

For more than 30 years U.S. state bond banks have provided more than \$40 billion in financing for municipal needs at or below market rates. They finance local water and sewer projects, schools, transportation, solid waste management facilities, and economic development. They are considered to be one of the most significant contributions to the municipal bond market during the past ten years.

Bond banks generally do not issue bonds backed by state guarantees. However, most states pledge some form of credit enhancement to provide borrowers interest rate savings. The most common enhancement is the state grants-in-aid intercept. Under this arrangement, if a local borrower fails to make a timely payment of principal and interest, state grants to that locality are "intercepted" to make the debt service payment. Also, most bond banks do not rely on state funds to cover operating expenses; instead they charge various kinds of fees to local borrowers.

Based on this model, the FIRE project supported Tamil Nadu's effort to develop a pooled financing mechanism and to structure a bond issue whose proceeds are financing small water supply and sanitation projects in 14 small- and medium-sized towns.

### **Objectives and Structure of Indian State-Level Pooled Finance Mechanisms**

The objective of a state pooled finance mechanism is to provide a cost-effective and efficient way for smaller

ULBs to access the domestic capital market for investment in urban infrastructure. Another objective, for state governments, is to introduce new institutional arrangements for mobilizing urban infrastructure finance. Participating in this mechanism will also encourage ULBs to undertake basic reforms.

The following generic structure for a state-level pooled finance mechanism is applicable to Indian states, each of which must select its own specific mechanism. It is a hybrid of project specific and general revenue bonds in developed countries.

- *State entities.* The bond issuer will be a trust or special purpose vehicle formed under the India Trusts Act that will serve as a debt fund. The debt fund, similar to a bond bank in the U.S., will be the pooled financing entity. It will be set up with an initial debt service reserve contribution from the state government. An asset management company should be named to manage the trust or debt fund.

- *Source and use of bond proceeds.* The fund's debt will be offered to domestic investors. The funds raised by the bond issue could be used either to purchase the bonds of participating ULBs or be disbursed as loans to them.
- *Debt service plan.* The hierarchical order of sources for bond repayment is:
  - a) Project revenues, i.e., water tariffs and interest on deposits of connection fees, forwarded regularly to the debt fund, which would maintain an escrow account;
  - b) If necessary to make the annual bond payment, the escrow account would be supplemented by the fund's taking municipal tax and fee revenues or intercepting state government transfers;
  - c) Debt service reserve fund (DSRF) equivalent to one to two years of annual debt service payments. The DSRF would be established upfront, before bond closing, and replenished annually if needed by the state government with optional participation of All-India Financial Institutions (FIs) or international donors; and
  - d) Additional credit enhancements may be negotiated with potential investors. They could come from the state government, the GOI Pooled Finance Development Fund (PFDF), a coalition of ULBs, FIs, or donors. These entities may guarantee all or a portion of outstanding principal and interest payments through the DSRF or additional mechanisms. These credit enhancements would vary by bond and by state.

The state pooled financing entity could be assigned the following functions:

- support ULBs in development of commercially viable infrastructure projects (CVIPs);

- prescribe guidelines for ULBs to strengthen their overall financial position;
- access capital markets on behalf of ULBs;
- access GOI PFDF for additional credit enhancement;
- access the GOI City Challenge Fund to cover initial transaction costs such as rating fees and to institute the reform process in ULBs;
- manage disbursement and repayment of bond; and
- increase the size of the debt service reserve fund.

## Tamil Nadu and USAID Establish India's First Pooled Finance Fund

The Water and Sanitation Pooled Fund was set up following extensive discussions among state officials, Tamil Nadu Urban Infrastructure Financial Services, Ltd. (TNUIFSL), GOI, USAID, and the FIRE project. The key entities involved each had different roles. The WSPF was incorporated as a trust in August 2002 with a six-member Board of Trustees consisting of state officials and TNUIFSL's CEO and with an initial debt service reserve contribution from the state. USAID provided a backup guarantee through its Development Credit Authority (DCA). TNUIFSL, the asset management company of the Tamil Nadu Urban Development Fund (TNUDF, a multi-sector urban development project financed by the World Bank), manages the fund.

The purpose of the trust, WSPF, is to channel financial resources including financing raised from private markets into high priority infrastructure investments, contributing directly to improved living standards of the urban population. It will finance and refinance water and sanitation projects of small and mid-sized towns. This fund was set up to enable local bodies to participate in the capital market without increasing the contingent liabilities of the state.

The FIRE project supported the efforts of WSPF to structure a Rs. 30.41 crore (US\$6.4 million) bond issue whose proceeds would finance small water and sanitation projects in 14 locales. The bonds have a face value of one lakh each (approximately US\$2000), 9.20 percent annual interest rate, 15-year maturity, redemption in 15 equal annual installments, and are puttable/callable at the end of 10 years. The bonds were assigned a credit rating of Ind AA (SO) by FITCH and





LAA (SO) by ICRA. While the bonds were unsecured, a multi-layered credit enhancement mechanism was set up, with the following order:

- ULBs set apart monthly payments equal to one-ninth of their annual payment into escrow accounts they hold, and transfer the same during the tenth month into the WSPF's escrow account;
- In case ULB project revenue payments are insufficient, the WSPF may withdraw funds from ULB bank accounts where tax collections are remitted and/or directly intercept state transfer payments;
- Bond Service Fund (BSF), a state-funded Rs. 6.9 crore reserve fund (an amount equal to about one and a half times annual debt service) set up before the bond issue, would then be tapped; (BSF is not an entity; rather it is state funds held in liquid securities by the WSPF.)
- USAID's guarantee of 50 percent of the bond's principal through DCA would replenish the BSF, if needed.

The DCA guarantee – of up to 50 percent of the authorized amount of US\$6.4 million with a 15-year term – facilitated the success of the issue. Its two objectives were to lengthen the term of the bonds and to provide local bodies improved access to financial markets. This USAID DCA activity supported the development of CVIPs, private sector participation in them, decentralization, enhancement of infrastructure service access to poor communities, improvements in water and sanitation policy, capacity building of city

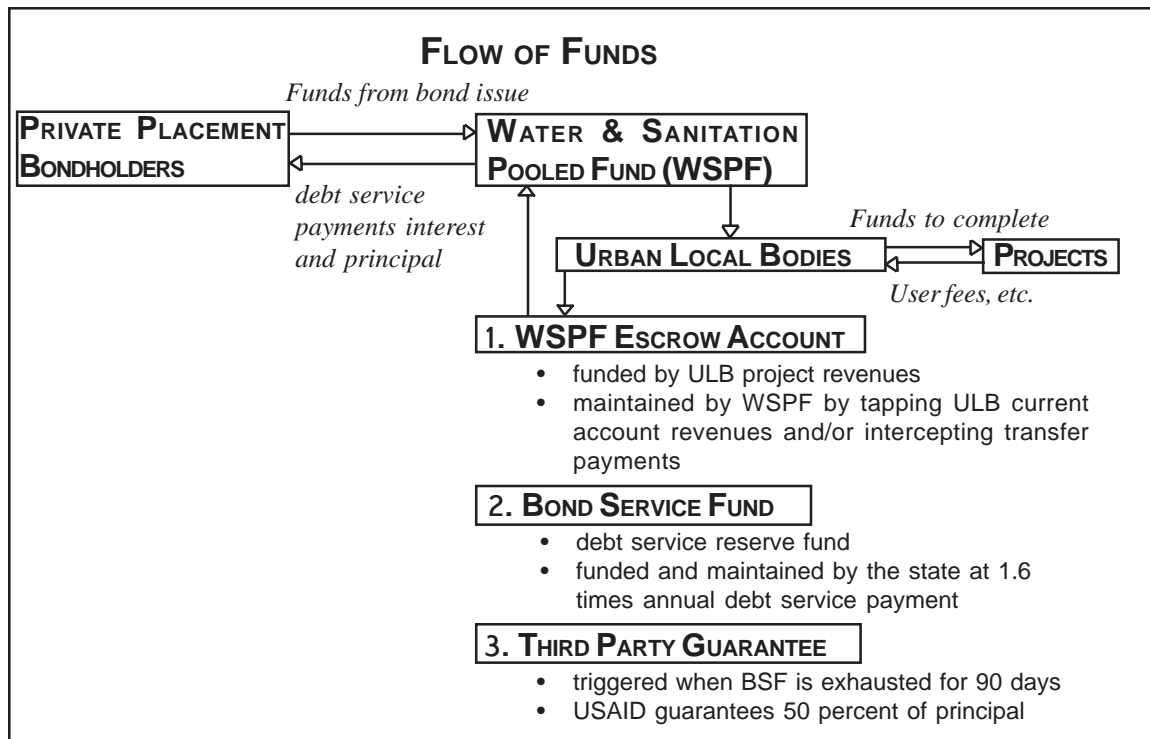
officials, and fiscal and other reforms in small and medium ULBs. Restricting the DCA guarantee to 50 percent of principal (effectively 25 percent of outstanding debt service) promotes private sector appraisal and participation.

The Fund appointed M. S. Darashaw & Co. of Chennai to be the bond manager. The company privately placed the bond issue with domestic investors in December 2002. The list of subscribers and amounts are:

|                      |                       |
|----------------------|-----------------------|
| Karnataka Bank       | Rs. 2000 lakhs        |
| ICICI Bank           | Rs. 1000 lakhs        |
| City Union Bank      | Rs. 25 lakhs          |
| Gujarat Industries   |                       |
| Power Co Ltd., PF    | Rs. 11 lakhs          |
| Metlife Insurance PF | Rs. 5 lakhs           |
| <i>Total:</i>        | <i>Rs. 3041 lakhs</i> |
|                      | (Rs. 30.41 crore)     |

This was the first successful bond issue of its kind outside of the U.S., using a pooled financing structure for financing water and sanitation projects of small and medium municipalities. A key to its success was that all projects pooled demonstrated collection of user charges and/or fixed fees from citizens.

*Beneficiaries.* The majority of the proceeds were disbursed to ULBs in January 2003, in amounts ranging from 16 lakhs (US\$33,000) to 547 lakhs (US\$1,140,000). Most are refinancing TNUDF loans at lower interest rates, for projects that are underway. Eight projects are connecting urban areas on the



periphery of Chennai with the new Krishna Water Supply scheme. The new water mains, tanks, and pumps will increase the daily supply significantly to an average of about 50 liters per capita per day, still far below international norms. Another three are similar water projects in towns near Chennai; a fourth is 85 kilometers away. One project will provide underground drainage in Madurai and another a solid waste management scheme in Coimbatore. Most of the areas with new access to water are slums. Half of all the beneficiaries are estimated to be low income with monthly incomes of Rs. 2,500-5,500 (US\$50-120).

### **Role of the Government of India in Supporting Pooled Financing**

On the basis of this highly successful pilot, the GOI's Ministry of Urban Development and Poverty Alleviation (MOUD) requested FIRE project support in developing a Rs. 400 crore (US\$80 million) GOI Pooled Finance Development Fund. The fund will make grants to states to facilitate the establishment of state pooled financing entities and to use for credit enhancement. The long-term goal is a revolving credit

enhancement system. It will also provide technical assistance grants to state pooled financing entities to assist ULBs to implement reforms, develop CVIPs, and access private sector financing for urban infrastructure projects.

With FIRE project support, MOUD is developing guidelines to help states create their own pooled financing mechanisms. For example, access to PFDF will be subject to participating ULBs agreeing to specific standards, such as accounting and financial management standards, pricing and tariff reforms, and environmental management and water conservation measures. The PFDF will evaluate state applications for grants and award funding on a competitive basis to facilitate the establishment of state pooled financing entities. To qualify, states must designate a state pool financing entity and provide matching grants to a credit enhancement reserve account. Ultimately, the state pooled funds will help the GOI better achieve its decentralization efforts by improving provision of sustainable infrastructure services by ULBs throughout India.

# POLICY FRAMEWORK FOR MUNICIPAL FINANCE

Over the years, the FIRE project partners learned to address the preconditions for cities to obtain financing and tap domestic capital markets. Cities must improve their credit worthiness and management of municipal funds. Several *Project Notes* describe the project partners' efforts to develop municipal accounting standards and assist cities to adopt them. One note describes the development of a municipal credit rating system for India. Another examines a proposed independent regulatory framework for water and sewerage in an Indian state that would assist cities to increase their water tariff revenues.

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Project Note 11, *Municipal Accounting and Financial Reporting Standards in India: Promoting Reform at Both Policy and Practitioner Levels*. Written in September 1998, this Note describes the FIRE project's approach to the Institute of Chartered Accountants of India (ICAI), which developed the accounting standards for businesses, to develop standards for municipalities. It also describes the initiation of work with the state of Tamil Nadu to develop an accounting manual for its cities. The Note describes the financial information needs identified by the credit rating agencies and financial institutions. The ICAI Guide and Tamil Nadu manual aim to meet these needs.

Project Note 22, *Introduction of an Improved Financial Accounting System in Urban Local Bodies in India: The Successful Statewide Reform Initiative in Tamil Nadu*. The state of Tamil Nadu was the first to introduce a double entry, accrual based accounting system to all its urban local bodies. The Note describes the efforts to develop the manual, test it in ten cities the first year, and implement it statewide the next. Written in October 2000, the Note concludes with suggestions how to introduce the system in other states.

Project Note 24, *Valuable Tool for Urban Reform in India: Technical Guide on Accounting and Financial Reporting by Urban Local Bodies*. This Note describes the project efforts to prepare the ICAI technical guide, summarizes its contents, and describes the plan to disseminate its recommendations. The contents cover the objectives and basis of accounting reports, accounting standards and their application to cities, transition to the suggested system, and form and content of municipal financial reports. (April 2001)

Project Note 20, *Developing a Municipal Credit Rating System in India*. Working closely with the Credit Rating Information Services of India, Ltd and ICRA, Ltd, the FIRE project helped introduce a credit rating system to India in 1966. First Ahmedabad and subsequently 30 other Indian cities obtained credit ratings. This Note, written in late 1999, summarizes the rating methodology developed by CRISIL and discusses the ratings of Ahmedabad and Vijayawada municipal corporations.

Project Note 27, *Independent Regulatory Framework for Water and Wastewater in Maharashtra*. The state Water Supply and Sanitation Department assigned the Sukthankar Committee to develop a road map for improving the sectors. The Committee recommended setting up an independent state agency to regulate water tariffs and service standards. This Note describes the rationale for and functions of the proposed entity as well as identifying issues in tariff setting and community participation in regulation.

# Project Note 11: Municipal Accounting and Financial Reporting Standards in India

*As cities in India turn to capital markets and the private financial sector to finance urban environmental infrastructure, the need for reform of finance and accounting practices at the local level has become apparent. Transparent financial information and standardized accounting practices not only enable more effective governance, but they form the foundation of municipal credit ratings. In response to this need, the FIRE(D) Project is working at local, state and national levels, with both policy-makers and practitioners, to reform accounting standards and develop uniform financial reporting standards in India. This Project Note describes these efforts and issues that have emerged in the process.*

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## The Need for Accounting Standards and Uniform Financial Reporting

In India today, financial reporting by urban local bodies consists of very simple single-entry cash based systems of reporting against budgetary outlays. While these systems do conform to state or city level legislative requirements, they are increasingly recognized as insufficient.

Though the two basic purposes of financial reporting by any entity are to provide information regarding the status of its financial performance and status of its financial position, current practices do not serve either purpose.

Likewise, completeness and accuracy of accounting data is an important principle of financial reporting. Yet the current accounting systems and practices neither record financial information completely nor do they guarantee the accuracy of this information.

Accounting standards provide uniform treatment and disclosure of accounting for important account heads such as depreciation, inventory and revenue recognition. Currently, however, there are no established accounting standards upon which uniform financial reporting can be based nor a technical guide on how to apply the standards for local bodies in India.

### Initiating Reform at the National Level

Recognizing the need for reform, the FIRE(D) Project approached the Institute of Chartered Accountants of India (ICAI), India's premier accounting body which, among other things, establishes accounting standards for all business entities in India. At the same time, this initiative was supported by a request from the Union Ministry of Urban Affairs and Employment to develop a model accounting system for

local bodies. ICAI immediately took the lead and created a study group to develop a technical guide with the support of the FIRE(D) Project.

In a country as large as India, with statutory requirements that vary greatly from state to state, it is difficult to address all accounting and reporting issues. However, ICAI is currently reviewing all known issues and matters relating to such bodies for incorporation into the technical guide. The guide will subsequently have to be adopted and adapted by state governments for application to local bodies. It may also be worthwhile for ICAI to publish a periodical to provide information regarding pertinent financial management and accounting topics to state legislative bodies and to local governments.

The need for such principles and standards was also cited by the Securities Exchange Board of India (SEBI) in its approval of the Ahmedabad municipal bond issue. The Board considered the city's accounts and financial statements, which are not based on Generally Accepted Accounting Principles (GAAP), as a risk to investors to be disclosed in the prospectus of the issue. To address this problem, the technical guide will describe principles of accounting and financial reporting for urban local bodies, keeping in mind accounting characteristics of various governmental funds such as fiduciary and proprietary funds.

### Working for Reform at the State and Local Levels

At the local level, a number of cities have taken steps to reform accounting systems. For example, in 1990, the World Bank provided support to six cities in the state of Gujarat — Ahmedabad, Baroda, Surat, Rajkot, Bhavnagar and Jamnagar — to improve accounting systems. Different firms of public accountancy were engaged to develop improved systems and manuals for these cities, which were left to the respective cities for implementation. While the

experiences of these cities have varied, most are still working to produce financial statements after a period of eight years. The FIRE(D) Project conducted a detailed study of the results of the World Bank efforts in Ahmedabad, and its findings have been provided to the ICAI study group to assist in its work.

At the state level, Tamil Nadu has taken the lead in preparing a revised accounting manual for all local bodies, which will then support the introduction of a computerized double entry accrual based accounting system. Both the FIRE(D) Project and ICAI are assisting in this effort, and a software company has been engaged by the Tamil Nadu Urban Development Fund to develop accounting software based on the revised manual.

## Financial Information: The Foundation of a Municipal Credit Rating

The FIRE(D) Project then turned to credit rating agencies and financial institutions and asked that they identify current constraints to evaluating the financial status of local bodies. According to Credit Rating and Information Services of India Limited (CRISIL), based on its experience rating the credit of local bodies, some of the most basic information is relatively inaccessible, such as:



*Revenue Receipts.* This includes estimates of slippage of octroi; cash in transit and cheques under transfer; demands raised under the current property tax cycle; duration of arrears; arrears under transfer of revenue grants; and revenue break up for various consumer segments.

*Revenue Expenditures.* This includes information such as expenditure classifications for each core service such as water supply, public health or solid waste management; amount payable on expenditure accounts; and interest accrued and due or not due.

*Capital Receipts.* This includes proper classification of state government loans and state government grants, and identification of receipts and utilization of project specific loan funds. Projected and actual drawdown schedule of loans must also be identified, as well as proceeds from the sale of assets.

*Capital Expenditures.* This includes project-specific accounting of major capital works. Accounts should show original estimates, revised estimates (cost

escalation), amounts actually incurred for a specific project, actual repayment of state government loans, and appropriation of revenue expenditure on capital works (capitalization of expenses).

*Performance Indicators.* Important information such as key indicators is not available at all through current systems. Key performance indicators include details of existing capacity for water treatment and water storage, hospital beds and patients treated, waste handling capacity, frequency of road resurfacing, per unit O&M or indirect cost of output for treated water, student enrollment and the operating status of capital works.

Overall information deficiencies also exist. Intra-budgetary transfers and undisbursed or un-utilized budgetary provisions are shown as opening balances for the next fiscal year. Likewise, there is no clarity on un-utilized funds, such as the transfer of surplus in the revenue account to capital expenditures, or deposits or advances received for specific projects. Information and reporting systems are inadequate, causing delays in the finalization of accounts, and there is a lack of efficient audits.

## The Perspective of Financial Institutions

Similarly, financial institutions have identified systemic constraints which must be addressed. These fall in three main areas.

*Single Entry, Cash Basis Systems.* One chief constraint is the fact that provisions of Municipal Acts regarding the maintenance and auditing of accounts are not specific enough to effectively maintain a double entry accrual basis of accounts. The resulting single entry, cash basis system does not provide information required to determine the financial performance of municipal bodies or to provide for an accurate comparison with other municipal bodies.

*Human Resources.* In addition, the level of competency of current human resources is inadequate for introducing and maintaining a double entry system of accounts. Moreover, accounting personnel at the local level are typically clerks who are frequently transferred among departments over the course of their careers. This practice has the unfortunate effect of inhibiting their ability to specialize in accounting.

*Non-Transparent Policies.* The view presented in a local body's financial statements, regarding its financial state of affairs and its surplus or deficit, can be significantly affected by the accounting policies followed in the preparation and presentation of those

financial statements. The disclosure of significant accounting policies is necessary if the view presented is to be properly appreciated. Currently, however, accounting policies are not spelled out by municipal bodies in the presentation of their accounts. For this reason, there is no uniformity among presentations. Also, fixed assets registers are not maintained since they are not mandatory and depreciation is usually not accounted for.

## Developing a Technical Guide

ICAI, with the assistance of the FIRE(D) Project, is committed to developing a technical guide<sup>1</sup> for urban local bodies that clearly reflects three main objectives. First, financial reporting must be based on the accrual basis of accounting. Second, financial accounting and reporting must conform to accepted accounting standards and policies, based on the standards that are developed. And finally, accounts of local bodies must be audited by independent and external auditors.

In support of this effort, the FIRE(D) Project is working with the ICAI study group to provide manuals and background material on governmental accounting standards and financial reporting developed by local bodies within India as well as overseas. FIRE(D) has also worked with members of the study group to provide exposure to municipal standards and financial reporting in the United States.

The technical guide under preparation will include a number of recommendations to meet the expectations of various user groups.

*Generally Accepting Accounting Principles.* Standard and model financial reporting formats for urban local bodies must be based on generally accepted accounting principles (GAAP). The technical guide will provide guidance on the development of “notes to accounts,” compilation of accounts, and development of appropriate accounting policies in the areas of grants, depreciation, treatment of retirement benefits, valuation of inventory and fixed assets. It will also provide guidance on development of opening balance sheets to transition from the present single entry to a double entry accounting system.

*Fund Accounting.* Guidance on governmental fund accounting, to be based on a set of separate self balancing accounts or funds to track revenues and expenditures, will be provided. This will allow financial managers and other decision makers to plan and budget their finances effectively and also allow detailed and accurate analysis.

*Public Utilities.* The technical guide will also address public utilities in all service areas, to assist municipal staff, outside bodies and professionals to understand their accounting and reporting requirements.

*Auditing.* The technical guide will address audit techniques unique to local bodies and recommend that financial health be assessed through both internal and external audits. *Government Accounting Standards Board.* The technical guide will provide recommendations for creating a board similar to the Government Accounting Standards Board in the United States for the purpose of issuing governmental accounting standards.

*Adaptation by States.* Though the technical guide aims to achieve a uniformity of approach, it will also allow flexibility in certain areas due to local conditions or statutory requirements. Recommendations are expected to be adapted to local conditions and approved for implementation by each state legislature. To facilitate this process, ICAI will sponsor a number of workshops, conferences and continuing education programs. The Housing and Urban Development Corporation (HUDCO) has also offered to adopt one pilot city and assist in the implementation of the recommendations.

## Conclusion

Ultimately, the adoption and implementation of the technical guide will provide local bodies with more accurate and complete financial information, which will help improve governance and, in particular, the delivery of services, resource mobilization and utilization of scarce financial resources.

From the states’ perspective, it will provide better financial information upon which to base performance- linked grants, and it will enable states to better oversee local administration. Adoption of the guidelines will provide financial institutions with the necessary financial information on a more timely basis upon which to consider requests from local bodies for investments in urban infrastructure. And credit rating agencies will be better able to rate the credit of local bodies on a timely and cost effective basis.

Finally, improved accounting and financial reporting will allow for more accurate and complete intra- state and inter-state financial comparison among local bodies. Ultimately, this will assist states and the central government in developing and implementing policies and programs for local bodies.

# Project Note: 22

## Introducing an Improved Financial Accounting System in Urban Local Bodies in India

*As cities in India begin to develop projects that reflect principles of commercial viability and explore private sector participation, the importance of reliable information on municipal finances has come to the fore. The municipal accounting system is the source of this information, and there is a serious need for reform of the current system. The State of Tamil Nadu has taken the lead in introducing a double entry accrual based system state-wide with technical assistance from the FIRE project. This experience offers valuable lessons for other states and local bodies and is complemented by efforts of the Institute of Chartered Accountants of India. This Project Note describes the efforts of Tamil Nadu and an approach to adopting similar reform in other states.*

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In January 1999, the State of Tamil Nadu approved a measure to begin pilot testing of a double entry accrual based accounting system in two municipal corporations and 10 municipalities. With the pilot project successfully in progress, the state inaugurated this new system in its remaining three municipal corporations and 92 municipalities on April 1, 2000. Tamil Nadu is the first state in India to initiate such extensive accounting reforms on a state-wide scale.

Such extensive reform at the local level is challenging, especially since the accounting system affects all departments of an urban local body (ULB). But ULBs have become increasingly aware that if efforts to develop commercially viable infrastructure and to explore private sector participation are to succeed, this reform is essential.

### The Need for Double Entry Accrual Based Accounting

Since 1994, the FIRE project has been working with Indian cities to help develop urban environmental infrastructure projects capable of attracting private sector investment. One of the chief stumbling blocks has been the inadequacy of information on municipal finances. The present accounting system does not provide enough information for analysts to assess the financial performance and position of a ULB. A financial statement is only as reliable as the system that produces it, and the single entry cash based system in use by most ULBs today is subject to a number of defects. In a single entry system, the accuracy of books cannot be verified. The absence of asset accounts limits control of fraud and misappropriation of assets and profit and loss statements and balance sheets cannot be prepared. A double entry accrual based system enables the preparation of reliable, detailed financial statements subject to checks and balances. These statements provide adequate financial information for decision-making.

### Constraints to the Introduction of a New Accounting System

Several key constraints must be overcome to implement the new system. First, *municipal staff currently lack the competency* required to introduce the new accounting system. Accounting personnel are typically clerks who are frequently transferred among departments, preventing them from specializing in accounting. Introducing the new system will require training not only for accounting staff, but also for those in other departments. Second, changes in accounting and financial reporting requirements require *legislative changes* at the state and/or city level. Third, an opening balance sheet must be prepared to implement the new system. This requires the collection of *information on fixed assets*, including their location, service levels and value, and determination of liabilities as of the date the fiscal year begins.

A final constraint is the *fear of penalty*. The present accounting system does not allow the financial health or net worth of a municipality or municipal corporation to be assessed. Nor do current financial reports explain significant accounting policies. As a result, they allow a municipal body to hide its inefficiencies. The new system would not allow this. Some administrators fear that they may be penalized based on the possible negative net worth position that would be revealed for the first time in the new financial statements. In fact, financial position reflects the accumulated performances of current and previous administrations.

### Approach to Improving Municipal Accounting Systems in India

Realizing these challenges, the FIRE project approached the introduction of the new accounting system on three levels. On the national level, FIRE staff worked with the Institute of Chartered Accountants of

India (ICAI) to develop a technical guide on accounts and a new financial reporting system for urban local bodies in India. At the same time, the FIRE project was assisting the Government of Tamil Nadu to develop a model system at the state level. Then it helped the Tamil Nadu Urban Development Project (TNUDP) to implement the new accounting system at the city level.

Reforming urban accounting and financial reporting systems throughout India is a continuous process with different institutions playing key roles.

- The ICAI finalized a *Technical Guide on Accounts and Financial Reporting System for ULBs in India* in September 2000. The guide is designed to assist states introduce a new accounting system based on generally accepted accounting principles.
- Central and state ministries that coordinate matters related to local government should employ ICAI guidelines in making relevant legislative changes, developing accounting systems and manuals adapted to municipal needs and circumstances, and providing necessary support for implementation, especially by employing accountants.
- Municipalities and municipal corporations must assume responsibility for implementation and should encourage staff to specialize in accounting.
- Consultants may be tapped to help municipal staff set up double entry accrual accounting systems.
- Training institutions should develop training modules specifically for municipal staff. They could provide on-the-job training in addition to classroom training.
- Financial institutions should support the development and implementation of the improved accounting systems. They could provide incentives such as rebates or lower interest rates to reward ULBs for the new financial reporting formats.
- International development agencies must continue to support the efforts of the ICAI, Ministry of Urban Development, states, municipal bodies, and training and financial institutions to carry out accounting system reforms.

### Tamil Nadu - A Case Study on Introducing Accounting Reforms

The State of Tamil Nadu decided to change to a double entry accrual accounting system in late 1997 because it wanted to be able to present acceptable information to funding agencies on the financial position and performance of ULBs. The state government began the process by appointing a committee chaired by a

retired joint director of the Local Fund Audit in January 1998. State officials asked the FIRE project to help the committee develop a manual and implement the new accounting and financial reporting system throughout the state. At the time, there were no guidelines on how to do this in India.

The committee submitted its first draft of an accounting system manual for all ULBs in the state in June 1998. This draft was discussed in detail with the Commissioner of Municipal Administration, the Director of Local Fund Audit, and the Chief Executive Officer of the Tamil Nadu Urban Infrastructure and Finance and Services, Ltd. The Finance Department of the state also reviewed the draft.

The first part of the *Accounting Manual for Urban Local Bodies in Tamil Nadu* deals with accounting procedures, the second part provides the chart of accounts, and the third part presents the new forms and formats to be used in the new accounting system. Every procedure, account and form was specifically designed for the state's ULBs. The committee developed separate procedures for key municipal functions, including taxes and fees accounting, water supply and drainage fund accounting, suppliers/material accounting, contractors accounting, loans and grants accounting, etc.

In January 1999, the state Department of Municipal Administration and Water Supply decided to test the new system in 12 selected cities. The pilot began at the start of the new fiscal year on April 1, 1999.

Meanwhile, the state Secretary referred the Tamil Nadu manual to USAID and the FIRE project for their review and referral to the recently-formed ICAI committee developing accounting standards for ULBs in India. The FIRE project and the Housing and Urban Development Corporation (HUDCO) organized a roundtable to discuss issues raised by the ICAI committee. Senior officials of the Tamil Nadu government, consultants writing the manual, ICAI committee members, and FIRE project and USAID staff met in September 1999 and reached unanimous decisions on several key issues. The issue of applicability of existing Indian accounting standards for municipal assets and revenue was raised. As a result, a chapter on "Norms of Recognition of Municipal Assets and Revenue" was inserted in the Tamil Nadu manual. The ICAI committee reviewed these norms but has not yet reached consensus on guidelines for valuing certain infrastructure fixed assets of municipal bodies, such as roads, parks, and municipal lands.





## Key Steps to Introducing an Improved Financial Accounting System

The municipalities in the pilot showed initiative in introducing the new accounting system. They set up the new accounts and maintained them on a double entry basis manually. They collected information on assets and liabilities using the forms in the manual and, with the help of consultants, produced opening balance sheets. Based on this success, in January 2000 the state Department of Municipal Administration and Water Supply instructed that the new accounting system be started in the remaining municipalities on April 1, 2000. Tamil Nadu thus became the first state to introduce comprehensive accounting reforms state-wide.

The process of introducing accounting reforms will vary by state. There are certain lessons, however, that one can take from the Tamil Nadu experience. The FIRE project staff summarizes the key steps as follows:

- Assess the present accounting system, including the current methods of recording revenues and expenses;
- Structure the new municipal accounting system in accord with ICAI's technical guide on accounting and financial reporting for urban local bodies;
- Collect information on municipal properties, including dimensions, usage and value, in order to prepare an opening balance sheet;
- Propose appropriate legislation required to change the municipal accounting system;
- Undertake the following tasks (often these can be done by consultants): - Prepare a manual detailing the new accounting system and procedures, chart of accounts and forms/formats; - Develop norms for recognition of assets and revenue in accord with ICAI's national accounting standards; - Conduct both classroom and on-the-job training of municipal staff; and - Provide professional support to the municipal staff for at least the first 18 months of implementation of the new accounting system;
- Computerize the accounting system to increase capacity of local staff to maintain the new system;
- Implement the new system together with the old one for at least eighteen months to allow time for phased transition to the new system and for officials to gain confidence and experience in operating it.

## Conclusion

Transparent financial information and standardized accounting practices not only enable effective governance, but also form the foundation for carrying out municipal credit ratings, development of commercially viable urban infrastructure projects, and involvement of the private sector in the delivery of urban services. Most urban officials in India agree with the need to introduce a double entry accrual based accounting system. For the past five years, the USAID FIRE project has worked to establish an institutional basis for this reform. Now, with the issuance of ICAI's technical guide and the State of Tamil Nadu's revised accounting manual and experience introducing it in all its municipalities and municipal corporations, it will be much easier for other states in India to introduce improved accounting and financial reporting systems.

In order to ensure a smooth changeover to the new system, the state aggregated the 107 ULBs into 25 groups based on location and size. TNUDP-II, funded by the World Bank to oversee implementation of the new accounting system, contracted with 25 chartered accountant firms to assist ULBs introduce the new accounting manual. In March 2000, TNUDP-II, with technical and financial support from the FIRE project, conducted a three-day program to train staff of each municipality and a one-day orientation to familiarize the accounting firms with the functioning of ULBs and the proposed municipal accounting system. A qualified chartered accountant and an accountant will visit each ULB and assist in implementation of the new accounting system for 18 months. The firms are providing on-the-job training, trouble-shooting, and helping to prepare financial statements based on the new system.

Tamil Nadu's accounting reform is one of the best examples of the reforms underway in India's urban sector. The process of revision of the manual continues, in light of ICAI's recently prepared technical guide and the state's ongoing review of the system. TNUDP-II is monitoring progress through two committees: one at the regional, field level and another at the state level. The state contracted with a firm to develop accounting software for the ULBs that will be introduced after it has been tested with cities using the new system manually. The state's goal is that all its ULBs prepare year-end financial statements on an accrual basis for the fiscal year ending March 31, 2001.

The Tamil Nadu example shows that accounting reforms can be successfully introduced state-wide where there is effective political and administrative leadership, the willingness of local officials to take bold initiatives, and continuous support by the state government and donor agencies, such as the World Bank and the USAID FIRE project.

# Project Note 24:

## *A Valuable Tool for Urban Reform in India: Technical Guide on Accounting and Financial Reporting by Urban Local Bodies*

*The Institute of Chartered Accountants of India (ICAI) published a technical guide on accounting and financial reporting by urban local bodies in India in October 2000. The guide, prepared by a national committee representing both urban local bodies and the accounting profession, is an important tool for urban financial reform in India. The Indo-USAID FIRE project supported the conceptualization and development of this guide. This Project Note describes the origin of the guide, summarizes its contents, and outlines ICAI's plan to disseminate its recommendations.*

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At present, urban local bodies (ULBs) that seek to mobilize additional resources internally or from outside sources to meet growing infrastructure demands are severely constrained by a cash-based accounting system and financial statements. Cash-based accounting does permit monitoring of compliance with the prescribed use of funds and spending limits set in the budget. It does not, however, provide information about a ULB's financial position and performance required by financial analysts and decision-makers.

In order to increase available options for loans and other mechanisms to raise money, and enhance their capacity to negotiate favorable terms, ULBs need to present complete and reliable financial information. Only financial statements based on a double-entry accrual (or modified accrual) basis can provide users a statement of assets and liabilities (balance sheet) and matching revenue and expenditures statements. These financial statements enable users to determine not only effective compliance with budget conditions, but also the efficiency of municipal operations and the overall financial status of the urban body. Consequently, many states, cities and national organizations are making serious efforts to study, develop and implement new accounting systems, standards and reporting formats for ULBs in India.

### **The Institute of Chartered Accountants of India and Its New Role**

One of the most important efforts to reform municipal accounting in India is being led by the Institute of Chartered Accountants of India. ICAI is well positioned for this challenge due to its historical mandate and the wide distribution of its members throughout India. The ICAI was established on July 1, 1949 under The Chartered Accountants Act, 1949 to regulate the accounting profession in India. Headquartered in New Delhi, a Central Council comprised of 30 members manages the Institute;

members elect 24 and the central government appoints six. Regional Councils are located in Mumbai, Chennai, Calcutta, Kanpur and New Delhi and 87 branches of these councils are found throughout the country. (The Institute also has nine chapters in Africa and the Middle East.) The Institute's membership has grown to nearly 90,000 and 70 percent of its members are practicing accountants.

The Prime Minister of India, Mr. Atal Bihari Vajpayee, in a speech at ICAI's 50<sup>th</sup> anniversary celebration, acknowledged its valuable contribution in establishing accounting norms and standards for industries and commercial enterprises in India since the country's independence. Looking ahead, he challenged ICAI to take the lead in developing a proper financial accounting and reporting system for the social sector, which includes rural and urban local bodies in India. The ICAI is fulfilling its commitment to the urban sector by conducting the necessary research and developing materials to introduce an improved accounting system for ULBs.

### **Preparation of the Technical Guide**

The Indo-USAID FIRE project realized the demand for an improved accounting system based on its experience assisting municipal corporations, other ULBs, and state agencies to introduce a commercial orientation in urban infrastructure services and to access private financing for them. In 1997, the FIRE project staff made a presentation to the ICAI's Professional Development Committee, which set up a five-member study group immediately after the presentation. This group was later expanded into a 12-member subcommittee of the Institute's Accounting Standards Board. Members included eminent accounting professionals and urban government officials. After detailed study of the practical problems faced by ULBs, the subcommittee prepared the *Technical Guide on Accounting and Financial Reporting by Urban Local*

*Bodies.* The guide is intended to be a first step in the Institute's ongoing guidance to local officials. The FIRE project supported the subcommittee's efforts from its inception.

## Contents of the Technical Guide

The purpose of the technical guide is to provide a broad framework for and direction to state governments, ULBs, ICAI members, and others as they work to improve urban accounting and financial reporting systems. Urban local bodies include municipal corporations, municipalities, and town panchayats. The chapters of the ICAI technical guide deal with the following issues:

- objectives of financial reporting by urban local bodies;
- basis of accounting measurements;
- accounting standards and their application to ULBs;
- issues in transitioning from present to suggested accounting systems;
- form and content of financial reports; and
- implementation.

The following paragraphs highlight the main points of each chapter.



*Objectives.* Financial reporting by urban local bodies is intended to satisfy the information needs of various users. The three principal user groups are the ULB itself, including elected officials; the public; and creditors owed for the provision of goods, services and loans. These groups need financial information to:

1. determine compliance with laws, rules, and regulations;
2. evaluate efficiency and effectiveness; and
3. assess financial position.

*Basis of accounting.* This phrase refers to the timing of recognition of revenues, expenses, assets, and liabilities in accounts. At present, ULBs in India are generally following the cash basis of accounting. Transactions are recorded – and revenues and expenses recognized – when the related cash receipts or cash payments take place. The cash basis of accounting fails to meet most of the financial reporting objectives. The

limitations of the cash basis of accounting for assessing performance and financial position have led to the adoption of the accrual basis of accounting. Accrual accounting is the method of recording transactions by which revenues, costs, assets, and liabilities are recognized in the accounts in the period in which they occur. The guide also discusses a “modified accrual basis” of accounting. In this system, revenues and other increments to government funds are recognized in the accounting period in which they become both measurable and available to finance the expenditure of the fiscal period.

*Accounting standards and their application.* Accounting standards lay down the rules for measuring and presenting accounting information. They apply to any entity engaged in commercial, industrial or business activities, even if these activities are only a small portion of the entity's activities. The technical guide clarifies that these standards apply to ULBs since “virtually all ...do carry on some activities of a commercial or business nature, e.g. supply of water.” In order to address the particular problems of ULBs, each accounting standard and its applicability to ULBs in practical situations is discussed in Chapter 5, the core of the guide.

*Transition.* The major stumbling blocks for ULBs in the process of transition from a cash basis to an accrual basis of accounting are unrecorded assets and unrecorded liabilities. Based on field experience, FIRE staff estimates that unrecorded assets are a far greater problem of the two for urban local bodies. In the accrual system, assets are recorded at the amount of expenditure to acquire or construct them, with costs amortized over their useful life. Under the current cash system of accounting, however, documents about the costs of fixed assets acquired or constructed in the past may not be available or the value of assets received as donations or endowments may have been recorded as “nil” since there was no cost to the urban body. The ICAI guide suggests using the estimated market value of these assets at the time of the transition to the new accrual system. Liabilities that may not be recorded under a cash system are pension payments and gratuities due to employees in the future. Obtaining an accurate record of all assets and liabilities is required to construct a balance sheet showing an entity's financial position.

*Formats of financial statements.* Financial statements are the end product of the accounting process. Through them, financial information is communicated to various users to assist them in making economic decisions. For the information in the financial statements to be useful, it should have certain characteristics. The guide describes these qualities: understandability; relevance; materiality; reliability;

faithful representation; substance over form; neutrality; prudence; completeness; and comparability. However, the guide recognizes that there are constraints to providing such relevant and reliable information in the financial statements. The constraints relate to timeliness and cost. If there is undue delay in the reporting of information, it may lose its relevance. And the benefits derived from disclosing the information must exceed the associated costs of providing it. All ULBs must grapple with these two constraints.

The recommended formats provide for the disclosure of aggregate figures of revenues, expenses, assets, and liabilities on the face of the balance sheet and the income and expenditure account. The guide recommends that these statements should also disclose relevant information for each type of activity to help users assess the efficiency and effectiveness of the ULB in carrying out different types of activities. Since many urban activities are not separately priced or are subsidized, this may require additional explanatory information. Finally, the guide encourages ULBs to present more than the minimum information required by the suggested formats. The purpose of the suggested

*Implementation.* Implementation of these suggestions would require widespread changes to the accounting systems currently in use in most ULBs. The success of the move toward improved financial reporting depends to a large extent on how well the transition process is managed. The guide recommends that states and ULBs take the following principal steps to implement its suggestions:

- review the current legislative framework with regard to accounting systems;
- develop accounting manuals, starting with manuals already developed by other states;
- carry out common training programs for ULB accounting personnel;
- promote the participation of municipal personnel in the transition process;
- institute financial audits; and
- use the services of chartered accountants in implementing the new accounting system.

### ICAI Action Plan

Currently there is a great demand by local and state governments to adopt the new, generally accepted accounting principles and procedures for local governments in India. ICAI will continue to play a leadership role in this regard. The ICAI plans to continue its support of municipal accounting reforms by:

- continuing to formulate accounting standards applicable to urban local bodies and other similar government organizations. For this purpose, it will consider applicable laws, customs, practices, and the operating environment of local governments in India. It will also review the Government Accounting Standards issued by the U.S. Government Accounting Standards Board.
- continuing to develop a comprehensive framework for preparation and presentation of financial statements by urban local bodies;
- issuing clarifications and interpretations of its Accounting Standards;
- producing *Guidance Notes* and other literature on accounting and financial reporting by urban local bodies;
- responding to the issues arising out of the implementation of the suggestions in its Technical Guide; and
- conducting workshops, training programs and seminars to provide guidance to local and state officials regarding implementation of these suggestions.

#### Implementation in Tamil Nadu and Other States

Tamil Nadu is the first state in India to introduce an accrual based accounting system in all municipalities and municipal corporations, which it did effective April 1, 2000. Tamil Nadu officials provided key input in the preparation of ICAI's technical guide. The Institute and the FIRE project also provided technical assistance to those developing Tamil Nadu's accounting system manual. Thus, Tamil Nadu and ICAI complemented each other in developing the state's accounting system manual and the Institute's technical guide. The FIRE project was the catalyst and supported both ICAI and Tamil Nadu in setting the overall framework for change and the practical example for other states in India to follow. The states of Karnataka, Maharashtra, Gujarat, Rajasthan, Andhra Pradesh, Madhya Pradesh, and Punjab are all making efforts at the state and city levels to improve their urban financial accounting systems.

formats is to bring uniformity to financial reporting that would allow users to make inter-and intra-state comparisons. However, ULBs and state governments are free to develop an accounting system within the ICAI framework and guidelines that meets their specific needs and requirements.

## Conclusion

The primary purpose of local governments is to maximize the provision of urban services within available resources. Accordingly, urban bodies are accountable for their operational and fiscal performance to citizens, investors, lenders, and all other stakeholders. Operational accountability refers to the extent to which local governments have met their program objectives efficiently and effectively, given their resources. Fiscal

accountability requires officials to demonstrate that their activities have complied with laws, rules, and regulations concerning the raising and spending of funds. Financial statements enable users to measure the degree to which a local government has met both requirements. With the introduction of the recommended changes in the basis and system of accounting, the financial statements of urban local bodies in India will be able to provide users with better information on the qualitative and quantitative aspects of a local government's performance.

# Project Note 20:

## *Developing a Municipal Credit Rating System in India*

*Since the city of Ahmedabad received India's first municipal credit rating in February, 1996, over 30 cities are following suit. While the rating is a key element in accessing capital markets, these ratings have also come to be recognized as important indicators of urban competitiveness. Throughout this process, the FIRE(D) Project has been working to facilitate the development of a municipal credit rating system in India, supporting both cities and rating agencies as they move forward. This Project Note describes the rating methodology developed by Credit Rating Information Services of India, Ltd. (CRISIL) and discusses ratings of the Ahmedabad and Vijayawada Municipal Corporations.*

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In 1995, the Ahmedabad Municipal Corporation (AMC) took the ground-breaking step of requesting a credit rating from CRISIL. The rating exercise, however, had never been performed for a municipality. CRISIL, with support from the FIRE(D) Project, worked to develop a methodology based on careful study of urban local bodies in India and international experience in the rating of municipal bonds.

Since then, CRISIL's rating exercise has evolved to focus on six major areas relative to the municipality's profile and existing operations; its financial and managerial performance; and the specific project for which it intends to borrow funds.

To further seed the development of a municipal credit rating system, the National Institute of Urban Affairs, a FIRE(D) Project Partner, took the step of contracting with Investment Information and Credit Rating Agency (ICRA) to develop a credit rating methodology and apply it to three agencies.

Over thirty cities have now turned to CRISIL, ICRA and Credit Analysis and Research, Limited (CARE), India's other leading rating agency, to request credit ratings.

In addition, the states of Andhra Pradesh and Kerala are considering plans to have their major cities rated.

A credit rating is a key element of the pre-sale stage of a municipal bond issue, for it indicates the risk level associated with an issuer's ability to repay debt. Accessing capital markets, though, requires projects developed in commercially viable formats with adequate attention given to completion of projects within a specified time and cost. This, in turn, requires considerable investment in project development, with intensive technical assistance, supported by documentation and dissemination of experiences to maximize benefits.

A credit rating has also come to be regarded as a solid indicator of a city's performance and competitiveness. Andhra Pradesh and Kerala are considering plans to have their major cities rated not necessarily only for prospective bond issues, but for financial management and monitoring purposes.

Regardless of the purpose, once a rating has been issued, continued surveillance by the rating agency is important to identify changing conditions and trends in performance.

### **Credit Assessment of Municipal Bodies**

CRISIL has identified six main areas of assessment.

#### *1. Legal and Administrative Framework*

Analysis focuses on the authority and responsibility of the municipality with regard to services, both obligatory and discretionary, taxation and borrowing of funds. This includes not only the city's powers of taxation, but specific measures that might have been taken to rationalize tax rates and add clarity to the system. In terms of borrowing, the manner in which sinking fund balances are transferred and monitored is also considered.

*2. Economic Base of the Service Area* The economic base is analyzed to assess the potential for enhancing revenue-generation by the municipal body. Key factors include population and projected growth rates, levels of commercial and industrial activity, characteristics of the tax base, per capita income levels, and other indicators of economic activity such as the number of vehicles registered or requests for telephone connections. Today these factors have limited use except in octroi-levying cities, because of the lack of a clear link between the economic and tax bases of these cities. It is expected in the future, however, that as cities move toward full cost recovery for services, the

economic base will be an important indicator of users' ability and willingness to bear taxes and user charges.

3. *Details of Municipal Finances Analysis* is based on a conventional framework reflecting a revenue account and a capital account. Receipts and expenditures for the past 5 years are assessed separately, and the accounting policy followed by it are considered key inputs in the analysis. The first phase of analysis assesses overall surplus or deficit of the revenue account. Both tax and non-tax revenue as well as state grants are reviewed. Recommendations of the relevant State Finance Commission are evaluated, if applicable. The second phase examines service related expenditures—water supply, sewerage, education, public health, public safety, etc.—and head-wise expenditures—wages and salaries, operating expenses, repairs, maintenance and debt-servicing. In cases where wages, salaries and debt-servicing constitute a majority of the costs, flexibility and the potential for expenditure control will be limited, impacting the credit rating adversely. Finally, a debt profile is constructed, considering sources, tenure, interest rates and repayment schedules for all outstanding debts of the municipality.

4. *Existing Operations* This evaluation begins with a comparison of mandatory and discretionary services of the municipality, with more favorable light shed when there is emphasis on those services that are mandatory. Operating efficiency is evaluated with regard to

core services as well as the organizational arrangements for delivery, existing infrastructure and level of revenue expenditure on these services. Efforts to curtail revenue expenditure are regarded favorably. Past trends in terms of capital outlays and receipts are used to indicate future trends in these areas, based on comparison of budgeted and actual outlays, projects undertaken, relative management performance, and service augmentation in relation to standard norms.

5. *Management* The foundation of the financial health of a municipal body is its managerial capacity. This requires review of the organizational structure; administrative systems and procedures; project management skills of the management; the level of control exercised on expenditure; management of political forces; and initiative taken to enhance resources and improve collection mechanisms.

6. *Project Analysis* The project proposed to be financed by bond proceeds has to be analyzed in detail. Analysis focuses on existing levels of service; improvements envisioned by the project; project cost; means of funding; and the effect of debt funding on the debt service coverage of the municipal body. There must be adequate comfort with the debt servicing capacity of the issuer. The proposed project will involve specific operations and maintenance expenditures which may be financed by existing cashflows, and this can impact debt-servicing capacity.

## Introducing the Structured Debt Obligation

Municipal bonds are of two general types. *General obligation* (GO) bonds carry the full faith and credit of the issuing authority, and are appropriate for general services such as roads or street lighting, for which it is difficult to levy user charges. *Revenue bonds*, however, are tied to specified sources of revenue from the facilities or services which they finance. In the US, which has the most developed bond system in the world, the prevalence of revenue bonds has grown to over 70 percent in the past twenty years. The revenue bond structure in the US is backed by strong and credible covenants related to the revision of user charges, debt service coverage ratio and additional debt mobilization.

In India, the urban sector is plagued by a number of constraints, including a low taxes base; lack of credible credit histories; sectoral constraints related to cost recovery, especially for water and sewerage; and an image as a “social” sector which results in a lack of market rigor. Given these constraints, far reaching reforms have to be initiated before municipal bodies can attain the status of issuing project-based, non-recourse debt findings in the form of revenue bonds. In light of the lack of a track record and market image of municipal bodies, investors are unlikely to accept even the GO structure.

Within this context, the FIRE(D) Project, in association with CRISIL and IL&FS, worked to introduce Structured Debt Obligations (SDO) for municipal authorities, based on earlier experiences in the power and irrigation sectors. The primary benefit of an SDO is to raise the credit quality of the proposed instrument by earmarking reliable and predictable streams of revenue from specific tax and/or non-tax sources of the municipal body. These earmarked cash flows, which are the primary source of debt servicing, are kept separate from the issuer's general funds and are monitored by an independent trustee.

The SDO approach may enhance the rating of a debt instrument compared to the stand alone creditworthiness of the issuer, leading to easier access to the capital markets and potentially less costly financing. The cities of Ahmedabad, Vijayawada, Nashik, and most others which have requested ratings, have taken the SDO approach.

## Rating Structured Debt Obligations

SDOs are debt instruments secured by cashflows from a specific asset or source of revenue which are the primary means of servicing obligations to debt holders. In this way, an SDO is a credit enhancement mechanism. (See box on previous page.)

The linkage between the performance requirements of the issuer and the origination of the cashflows is one of the key considerations in assessing the extent to which the SDO would enhance the stand-alone credit quality of the issuer. The corresponding reduction in credit risk allows the issuer easier access to the capital market. CRISIL has considered two basic mechanisms—escrow accounts and guaranties—as credit enhancement mechanisms for specific debt issues.

In the case of Municipal Corporations, octroi and property tax revenues constitute steady sources of cashflow and can be segregated and deployed toward debt servicing. These pre-specified cashflows can be escrowed (collected in a designated account) and further utilized for the specific purpose of debt servicing. Such repayment structures are overseen by a trustee who ensures that the issuer adheres to pre-specified arrangements for collection and further allocation and all other terms of the SDO are satisfied.

With an SDO approach, a city may be able to draw greater confidence and interest in its bonds. For example, Ahmedabad's first credit rating—issued in 1996 for a general obligation bond issue of Rs. 1 billion (\$25 million)—was A+, indicating adequate security for investors. After a re-examination of the project financial structure and introduction of credit enhancement, Infrastructure Leasing & Financial Services (IL&FS), in association with the FIRE(D) Project, worked with the AMC to shift from a general obligation to an SDO.

The AMC returned to CRISIL the following year and received an AA(so), indicating a high degree of security. When the bonds were finally issued in January of 1998, the public portion of the issue was oversubscribed by more than 15 percent.

### The Vijayawada Municipal Corporation Rating

In November, 1997 CRISIL assigned a rating of A-(SO) to the Vijayawada Municipal Corporation (VMC) for a borrowing of Rs. 30 crore (\$7.5 million), indicating an adequate degree of certainty regarding timely payment of financial obligations. In October 1999, this rating was reaffirmed by CRISIL. To achieve this rating,

the VMC pursued credit enhancements which rely on a pre-specified manner of borrowing over a four year period, for loans ranging in maturity from seven to thirty years.

Vijayawada has had a healthy financial track record, financing capital expenditures with revenue surpluses. The revenue account has had a consistent surplus since 1993-94, with a sharp increase in 1996-97. Tax arrears have decreased because the VMC is following a prudent practice of rapid settlement.

The city's outlook for property tax collections is positive given the fact that the government of Andhra Pradesh proposes to introduce an area based system of property tax assessment. The VMC has recently increased assessments and the number of properties eligible. Because the VMC has not revised tax rates since 1962, it is likely that the executive wing may find support for rate revisions, specifically for non-residential properties. Further revenues are expected to be gained primarily from commercial property development, and to a lesser extent from water supply services and lease payments from a solid waste disposal project.

Like the AMC, the VMC's credit rating was enhanced by the development of an escrow mechanism. But unlike the AMC, the VMC does not collect octroi; the majority of its revenues derive from property taxes and rental of commercial properties. Thus, the debt instrument proposed by CRISIL is a Special Tax Bond under which cash flows from gross property tax collections and commercial property development are to be collated and discharged to a designated escrow account. These funds will be monitored by a trustee until the point at which a given year's account is sufficient to cover the interest payment and principal repayment for that year.

To further enhance its credit, the VMC, in consultation with HUDCO, CRISIL and the FIRE(D) Project, proposes to adopt a senior-mezzanine debt structure under which Class I securities, municipal bonds, receive priority in terms of repayment, and Class II securities will be repaid only after meeting obligations on Class I. While the credit of the VMC is highly susceptible to the amount of debt or market borrowings mobilized, the advantage of such a structured borrowing program is that it ensures linkages between the overall revenue receipts position and the debt-servicing liabilities of the VMC.





# Project Note 27:

## *An Independent Regulatory Framework for Water and Waste Water in Maharashtra*

*A need clearly exists for major reforms aimed at a sustainable improvement in water and sanitation services in Maharashtra, as in other Indian states. Without a change in basic approach, policies, and institutional framework, it will be impossible for the state and local governments to provide universal access to these services, especially for the poor, and ensure their sustainability. The state Water Supply and Sanitation Department (WSSD) appointed the Sukthankar Committee to develop a roadmap for improvement in these sectors. The committee recommended setting up an independent entity to regulate water tariffs and service standards. This Project Note describes the rationale for and proposed functions of this new state-level entity, considerations for tariff determination, and the community role in regulation.*

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Maharashtra is the most urbanized state in India. While its water and sanitation coverage is better than most other Indian states, service levels in most areas are grossly inadequate. Some areas experience severe water scarcity, especially in summer months, and water must be brought in by tanker trucks. In rural areas, only 55 percent of the villages and 65 percent of the neighborhoods have a supply of more than 40 liters per capita per day (lpcd). Of the 15 municipal corporations, only Mumbai and two others meet the urban norm of 177 lpcd. Service is intermittent everywhere. Few cities have properly planned drain and sewer lines; nearly two thirds do not have an underground drainage system. This situation contributes to the pollution of the water supply. On average, 39 percent of rural and 10 percent of urban water samples are contaminated. Adverse consequences on health and economic development are widely recognized.

Given the poor level of service, citizens are unwilling to pay for it. This leads to a vicious cycle of under performance for both sectors. Since water tariff collection is low, and user fees are not collected for sanitation, cities must use general revenues for operations and maintenance (O&M). Mumbai is the only city in the state with a surplus in its water and sewerage account. Financially-strapped cities underfund maintenance and prior investments decline in value. Thus, physical leakage is now estimated at 40 to 55 percent of piped water supply. Forty three urban bodies in Maharashtra declined to take over new water projects built by the Maharashtra Jeevan Pradhikaran (MJP), a state-level water and sewerage board, largely because they do not have the financial and technical resources required to maintain them. With rapidly increasing population and industrialization, the current system is neither economically nor environmentally sustainable.

### **The Need for Regulation**

The core problem, according to the WSSD and Sukthankar Committee analysis, is that there is no

emphasis on consumer preferences and source and system sustainability in the old supply-driven approach. A mutual self-help, community orientation is appropriate for rural areas, while a commercial orientation is best for urban areas. The key challenges while moving to a market driven model in the urban sector are: to instill a paying culture among users; to instill a customer focus among utility managers; and to increase transparency in operations.

Because water is viewed as a gift from God, it has been assumed that it would be priced cheaply. Declining investment in the sector is traced to the lack of reasonable and sustainable tariffs. Almost all urban bodies in Maharashtra have tariffs that do not cover costs; cost recovery of only O&M varies from 5 to 83 percent. The rates of many local authorities do not meet minimums set by the state, nor are they revised once fixed. Low collections, as low as 25 percent in rural areas and ranging from 25 to 90 percent in urban areas, and inadequate metering exacerbate the problem. Residents need to be convinced that tap water and sewage connections are services that ought to be paid for, that water is a precious commodity. The lack of a customer focus and poor service result in people's unwillingness to pay.

The main bottleneck is the lack of appropriate institutional arrangements that results in a lack of transparency and accountability. Traditionally, the water supply and sanitation sector evolved as a state-dominated sector. The state built transmission lines, service reservoirs, large pumping stations, distribution networks, and large treatment plants. Current incentives lead officials to focus on large, politically appealing, augmentation projects; there are no incentives to focus on operational and economic efficiency. Thus, skewed investment patterns result in the neglect of maintenance. The parastatal agency, the MJP, which finances, designs, and builds these facilities, also handles policy, regulation, and operations of residential water supply. Another state agency, the

Maharashtra Industrial Development Corporation (MIDC), runs a separate water supply for industries, eliminating the opportunity for cross subsidization between residential and industrial users. Little attention is paid to waste water. Municipal corporations and urban bodies have been given responsibility for O&M of systems that they did not design and given the right to set and collect tariffs. Local politicians promise free water or low water tariffs to improve their election prospects. Often government institutions are working at cross-purposes, many with contradictory roles, and political interference is common. A major restructuring is necessary if the goal of universal, sustainable access is to be achieved.

### Key Committees Studying Water and Sanitation Sector Reform

The Maharashtra Water Supply and Sanitation Department appointed a committee under the chairmanship of Mr. D.M. Sukthankar in January 2000 to prepare a roadmap for the improved provision of water and sewerage throughout the state. Other committee members were Mr. Venkat Chary of the Maharashtra Electricity Regulatory Commission; Mr. Nasser Munjee of the Infrastructure Development Finance Company (IDFC); Mr. B.V. Rotkar, formerly of the MJP; and Mr. V.P. Raja and Mr. S. Prabhakaran of WSSD. The committee's assignment was to study rural and urban water supply schemes and master plans and to make suggestions for improved performance of existing assets including institutional and tariff restructuring, private sector participation, creating a competitive environment for water and sewerage services, strengthening the MJP, and improving groundwater resource management.

In December 1999, the WSSD set up a Core Group of officers from the Government of Maharashtra, MJP, the Groundwater Survey and Development Agency, the USAID FIRE project, IDFC, and Infrastructure Leasing and Financial Services to prepare a roadmap for encouraging private sector participation in the sector. The activities of the Core Group dovetailed with those of the Sukthankar Committee. The USAID FIRE project managed the Core Group, the technical secretariat of the Sukthankar Committee. This group sent the draft framework, including a proposed act to set up the new regulatory commission, to all urban local bodies in the state for their review and comments.

The committee submitted the *Sukthankar Committee Report on Operation, Maintenance and Management of Rural and Urban Water Supply Schemes* to the state government for review on February 28, 2001.

## Proposed New Independent Regulatory Commission

The Sukthankar Committee strongly recommended the establishment of an independent Maharashtra Water and Waste Water Regulatory Commission (MWRC) to achieve substantial and far reaching reforms in the water sector in Maharashtra. Its primary objectives would be to determine a range of tariffs for water and waste water, to protect consumers from abuse by the new City/Regional Water Supply Entities (CWSEs) which will have monopoly power in the licensed areas, to create a conducive environment for attracting viable investments in the CWSEs to improve service quality, and to promote economic efficiency in the sector. It will serve as a catalyst for reforms by removing arbitrary decisions in setting tariffs and service standards, which will help lead to new sector investments.

The committee believes that this independent regulatory framework will facilitate the restructuring of existing service providers indirectly through monitoring tariff determination and service quality. The MWRC will facilitate increased transparency, accountability, and a consumer orientation by requiring public consultation and generation of public information.

The MWRC would be responsible for regulating both water supply and waste water disposal services. Specifically, its **key functions** would include:

1. *Regulation of the quality of service* being provided by local bodies and to be provided by the licensed entities, or those working under contract with the local body, or the MIDC. Service quality would include quality of water supplied, quantity and hours of supply, reliability and continuity of supply, timely redress of consumer grievances, service coverage, and waste water disposal according to agreed standards.

2. *Economic regulation of tariffs* to be charged by the service providers (local bodies, CWSEs, other service agencies such as MIDC, MJP, City and Industrial Corporation, and private sector entities.) The tariffs will be determined on the basis of a fair charge to customers and to ensure the viability of service providers.

3. *Issue and regulation of licenses* to the proposed CWSEs, in association with one or more local bodies or other agencies such as the MJP and the MIDC. The MWRC will issue licenses to all new entrants, including private operators, in the sector after following a transparent procedure.

4. *Coordination with other regulators for environmental regulation*, especially related to drinking water quality and waste water disposal standards. The Department of Health sets standards for drinking water quality and the Maharashtra Pollution Control Board, under the Environment Department, regulates waste water disposal. The MWRC will coordinate with these regulators enforcing standards to the extent they pertain to tariff setting.

5. *Collection and dissemination of sector information* to enable the MWRC to establish good regulations and to assist different interest groups, especially consumer councils, to recognize improprieties by the local water supply entities. Identification of relevant information and its independent collection and dissemination will be the key to effective regulation.

MWRC's **jurisdiction** will be all local bodies, autonomous service providers (the CWSEs), and private sector water service providers operating under long-term contracts with local bodies, MIDC, the MJP, and rural local bodies. Single village schemes, however, will not be under its purview.

### Considerations for Tariff Setting

The thorniest regulatory issue revolves around determining water tariffs. Tariff setting should ensure a fair charge to customers in relation to services consumed and the commercial viability of the providers. Tariffs should include incentives to utilities to improve operational and economic efficiency – for example, by reducing leakages, unaccounted for water,

and energy costs as well as improving collections. The MWRC would establish mandatory guidelines and principles, such as recovering costs for desired service levels, to help tariffs gradually move toward this goal. It would conduct regular reviews of the tariffs set by local bodies and, over time as more information becomes available, develop yardsticks to measure progress.

The WDSS and the Sukthankar Committee recognize that it may be necessary to subsidize services for the poor and disadvantaged for whom even lifeline rates are not affordable. They maintain that the subsidies must be explicit and well targeted. This contrasts with the current situation in which residences and businesses that can afford to pay are receiving water at no or low

cost in hidden subsidies. The committee recommends that local bodies find innovative ways to address the needs of the poor by securing the active involvement of community based organizations and by appropriate design of private sector projects they put out for bid. It warns that, without explicit inclusion of the poor in the reform process, reform may be derailed in their name.

### Community Role in Regulation

To make the new regulation and tariff setting more responsive to community needs and willingness, the new entity should initiate a process for effective community participation. First, the MWRC should set up or strengthen consumer councils that can articulate consumer demands and preferences and provide them capacity building support. Second, the MRCW should set up an effective public consultation process for licensing and tariff determination. To be meaningful, such consultation must be backed up by timely provision of relevant information to the public about existing service levels, financial investments and expenses, hidden subsidy transfers, etc. The Sukthankar Committee, noting that enforcement of environmental regulations is weak, recommended that monitoring of water quality be contracted out to the private sector and non-governmental organizations (NGOs). With access to relevant information, NGOs and other community groups can be powerful advocates for reform. The *Citizens' Charter*, adopted by the utilities in Hyderabad and Chennai, helps introduce a consumer focus to the service. Just as in the power sector, research suggests that users are willing to pay for water as long as tangible improvements can be demonstrated.

### Conclusion

The 73<sup>rd</sup> and 74<sup>th</sup> Constitutional Amendments, which devolve responsibilities to local governments, present an excellent opportunity for reform of the water and waste water sectors along the lines proposed above for Maharashtra. State funding and MJP technical expertise are being transferred to local governments. The funding transfers should be conditioned in part on local utilities' progress toward meeting the standards for service quality and community participation. This will reinforce, in an affirmative cycle, greater customer participation, a commercial orientation by the utilities, new investment priorities, and improved service and coverage that is more economically and environmentally sustainable.

# COMMERCIAL VIABILITY OF MUNICIPAL SERVICES

The FIRE(D) project aims to increase the participation of municipalities, the private sector, and community organizations in the development and delivery of commercially viable urban infrastructure services in India. Several *Project Notes* deal with aspects of commercial viability of these services and they also indirectly relate to strengthening municipal finance.

Project Note 13, *Tiruppur Area Development Program: Focus on Urban Infrastructure and Private Sector Participation*. The city of Tiruppur and its partners — the state of Tamil Nadu, the Tiruppur Exporters Association, the financial intermediary Infrastructure Leasing and Financial Services, and USAID -- recently closed on the loans and broke ground for construction of this project that was seven years in development. It will be the first water supply and sewerage project to be built and managed by a private company in India and will meet the city's current and future needs. The Note, written in January 1999, describes the project's evolution, the partners' work, and the key innovations.

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Project Note 28, *State Incentives to Increase Efficiencies in Urban Water Supply in Maharashtra*. Greater efficiencies in conserving energy, reducing leaks, collecting tariffs, and leveraging state funds help cities improve their services and position them to obtain outside investments. This Note, written in March 2002, describes the state's efforts to help cities increase efficiencies and private sector participation through an incentive grants program. Sangli is the first to receive an incentive grant for a comprehensive upgrade and eventual expansion of its water supply.

Project Note 21, *Constraints to Developing Commercially Viable Urban Environmental Infrastructure Projects*. A review of FIRE(D) project experiences in developing commercially viable infrastructure projects in India during the first five years showed that success eluded supporters "more often than not." This Note, written in November 1999, describes the major constraints as weaknesses in cities' management of development and implementation processes, weaknesses in private sector capabilities and risk management, and lack of clarity in sub-sector priorities. The Note describes these and other constraints and approaches to addressing them.

Project Note 14, *Balancing Commercial Viability With the Needs of the Poor in the Development of Urban Water Supply and Sewerage Projects*. Since commercial viability requires the introduction of tariff reforms and moving toward cost recovery, there is a common apprehension about their impact on the poor. The FIRE (D) project works to ensure the access of the poor to improved citywide services. This Note, written in January 1999, reviews issues of tariffs and subsidies, and discusses approaches and policy changes to help cities improve services and provide poor residents access to them.

Project Note 8, *Assessing the Market for Urban Environmental Services: Demand, Preference and Willingness to Pay*. This Note describes a framework for rapid assessment of the market for infrastructure services and a methodology that can be used in the pre-feasibility phases of project development. Written in early 1998.

# Project Note 13:

## The Tiruppur Area Development Program

*As the liberalization of India's economy continues, the critical role of urban environmental infrastructure in economic development is coming to the fore. In the industrial town of Tiruppur, the private sector, with the support of the state government, took the initiative to form India's first public limited company to implement a water supply and sewerage project — a project which will not only meet the growing demand of the city's industrial users but increase the supply to domestic consumers and provide the city of Tiruppur with its first sewerage system. This Project Note describes the evolution of the Tiruppur Area Development Program, the private and public sector partners involved in its development and the innovations this project brings to the urban infrastructure sector.*

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### Economic Growth and Urban Environmental Services

Over the past decade, the city of Tiruppur has emerged as the largest exporter of cotton knitwear in India, producing 75 percent of India's knitwear exports. Between 1985 and 1996, the value of the city's exports grew by a factor of nearly 200 to Rs. 35 billion — remarkable growth, achieved despite a very low level of city services. But due to this tremendous growth, as well as the migration of workers into the city, the demand for services and the stress on infrastructure also multiplied over this time.

The municipality of Tiruppur and surrounding villages suffered greatly from inadequate levels of infrastructure. The low level of water supply, the absence of sewage collection and treatment systems, poor and congested roads, inadequate solid waste collection and insufficient power supply resulted in poor living and working conditions. Improper waste management resulted in contaminated water bodies and aquifers.

But the city's economic interests suffered as well. Water is key to the operation of the knitwear industry, and because the city's supply was insufficient, industries turned to groundwater resources and private tankers charging inflated rates. This situation inhibited growth and investment in the area, and ultimately it was the city's private sector that took the initiative to develop a water supply and sewerage system which would meet the needs of both domestic and industrial users.

### Project Development

In 1990, the Tiruppur Exporters Association (TEA) joined with the people of Tiruppur to request that the Government of Tamil Nadu (GoTN) take action to improve Tiruppur's infrastructure. As a result, the Chief Minister of the state created a High Level

Committee under the chairmanship of the state's Chief Secretary to promote rapid implementation of a development program in that area.

Progress was slow, however, and responsibility was given to the newly formed Tamil Nadu Corporation for Industrial Infrastructure Development Limited (TACID). TACID developed an integrated area development project and invited Infrastructure Leasing and Financial Services Limited (IL&FS), a private company, to assist in implementing commercially viable projects. It was these three partners — TACID, TEA and IL&FS — who worked together, with technical assistance from the FIRE(D) Project, to design components of the program as public-private partnerships.

With a focus on water supply and sewerage, IL&FS took the lead and prepared a feasibility and investment banking report, detailed technical designs and costing, which provided details of the technical proposals, costs, revenue potential, financing strategy, commercial viability, institutional arrangements, implementation structure and risk management plan. An Environmental and Social Report was also prepared. Combining an environmental impact assessment and a review of rehabilitation and resettlement concerns, the goal of the assessment was to identify and minimize any negative impacts of the project.

### The Project Implementation Structure

The GoTN did not have adequate resources to finance and implement the TADP itself, nor was it possible for the municipality of Tiruppur, with its small annual budget and limited management capacity. To implement the TADP, therefore, the New Tiruppur Area Development Corporation Limited (NTADCL) was created in 1995 as a public limited company with equity holders consisting of the Government of India, TACID, TEA and IL&FS. In the urban infrastructure

sector, this is a unique institutional structure in which both public and private sector institutions — including the principal beneficiaries — have joined together to finance and implement an urban environmental infrastructure project.

The NTADCL will act as a BOT operator and enter into a concession agreement with GoTN, under which the NTADCL is responsible for implementation, operation and maintenance of the TADP. In return, the NTADCL receives the right to revenue streams from the industrial users and bulk supply to the municipality, to meet its costs.

The NTADCL, in turn, will contract its obligations to construct and maintain the new systems to a BOT operator from the private sector. This operator will be responsible for transmission, treatment of water supply, distribution of water outside municipal limits where most industries are located, and treatment of the collected sewage, and maintenance of the sewage treatment plants. The operator will also supply bulk water to the Municipal Council, which manages distribution systems within the municipal limits.

### Selecting a BOT Operator

The NTADCL appointed technical and engineering consultants to prepare a technical specifications report and enlisted legal assistance from domestic and international lawyers to prepare drafts of key contracts. The NTADCL also prepared a Request For Proposals (RFP) document to be issued to potential BOT operators, which contained detailed technical specifications, a financial feasibility report, drafts of key contracts, instructions to bidders, evaluation criteria and bid proposal forms. The contractual framework, the most critical part of a BOT project, contains six major agreements which enable financing and determine the level of risks investors and lenders. These also detail allocation of responsibilities, risks and recourse measures.

The NTADCL then initiated an international competitive bidding process for the award of the construction, operation and maintenance contracts for the TADP in December, 1997 with the issue of a global pre-qualification notice. In the first stage, nine consortia were prequalified, based on their experience with construction of similar projects, capacity to operate infrastructure systems and financial strength. Next, a short list of 4 consortia was prepared based on the ability to build the facilities on time, to specifications and within cost; the ability to operate the facilities according to international standards; and the ability to finance construction period costs.

In the third stage, an RFP was issued to those on the short list, requesting a detailed proposal covering engineering design, financial commitments, price of delivered water and supporting financial statements and bid security. The bidders were asked to submit separate technical and financial bids. Responses to the RFP were received in August, 1997, and one bidder was selected. Final negotiations are underway and the contracts are expected to be signed in early 1999.

## Project Profile

The Tiruppur Area Development Program (TADP) encompasses a variety of infrastructure investments including water supply and wastewater management as well as roads and telecommunications. Water supply and sewerage components were identified initially to be implemented in a commercial format. When it is commissioned, this project will increase the total piped water supply from 54 mld at present to 239 mld, serving industries and households of the Tiruppur Master Plan Area and surrounding villages. And the sewerage system, Tiruppur's first, will serve the entire municipality.

### Water Supply

The water supply scheme was designed to serve an ultimate demand of 126 mld from industry and 93 mld from households. Comprised of headworks, a treatment plant, conveyance mains, service reservoirs, booster stations, distribution systems and other appurtenances, the supply scheme includes withdrawal of 185 mld of water from the confluence of the Bhawani and Cauvery Rivers about 55 kilometers from Tiruppur.

Eventually, the water supply system will serve a population of 1.4 million by 2030, and residents of the city will be supplied with 60 lpcd — a level far above the current meager supply. This level of supply meets the norms set by the Tamil Nadu Water Supply Board.

At the same time, local industry will be provided with a supply of reliable, high quality water, and will be freed from dependency on expensive water vendors and individual bore wells, realizing economic benefits as well as enhancing the recharge of groundwater resources.



## Innovations of the Tiruppur Area Development Program Water Supply and Sewerage Project

The TADP introduces the first public-private partnership for a water supply and sewerage project in India and brings a number of other innovations to this sector.

- The first water supply and sewerage project to be structured in a **commercial format**
- The first **project-specific public limited company** for water and sewerage with **equity participation** of major beneficiaries, state and central governments and financial institutions
- The first **concession** by a state government to a public limited company to draw raw water for domestic and industrial uses and to collect revenues
- The first **index-based user charges** and direct **cost recovery** for urban environmental services
- **Construction, operations and maintenance** of infrastructure and related services by experienced domestic and international operators

### Sewerage

The new sewerage system will serve a population of 639,500 in the town by the year 2030 and will have the capacity to treat 50 mld of household sewage. It will consist of a collection system, pumping stations and two sewage treatment plants. Low cost sanitation facilities, including water closets and septic tanks connected to the sewerage system, will also be provided for 88 slum areas, with a population of 57,780 (about one quarter of the city's population).

The original TADP was to include an industrial effluent collection and treatment system but this component is now expected to be provided through other means. The bleaching and dyeing units in Tiruppur had been placed under a court order to provide for the collection and treatment of their effluent. By mid-1998, however, these industries had not done so, and the Madras High Court directed the Tamil Nadu Pollution Control board to take immediate action. Because the collection and treatment component of the TADP could not be constructed in time to comply with this new order, the component was deleted from the TADP design and these units are now constructing their own effluent plants.

### Financing Plan and Financial Viability

The total cost of the TADP, inclusive of escalation and interest during construction, is estimated at \$200 million. The project will be funded through a combination of debt and equity, with participation of both the public and private sectors. On the equity side, holders will be the Government of India, TACID, TEA, IL&FS and the private sector BOT operator.

Debt will be raised through financial institutions, the capital markets, and a loan from IL&FS. IL&FS has obtained a \$25 million loan through USAID's Housing Guaranty Program which guaranties a loan through the US market for a term of 30 years. This long term debt has enabled NTADCL to improve the financial viability of the project, and the debt/equity ratio is expected to be 2:1.

Recovery of investments will be achieved through a composite water charge which is the result of crosssubsidization among industrial and domestic users. Gross revenues each quarter (excluding O&M expenses and taxes) will first be appropriated towards payment to lenders and then to equity holders. Any shortfalls will be added to the total cost of project, and surpluses will likewise be deducted from total cost.

The financial viability of the project is based on an assessment of the demand for water by both households and industry, which indicated a willingness to pay by both parties. Pricing for industry has been determined on an opportunity cost basis, based on rates currently paid to private tankers, while pricing for the domestic sector is based on current pricing practices in the state. These charges will enable the project to recover capital and maintenance costs of the water supply as well as the sewerage systems.

### Support from the FIRE(D) Project

While the FIRE(D) Project provided targeted project development support to the TADP partners, it also provided broader training and capacity building to these partners and to the city of Tiruppur.

## Project Development

The FIRE(D) Project team recommended a Project Report format to IL&FS for submission to USAID for HG funding, and then reviewed the Project Report. FIRE(D) also provided technical assistance in the identification of project risks and the preparation of a mitigation plan. At the request of IL&FS, the FIRE(D) team reviewed the bid documents and assisted in developing a bid evaluation framework.

## Capacity-Building

Looking beyond the TADP, FIRE supported the training of IL&FS officials in development of private public partnerships in water and waste water projects and the negotiation and financing of investments in infrastructure projects.

The FIRE(D) team also provided technical assistance and training to Tiruppur Municipality to improve its capacity to deliver urban services and mobilize resources. The FIRE(D) team worked with city officials to conduct several assessments related to infrastructure priorities, pricing and cost recovery and consumer demand. A City Infrastructure Priorities Assessment provided an estimation of infrastructure requirements, financial projections and a prioritization of service provision options. An assessment of Pricing and Cost

Recovery issues suggested three strategic options based on the target of achieving full cost recovery for water supply over a period of eight years. And a Demand Assessment, assessing consumer demand and willingness to pay for water supply and sewer services.

The FIRE(D) team also carried out a training needs assessment of the city and assisted the Tamil Nadu Institute of Urban Studies to conduct a series of training activities for the council in the areas of water supply and drainage, solid waste management and resource mobilization. And at the request of the Municipal Council, the FIRE(D) team also provided assistance to improve municipal accounting and to enhance presentation of the municipal budget.

To promote successful innovations by other Indian cities, the FIRE(D) Project sponsored a study tour for the Tiruppur Municipal Council and elected women Councilors to learn about innovative programs in solid waste management, slum upgradation, community based financial systems and low cost sanitation in the cities of Delhi, Ahmedabad, Baroda and Surat. Some of these innovations are now being implemented in Tiruppur. With the active participation of the municipal councilors, local NGOs and representatives of business and trade associations, the FIRE(D) team facilitated development of a solid waste management strategy which now has been approved for implementation by the municipal council.



# Project Note 28:

## State Incentives to Increase Efficiencies in Urban Water Supply in Maharashtra

Improving the efficiency of existing water and sewerage systems is a cost-effective way for municipalities to improve these services and extend them to all residents, including the poor. Greater efficiencies in conserving energy, reducing leaks, collecting tariffs, and leveraging state funds help cities meet their immediate water demand. These changes also position municipalities to mobilize resources for sustainable projects to rehabilitate and augment existing public works. This Project Note describes Maharashtra's efforts to help municipalities increase their efficiency in water supply and sewerage service delivery and enhance private sector participation through a new incentive grants program being used by Sangli-Miraj-Kupwad Municipal Corporation.

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Many studies, such as the Sukthankar Committee Report, have documented the need for improved water and sewerage services in Maharashtra's cities and others in India. The state government provides grants and loan guarantees to urban local bodies (ULBs) for new water supply projects. Consequently, many augmentation projects have been initiated to meet the water demands of a growing population. However, inadequate attention is given to operations and maintenance (O&M), customer service, water leakage, unauthorized connections, theft, and energy conservation of existing systems. As a result, unaccounted for water (UFW), the difference between the amount of water produced and supplied to the distribution system and the amount sold, is a large portion of the total quantity of water supply. UFW is estimated to range from 50 to 65 percent in the state.



Financial analyses have shown that local bodies' expenditure on O&M for water is more than revenue earned from water tariffs, and UFW is the major reason for this. Also, about 50 to 60 percent of the water system's operational costs are for energy—for electricity and fuel to pump water from intake to treatment plants to customers.

### Reducing Water and Energy Losses

Reducing costs and increasing revenues by operating more efficiently enables municipalities to obtain resources to invest in rehabilitating existing works and building new ones. Three tools help local officials assess the situation and plan improvements, especially if the studies conclude with specific,

prioritized recommendations and an action plan geared to implementation.

- *Leak detection surveys* identify leaks in transmission pipelines and throughout the distribution system. They help officials to design leak reduction programs to stop leaks that waste or contaminate treated water. They also help officials to develop a plan for maintenance and repairs, to improve connections to consumers, and to improve water quality.
- *Water audits* measure production and use of water, and include enumeration of all consumers (registered and unregistered), a map of the distribution network, measurement of water flow, and a check of the functioning of water meters. Officials can use them to help create citizen awareness of the need to conserve water, improve water billing and collection, locate water theft, regularize unauthorized connections, control unrecorded water, increase meter use, and keep accurate records of water use.
- *Energy audits* include an inspection of energy consumption and of pumping stations and how efficiently they use energy. The audits identify energy saving measures and their costs. Suitable energy conservation measures can reduce energy costs between 25 and 40 percent.

In September 2000, the state government directed that its municipal corporations and class A cities (cities with more than 100,000 residents) undertake these assessments and develop action plans to reduce unaccounted for water and bring about energy conservation, either with their own staff or with

<sup>1</sup> *Incentives to ULBs for Water Audit, Energy Audit, Water Leakage Detection and Reduction and Private Sector Participation*, issued by the Government of Maharashtra Water Supply and Sanitation Department, September 27, 2000.

technical service providers approved by the state. In the same resolution, the state announced a restructured capital grants program and directed these cities to encourage private sector participation in the sector and introduce a double-entry accrual-based accounting system.<sup>1</sup> Five subsequent government resolutions contained guidelines and procedures to implement the new capital grants program.<sup>2</sup>

## Restructuring the Capital Grants and Guarantees to Create Incentives for Reform

The state government wanted to provide incentives for municipalities to improve the efficiency of their water and sewerage services and to encourage private sector participation. It decided to restructure the program of capital grants and state government guarantees for loans for water supply schemes. In the past, the state water board, the Maharashtra Jeevan Pradhikaran, built new works using capital grants and loans from domestic financial institutions—such as the Life Insurance Corporation of India and HUDCO—which were guaranteed by the state, and turned them over to ULBs. With decentralization, the ULBs are now responsible for capital works as well as O&M.

The restructured capital grants are divided into two parts: 30 percent of the total is for Initiative Incentive Grants. These grants allow ULBs to conduct water audits, energy audits, and leak detection studies and support implementation of recommendations based on these studies. The state laid out procedures for these audits and programs in March 2001.

The other 70 percent of the capital grants program is for capital works, as before. But now this portion of the capital grants and all loan guarantees are conditioned upon the cities preparing a “time-bound” action plan and having taken effective steps toward completing a water audit, an energy audit, and taking measures to reduce water leakage.

<sup>2</sup> *Procedures and Guidelines for Water Audit, Energy Audit, and Reduction of Unaccounted for Water*, March 21, 2001; *Guidelines for Private Sector Participation in Increasing Performance and Investments for Water Supply and Sewerage*, June 12, 2001; *Financing Patterns for Water Audit, Energy Audit, Leak Detection and Rehabilitation Schemes*, November 3, 2001; *Administrative Approval and Government Grant-in aid to the Program of Water Audit, Energy Audit and Water Leakage Detection of the Sangli-Miraj-Kupwad Scheme*, December 3, 2001; *Approved List of Technical Service Providers for... Water Audit, Energy Audit, Water Leakage Detection, Leakage Conservation and Energy Conservation of Water Supply Schemes*, January 17, 2002.

### Sangli, the First Municipal Corporation to Access the Incentive Grants

The cities of Sangli, Miraj, and Kupwad merged into one municipal corporation in 1998. Located on the banks of the Krishna River in southern Maharashtra, Sangli is a major business center. The present population is estimated at 450,000, including 31,000 slum residents. The existing water and sewerage systems are more than 40 years old and no new schemes have been undertaken in nearly 20 years. Poor water quality, a main concern of residents, is due to inadequate sewage collection, treatment, and disposal, as well as the dilapidated water supply network and facilities.

The USAID FIRE project is supporting the Sangli-Miraj-Kupwad Municipal Corporation as a model for medium-sized cities for improvement of service delivery. The FIRE project is undertaking a comprehensive program of technical support to the city in the areas of PSP in water and sewerage, accounting reforms, energy/water/leak detection audits, solid waste management, resource mobilization, and improved service access to the poor. The city is implementing an accrual accounting system and computerizing its records. It has introduced area-based property tax assessments for new properties and issued service contracts for solid waste collection.

The Sukthankar Committee visited the city to discuss the need for reforms in the water sector with officials. At a workshop in Pune in February 2000, corporation officials decided to work with FIRE and Infrastructure Leasing & Financial Services Ltd (IL&FS) to develop a demonstration water supply and sewerage project with PSP. The general body unanimously approved this new approach later that year. The first phase of the project proposes reduction of leaks and energy savings, improved O&M practices, customer service, staff training, and preparation for second-phase investments. The first phase will be implemented through a three-year management contract. The second phase consists of attracting investments to augment the service, and will be implemented through a long-term contract such as a concession that will use a special purpose vehicle jointly operated by the corporation and IL&FS.

The corporation applied to the state government for a grant under the restructured capital grants program. The state government announced its support for the first phase in December 2001. The state will provide an Incentive Grant of Rs. 60 million (US\$ 1.25 million) to cover 75 percent of the management contract cost. It is expected that the state will award another grant to cover 23.3 percent of the system rehabilitation costs. The corporation entered into an agreement with IL&FS to support the city in the development of the project on February 2, 2002. The corporation met private sector water operators to discuss development options the following week and will begin the bidding process soon. The corporation's proposal played an important role in the state's formulation of government resolutions to implement the new Incentive Grants program.

| Urban Local Body           | State Grant Share | Local Body Share |
|----------------------------|-------------------|------------------|
| Municipal Corporations     | 75%               | 25%              |
| Class A Municipal Councils | 75%               | 25%              |

The state government detailed the financing patterns of the Incentive Grants in a November 2001 resolution that set up the program on an experimental basis from 2002 to 2005. The grants can be used for audits and for system rehabilitation.

for water billing and collection, including the purchase of computers. Routine maintenance and repair works are not eligible for Incentive Grants. The TSP will assist the city through the competitive bidding process and monitor the firm undertaking the rehabilitation work, but the responsibility for ensuring completion lies with the ULB. Eighty percent of the state grants will be released to the urban body based on work progress. The final twenty percent, however, will be released only after the state ascertains that the anticipated water and energy savings and increase in revenue have actually been achieved.

### Funding of Water, Energy, and Leakage Audits

The state will provide a grant of 75 percent of the costs of a water audit, energy audit, and leak detection survey; the local body is required to provide 25 percent of the audit costs. Municipal corporations should carry out these studies within three years and municipal councils within two years. Grants will cover procurement of essential equipment, including computers, consultant services, and staff training to conduct these audits on an ongoing basis. The urban

### Encouraging Private Sector Participation

The state issued guidelines for private sector participation (PSP) to increase performance and investments for water supply and sewerage in June 2001. The resolution noted that traditionally the state commissioned construction of water supply schemes and turned them over to ULBs for operation and maintenance. When O&M is not done properly, losses result in the breakdown of the works, which is followed by a request to the state to build a new scheme. PSP can help cities make efficiency improvements that mobilize internal and external resources, and thus leverage state funds to help break this vicious cycle.

| Urban Local Body           | State Grant Share | Local Body Share |
|----------------------------|-------------------|------------------|
| Municipal Corporations     | 23.3%             | 76.7%            |
| Class A Municipal Councils | 25%               | 75%              |

body may use a consultant from the approved Technical Service Providers (TSP) list.<sup>3</sup> The city must spend its 25 percent share first, and the state will pay in installments based on progress, with the final 20 percent payment coming after a satisfactory review by the state.

There are many aspects of existing schemes that can be managed more efficiently through PSP, e.g., metering, billing, collection, O&M, and repairs of the distribution system. Before entrusting water supply projects to private operators and deciding what type of contract is best, many factors should be carefully weighed. Three options for private sector participation are:

### Financing of System Rehabilitation

The urban body, with the help of the TSP, will propose rehabilitation works that are needed to take care of the deficiencies and improve efficiency, based on the findings of the audits. For municipal corporations, the state will provide 23.3 percent of the rehabilitation costs in grant funds; for municipal councils, 25 percent. The local body will raise the remainder, most likely from a combination of its own revenues, loans, or from the market. Eligible activities include public stand posts, repairs and replacement of damaged meters and pipe connections, improvement in operation of water treatment plants, repairs and replacement of old pumps and motors to conserve energy, and creation of an effective system

- *Management contract* for three to five years. The private operator will be responsible for managing the existing water supply system and employees, and its payments are linked to performance. Sharing profits can be an incentive to the operator to exceed stated goals in billing and collection, reducing UFW, and saving energy. The ULB is responsible for making investments and rehabilitating the system.
- *Lease contract* for six to ten years. The operator is responsible for incurring expenses for O&M and repairs, collection of water charges, and minor equipment and pipeline replacements. The ULB should have fixed an appropriate water tariff before entering into the contract and the operator should pay a lease fee for using the water supply. The ULB will be responsible for making new investments in the system.

<sup>3</sup> Published in a *Government Resolution* on January 17, 2002, following advertisement for pre-qualification of technical service providers in June 2001.

- *Concession contract* for 20 to 30 years. The contractor is responsible for new investment, as well as O&M. The tariff setting mechanism is defined in the contract to ensure the contractor adequate revenues. The contractor will turn over the system to the ULB at the end of the contract.

The ULB should invite competitive bids when selecting private organizations. The state guidelines detail a format for the bid documents and describe how they should be advertised and evaluated. A timetable of progress and a report on performance should be included in the terms of the contracts. To ensure transparency, officials should consult with elected representatives, consumer associations, experts in the field, and the private operator throughout the process. The guidelines conclude with a list of the responsibilities of the private contractor and ULB during the contract period.

## Conclusion

Maharashtra has led the way in state efforts to reform water supply and sewerage services. Its efforts to provide urban bodies with incentives to meet rising water demand by more efficient operations, through its restructured capital grants program, promises to benefit participating cities and their residents. The Sukthankar Committee Report set a road map for the future of water services in the state. The report also proposed a new regulatory framework to improve service standards for water and sewerage and a more equitable and effective way of determining water user fees. The Initiative Incentive Grants will complement the proposed regulatory framework and will help local bodies implement the new road map.

# Project Note 21:

## ***Constraints to Developing Commercially Viable Urban Environmental Infrastructure Projects***

*Despite recent efforts in project development, success in developing and implementing commercially viable projects has eluded the urban environmental infrastructure sector more often than not. A review of experiences in project development reveals a number of constraints. Chief among them are weaknesses in process management, private sector capacity and risk management and a lack of clarity in sub-sector priorities. This Project Note describes these and other constraints and approaches to addressing them.*

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Despite recent efforts in project development, success in developing and implementing commercially viable projects has eluded the urban environmental infrastructure sector more often than not. Even when project development has appeared to be adequate, process management and political commitment have wavered.

This, of course, has been true of other sectors such as the power sector, where new governments have resorted to renegotiations and even cancellations of contracts which were signed by previous governments. Even in a few cases where projects appear to be heading for technical and financial closure, project development and negotiations have generally taken a long time and considerable resources. It is, therefore, necessary to identify the main constraints which inhibit the process so that these may be addressed.

### **Weaknesses in Process Management**

The entire notion of developing and implementing projects in a commercial format is a relatively new trend in India. In the case of most urban sector projects, initial sponsorship must come from public sector agencies. However, unlike conventional projects, these projects require considerable efforts in evolving project documentation, developing institutional arrangements for project structures, securing approvals and clearances from stakeholders, financial structuring, selecting a contractor, operator or concessionaire and ensuring overall financial closure.

A wide range of actors have to be involved in all these processes, and consistent coordination is necessary. In addition, there is a constant need for the sponsor to pursue project related activities to mitigate and minimize risks. Both capacity and legitimacy are required to perform these roles.

Typically, however, most public sector agencies do not have the necessary human resources to carry out these tasks, and projects fail to take off because process management support has been missing. It is in recognition of this critical role that state governments have begun to set up project development facilities and funds to manage development of projects in commercial formats.

Appropriate institutional arrangements and clarity for stakeholder consultations is also important, however there are no fora through which to provide for these effectively. Consultations are likely to be ad-hoc in nature, and while urban planning legislation generally requires dialogue, the processes usually followed are not very effective.

### **Lack of Clarity in Sub-Sector Priorities**

There is a lack of clarity in appropriate models and approaches in urban infrastructure sub-sectors such as water, sanitation, solid waste, roads and public transportation, area development and management improvements. Commercial structuring will require different approaches in each area, and there is need for debate at the national level and guidelines for each sub-sector. While suggestions in this regard have begun to emerge, these need to be reflected in a clear policy statement first at the national level, which could then be adapted by state governments to suit the local contexts. For example, based on recent reports, the table above highlights possible priorities in selected sub-sectors.

### **Risk Management**

In view of the lack of any strong regulatory frameworks, the burden of risk management largely falls on contract documents. While contractual documents could handle the risks during construction and operations period, there are considerable risks at the

| Illustrative Priorities for Selected Sub-Sectors of Urban Infrastructure |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sector                                                                   | Appropriate focus and priorities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Water Supply and Sanitation                                              | <ul style="list-style-type: none"> <li>• Long term concessions performance-based management contracts for entire distribution systems</li> <li>• Commercialized water utility with corporatization or profit centre basis, with management contracts (with private sector or community groups) for different tasks such as reduction of physical leakages, improved consumer services, billing and collection of water charges, etc.</li> <li>• Community contracts for provision of services in low income neighborhoods</li> </ul> |
| Solid Waste Management                                                   | <ul style="list-style-type: none"> <li>• Primary collection through contracts with community organizations and NGOs</li> <li>• Secondary collection through performance-based management contracts with private contractors</li> <li>• Management contracts for collection and disposal of special wastes such as from hospitals and markets</li> <li>• Safe disposal of solid waste through BOOT contracts</li> </ul>                                                                                                               |
| Roads and Public Transportation                                          | <ul style="list-style-type: none"> <li>• BOOT arrangements for by-passes and bridges</li> <li>• Needs to combine land development with mass transportation related projects on a BOT basis</li> <li>• Possibility of corporatization or profit centre basis of public transportation agencies</li> </ul>                                                                                                                                                                                                                             |

project development stage itself. This is evident from the number of projects which have been abandoned, due to either inadequate project preparation or political exigencies. These development stage risks will need to be handled through better project preparation and process management.

Other risks can be handled through development of regulatory frameworks and greater attention to contract development. Both deserve critical and urgent attention. An important aspect in risk management relates to the need to identify the party best able to handle the risks and develop cost-effective risk mitigation strategies. The Ministry of Urban Affairs and Employment (MOUAE), along with some state governments, could support these developers through the proposed national policy reform group and the project support facility.

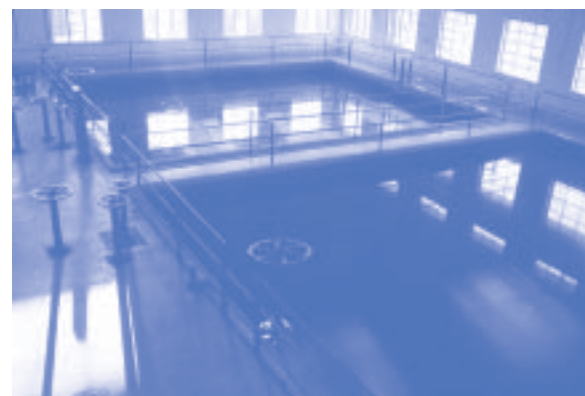
Detailed risk assessment and mitigation measures will need to form part of the project development process. Water supply and sewerage projects with PSP will require a risk management plan for the entire project period, from development and construction to operations.

One of the key areas in this regard is to develop alternatives to the blanket state government guarantees which have been routinely used for financing urban

infrastructure projects. Alternatives such as escrow arrangements along with the necessary reserve funds and performance guarantees, such as for raw water quantity and quality from a state government under a water concession, need to be explored further.

The Tiruppur Project, for example, has provided for such a facility. The Government of Tamil Nadu has committed to establish a water shortage period fund through a non-lien account with an initial

corpus equivalent to six months revenues. In addition, the risks of receivables to Tiruppur Municipality for the charges for bulk water supply are mitigated through the escrow account charged to the New Tiruppur Area Development Corporation Limited (the Special Purpose Vehicle created for the project); a revolving security deposit equivalent to one month receivables; and an irrevocable letter of credit from the municipality of the same amount. The bulk of revenues for the project come from industrial users, who will also provide a revolving security deposit equivalent to three months' receivables.



## Private Sector Capacity and the Procurement Process

Commercial project structuring will, in most cases, require some form of private sector participation, at least in the implementation arrangements. The entire idea of PSP rests on the assumption that there exist domestic (or even international) private sector firms with interest and capacity to work in this sector. A systematic assessment of private sector capacity and the effort needed to develop it—for different sectors and for different forms of private sector participation—is necessary.

Based on a more casual analysis, it appears that while there may be local firms capable of taking on construction activities, there are only a few who can take on large scale integrated turnkey contracts. Most domestic firms, however, have very limited, if any, experience on the operations side of water and sewerage systems. This is mainly because there has never been a demand for such services. Only a few international firms have opened offices in India and possess or are ready to take on operations- related contracts in India. Strengthening the capacity of Indian firms through appropriate joint ventures, in addition to training support, is necessary.

The role of the private sector in services such as water supply and sewerage also needs to be reviewed. More participatory arrangements with involvement of user groups in the planning, design and implementation process need to be evolved. This necessitates that traditional construction or even operator firms take a far more developmental approach with greater efforts toward community participation.

There is also a lack of clarity in procurement process. No clear benchmarks and guidelines exist and, therefore, the process has varied significantly in terms of the bidding process, extent of preparedness of sponsor agencies and bid evaluation criteria and process. Often, despite the competitive process, many bidders have expressed doubts about the authenticity of selection. Inadequate preparation, especially for PSP type projects, increases bid preparation costs, and risks due to inadequate information tend to inflate bid prices.

An emerging trend in concession type arrangements for water and sewerage services is to work through a memorandum of understanding (MOU). This route has been adopted in Karnataka and in Andhra Pradesh. It must be understood that if a proper regulatory framework is in place for water tariffs and service standards, and adequate disclosure norms can

be applied to the concessionaire, it will be possible to adopt this route meaningfully. This would be similar to the licensee system under the Central Electricity Act. It must be recognized, however, that without such a framework, it will not be possible to evolve a meaningful system.

This framework would also require a provision for competitive bidding for any procurement of major construction activities. In such cases, initial selection of the MOU partner may be done through a preferred bidder route. This is often referred to as a “beauty parade” as the initial selection is based on technical and financial capacity, as well as operational experience based on a business judgement. It is likely that such processes, if carefully supported through state governments, will provide useful local demonstration cases.

### The Need for a “Champion”

The inability of some infrastructure projects to take off is due to the lack of a “champion” to guide the process through. It is common among public agencies to find that officers in charge of project development are transferred half way through the process. This increases project development risks to a great extent. The champion for a particular project may come from any of a number of different stakeholder groups. For example, a public agency sponsor may be an elected representative or an administrative officer. In other cases, the champion may be a local consumer group which seeks to improve its access to services, (as in the case of the Tiruppur Area Development Project) or a financial institution which also takes on the project development role.

### Inadequate Institutional Arrangements

The lack of commercial orientation among authorities charged with service provision also constrains project development. For example, under the 74th Constitutional Amendment, in most states provision of water supply and sanitation services vests with the local or municipal authorities, and a municipal department is usually charged with this activity. However, there is no clear link among investments, costs and revenues from the service. Further, there is a lack of clarity of objectives, and efficiency in service provision is hampered by political interventions in day-to-day functioning. Tariff policies are often skewed in the name of reaching the poor, who receive hardly any municipal services. A review of institutional arrangements, especially for services such as water, sanitation and public transportation.

The change in this regime will require a move towards agencies which, under a contract to the municipality, can operate as a business entity. Such activities may begin by developing separate departments which operate on a profit centre basis. In the future, corporatization of such agencies may then be explored. This will, however, also require that strong and well thought-out regulatory arrangements be developed.

In most states, there will also need to be some reform of the state water and sewerage boards. Chennai Metro Water Supply and Sewerage Board, for example, has decided to explore the possibility of corporatization, along with the necessary regulatory framework. While the MOUAE needs to develop alternative models, some of the more reform-minded state governments will need to explore development and implementation of such institutional reforms.



# Project Note 14: Balancing Commercial Viability with the Needs of the Poor in the Development of Urban Water Supply and Sewerage Projects

*The development of commercially viable infrastructure projects requires the introduction of (at least gradual) tariff reforms and a move toward cost recovery or an efficient pricing regime. Consequently, it is common to find apprehension among elected representatives, academics and bureaucrats when the focus turns to the impact of such projects on the poor. However, significant benefits for the poor may be derived from a commercial orientation. The FIRE(D) Project has worked to explore implementation arrangements that ensure access for low income groups to city-wide systems. This Project Note reviews tariff and subsidy issues, approaches to integrating the needs of low income settlements with city-wide services and policy issues to be addressed in the future.*

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A review of water and sanitation services in Indian cities highlights the poor condition of these services, inadequate coverage and low standards of service provision. This situation is further aggravated by a lack of customer orientation. While any improvement in this situation will require widespread institutional and financial reforms, special attention has to be paid to approaches to ensure that the poor will gain in equal measure from these changes. Contrary to conventional wisdom, it is possible to ensure access to services for the poor while moving to more commercial orientation in the provision of services.

## Financing, Tariffs and Subsidies

To achieve a balance between commercial viability and access for the poor, special attention must be given to the issues of financing, tariffs and subsidies. In the past, most services within slum settlements have been supported with large subsidies. Such subsidies, however, are common not only for the poor but for most of the domestic sector. In fact, while low tariffs are justified on the grounds of affordability for the poor, these services often do not reach the poor at all. Subsidized systems even prevent wider coverage because future investments become difficult.

It is important to distinguish between infrastructure and consumption charges. Infrastructure charges are levied in lieu of access to municipal water and sewerage networks. With respect to consumption, it is possible to ensure affordable access to the poor through life line blocks at affordable rates through cross-subsidization. Some economists, however, argue against rising block tariffs because they distort price signals. Alternatives such as direct concessions or credits (perhaps through vouchers) to low income communities are often suggested.

However, subsidies on consumption charges are useful only to those poor communities that have gained access to municipal services. To ensure access, city level programs to provide utility networks within low income settlements at “affordable” connection charges are necessary. Three aspects are important in this regard.

## A Total Slum Approach

It has been common to take piecemeal approaches to slum development, and depending upon the funds allocated in a given year, some activities are taken up in different slum areas. This approach, however, does not recognize the overall needs of the slum area with an appropriate plan to raise it to a “normal” development level. Though achieving minor improvements, the area remains a “slum settlement.”

Slum redevelopment efforts in Indore, Ahmedabad and Baroda, however, reflect an approach which focuses on improving the entire slum area in a comprehensive manner, to integrate it with the city’s “normal” housing developments. This represents a shift from “full subsidy spread thinly over all settlements” to “partial subsidy with full improvements in all settlements.”

It then becomes possible to charge residents for the services received, because willingness to pay tends to be higher for individual services at better standards. For example, under the Parivartan Project in Ahmedabad, slum communities pay one third of the full cost of development. It also enables more rational planning at the settlement level, considering terrain conditions and possibilities for commercial development. The experience under slum networking

projects suggests that it is possible to reduce infrastructure costs considerably while achieving higher service levels. And because this approach enables the slum settlement to be integrated with “normal” housing, normal property taxes can be levied subsequently, enhancing local revenues. Ultimately this enhances the social status of the settlement.

## Definition of Property and Infrastructure Charges

It is important to link the total slum approach to land use and land development regulations. Most cities impose a connection charge for linking a property to the municipal network, and in the interest of equity, it is important that an individual slum house or plot be recognized as a separate property. Then each house becomes eligible for a connection as are other properties, and the slum community is not required to bear the costs of infrastructure provision.

Reduction or removal of subsidies, however must apply to all residents, not only slum dwellers. For example, in Ahmedabad, the connection charges for slum dwellers under the Slum Networking Project (which now includes an individual toilet) may be close to full prevailing tariff, and not the two-thirds subsidy as it is described. This anomaly, though, is the result of the tenure status and lack of recognition of each slum house as a separate property, and requires a review of the land sub-division regulations and the definition of property under the municipal legislation. The lack of legal tenure is a major obstacle to enhancing coverage of slum settlements within this framework. In the short term, approaches such as land sharing, which have been used successfully in India and Thailand, should be explored.

## Deciding on Appropriate Subsidy Levels

Evidence from municipal programs suggests that considerable subsidies are being poured into slum areas without adequate transparency, accountability or improvement. Subsidies for urban infrastructure should be internalized at the city level or linked to available programs of state and central governments. Subsidies must also be fixed transparently in relation to the overall magnitude of the slum population of the city.

Subsidies should be linked to acceptable minimum standards, as well as availability of total funds to reach the target population within a defined time frame. Financing for infrastructure at standards above this level can then be linked to effective demand and

willingness to pay at the community level. In order to make this process transparent, a special fund may be set up which may be used with performance incentives for low income communities. Other sources outside of local budgets, such as the local corporate sector and other government programs, may also be identified to maximize the contribution to such a fund.

## Community-Based Systems for Management and Credit

Both domestic and international experience suggest the need for participatory approaches to the provision of services within slum communities. Recent efforts in Ahmedabad and Baroda and projects in Andhra Pradesh provide useful examples. Effort is also necessary to extend participation in the selection of service levels in relation to ability and willingness to pay for services.

Local involvement in planning and management requires strong community management organizations (CMO). Similarly, greater emphasis on payment for services requires building the capacity to pay through community-based credit systems (CCS). CMOs and CCSs provide an institutional base on which a participatory approach can be developed. The role of women in these institutions will be crucial; not only do basic services impact the lives of women to a greater degree than men, but available evidence indicates that women’s participation in CCS has been a critical success factor.

Development of these community-based systems for credit and management must receive priority as both require considerable lead time before mature and responsible organizations can emerge at the local level. It is otherwise common to find a municipal authority ready with engineering plans for large water and sewerage projects without any plans to integrate slum settlements, because the planning and implementation capacity for development within settlements does not exist. It is therefore necessary to ensure that the formation of CMOs, CCSs and developing community consultation processes become routine activities at the local level.



## Alternative Approaches to Integrating Needs of Low Income Settlements

It is important to consider not only the provision of infrastructure and services within slum communities, but also the ability to create linkages to macro-level infrastructure, and the placement of responsibility for maintenance and operation of infrastructure and services. Within a project framework, three approaches can be identified to integrate low income settlements with city-wide systems.

### Slum Infrastructure as Part of an Integrated Construction Contract

Provision of infrastructure within all slum settlements can be included in the main construction contract for city-level systems. The construction contractor, then, must have the capacity to work with community-based management which will be crucial to ensure proper services. Also, a total slum approach requires the provision of all services (water sewerage, drainage, sanitation, roads and streetlights) in an integrated manner, and the contractor must be willing to adapt to these needs.

Issues of tenure must be addressed before such a contract is let. This approach is most likely to succeed in smaller cities where slums and low income settlements are likely to be less complex in relation to physical and tenure issues. The construction contract under the Tiruppur Area Development Program in southern India includes such a provision. In most other cases, however, it may be difficult to integrate infrastructure for slum settlements into a broader construction contract.

### Parallel Programs for Slum Infrastructure

When integration within one contract is not possible parallel programs may be developed. Linkages between the two activities need to be ensured so that the slum community can connect with the city system easily and the timing of activities is synchronized. It is also essential to integrate financing and subsidy issues with the overall financing framework for city-wide systems.

The Slum Networking Project in Ahmedabad, for example, is being implemented through a partnership among stakeholders — the city government, communities, SEWA Bank, NGOs and private sector sponsors. In Nagpur, under a GTZ project, a parallel program is also envisioned with the involvement of

NGOs. Such parallel programs can incorporate the lessons related to community based systems more effectively.

### Provision of Slum Infrastructure as Part of a Concession for a Full System

A long term concession which clearly specifies the coverage and standards of services to be achieved over time by the concessionaire is a completely different approach. In India this is a new approach, but it is likely to be attempted in a city in Maharashtra where the possibility of a long term concession is being explored. A few cities in Karnataka have recently signed a Memorandum of Understanding with private operators to incorporate the type of private sector participation which may lead to such an arrangement.

This approach benefits simultaneously from flexibility, the potential for community participation, and the efficiencies of the private sector in providing services. The concessionaire for water and sewerage services in Buenos Aires, Argentina was appointed in 1994 and has shown great flexibility by involving communities and providing infrastructure networks within low income communities. Development costs of new networks are shared among all water users, and the concessionaire has decided to abolish water connection taxes which were found to be too expensive for the newly connected, who were largely from low income communities. Ultimately, this has led to lower costs and better service coverage.

### Issues in Institutional Arrangements

A common shortcoming among slum improvement low income communities to a broader, city-wide approach. “Scaling up,” however, is often misunderstood, and the city-level approach requires a completely different set of rules. It may be difficult to change rules already put in place to serve a few communities but which are irrelevant for a city-wide approach. In evolving such an approach, several issues must be addressed.

First, there is a need to integrate lessons from the past, and an effective mechanism for integrating these lessons must be developed. Second, the participation of stakeholders is critical, especially city government, community-based management organizations, private sector providers or contractors, community credit systems and NGOs. Often these groups have limited capacity, and institutional arrangements must reflect this fact. Finally, given the complexity of institutional arrangements and the

participation of a number of stakeholders, it is critical that the rules are defined up front and the roles of different user groups are clarified from the beginning, and through consultation. At the same time, there is a need for flexibility to allow lessons from actual practice to be incorporated progressively.

## The Way Forward

The FIRE(D) Project will continue to explore implementation arrangements that ensure access for low income groups to city-wide systems. State and local governments now need to support evolution of innovative approaches through policy measures such as:

- making explicit efforts to integrate access of low income groups with city-wide water supply and sanitation services;
- linking tax exemptions, fiscal concessions, government guarantees and other support to access for low income groups;

- building the capacity of stakeholders, particularly in low income groups;
- rationalizing local tariff structures; and
- leveraging limited subsidies by setting rules for citylevel requirements, rather than only for a few settlements.

As local governments in India move forward to adopt emerging private sector participation and new financing arrangements, it is critical that adequate emphasis be placed on ensuring the access of low income groups to these new systems.

# Project Note 8:

## Assessing the Market for Urban Environmental Services: Demand, Preference and Willingness to Pay

*It is routine to assess the market demand for any commercial or industrial product before its introduction and over its lifetime. Yet this has not been true for urban environmental services, which have been regarded as essential public goods. Rational planning of infrastructure investments, however, must be based on an informed understanding of the market — consumer demand, preference and willingness to pay. And as cities begin to turn to the capital market for financing of infrastructure, the related issues of appropriate pricing and cost recovery become increasingly important. This Project Note offers a framework for rapid assessment of the market for infrastructure services which can be applied in the prefeasibility phase of project development.*

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### The Need for Market Assessment

Rational planning of infrastructure and services must be based on informed understanding of the market for these services. While many services are seen in the ‘merit good’ category, it is essential to understand user preference and willingness to pay, to maximize both effectiveness and efficiency. New modes of infrastructure finance now being explored in the wake of financial reforms in India demand, in turn, appropriate pricing and cost recovery for these services.

Market assessment focuses on the services which flow from infrastructure and not the facilities themselves. In other words, it focuses on the outputs, not the process. Therefore, in addition to water supply and solid waste management services, the market for treated water effluent and solid waste disposal systems also must be assessed because these produce revenues which help finance the infrastructure.



Traditionally, the market for urban services has not been the subject of assessment because these have been regarded as essential public goods. Further, many of these services are natural monopolies and therefore lack market alternatives. However, recent advances in contingent valuation methods and hedonic analysis, as well as the emergence of private markets in many cities in response to inadequate services, are helpful in developing market assessment methodologies.

In light of these factors, a market assessment for the service in question is essential. The framework presented here focuses on the market for water supply services. This assessment will help to identify

the type of service improvements which are preferred by different user groups, their ability and ‘willingness to pay’ for services, and will provide guidelines for tariff setting and likely effective demand at different price levels.

### Focus on Demand

It is common to find some notion of demand assessment in any report on a water supply project. In most cases, however, this is essentially an assessment of water requirement using prevailing norms and local consumption patterns. While this could be a good starting point, it ignores preferences and willingness to pay of different user groups and related quantity implications. Very often this approach tends to suggest very high levels of shortages without a clear indication of economic viability.

At the same time, most attempts to improve water supply have focused on subsidization, based on the assumptions that households are too poor to pay for water and that to achieve equity, government funds must be spread fairly and, thus, thinly. On the other hand, some international institutions have argued that even the poor can pay 3-5 percent of their incomes for water supply. This focus on supply has failed to solve the problem, and future research and planning should be grounded in a better understanding of demand — what consumers want and are willing to pay for. A number of research studies have investigated the determinants of demand — such as socio-economic background, characteristics of the existing system, price, distance and reliability — with surprising findings. Some of these studies are described in Box 1.

Market assessment for urban services is not common in India, and a systematic approach incorporating basic economic concepts has not been developed. The following approach combines relevant theoretical concepts with the practical needs of planners and decisionmakers regarding investment decisions and price setting. This approach reflects a Rapid Assessment

### Box 1: The Impact of Willingness-to-Pay Studies

Willingness-to-pay studies can have important impacts on public sector planning and decision-making, as the following cases demonstrate.

A 1993 study in rural Kerala used contingent valuation method to test the sensitivity of households to the monthly tariff for water from a yard tap compared to the higher cost of a household connection with improved quality.<sup>1</sup> The contingent valuation method allowed respondents to consider hypothetical changes, and the study found that the real constraint to providing household connections was not the high cost but the limited availability of local credit.

A 1990 study in Ukanda, Kenya examined the value that households assign to time spent collecting water.<sup>2</sup> By providing a choice of two water sources and identifying two decision factors, the price of the water and the time required, revealed preference analysis found that the value assigned to time saved due to improved water supply is much higher than previously believed.

A study of the private sector water vending system in Onitsha, Nigeria, demonstrated that households' willingness to pay for quality service may be surprisingly high.<sup>3</sup> There, the quality of service from the local water authority was perceived to be low, and most people purchased water from private vendors. To compete, therefore, the local authority must not only provide more affordable rates but provide a better product in terms of quality and reliability.

A 1995 study of Baroda, India, is one of the few such studies to focus on urban areas in India.<sup>4</sup> This study found that:

- About 85% of households without household connection expressed willingness to pay for improved standpost service.
- Among households with individual connections, about 63% were found to be willing to pay for better pressure, and 11% for better quality. Nearly 80% of those with household connections were willing to pay more even if service was not improved, as much as three times the current municipal rate.
- Approximately 58% of households were willing to pay a one time connection charge.
- The percentage of income households were willing to pay for water declined as incomes increase, though WTP for the highest income group was only 60% higher than that of the lowest income group. This suggests limited scope for cross-subsidization of water supply across income groups.

which may be conducted as part of Project Pre-Feasibility Analysis, as developed by the FIRE(D) Project; more detailed assessment would be essential at a later stage.

#### 1. IDENTIFY CONSUMER GROUPS.

The following criteria are suggested.

*Price Elasticity of Demand for Services:* For example, for many industrial and commercial users, as well as upper income households, the price elasticity will be very low, while for domestic users, especially the low-income, price will have a significant impact on consumption.

*Feasibility of Varying Connection Charges:* This will depend on past pricing practices, local administrative arrangements for pricing and cost recovery, administrative jurisdictions of authorities and political acceptability of varying rates.

*The Nature of Demand:* This varies in terms of quantity, quality and reliability; for example, industrial users may be bulk consumers with low quality requirements, in contrast with domestic consumers.

*Ability and Willingness-to-Pay for Services:* This is essential for price-setting both across and within user groups.

#### 2. CONDUCT A RAPID DEMAND ASSESSMENT FOR EACH CONSUMER GROUP.

Demand for urban environmental services is far more complex than a typical consumption commodity, and the following dimensions should be explored.

*Level of Consumption:* the quantity consumed through the connection or waste disposed of through a service.

*Access:* the user decision to locate in an area where service is available or to pay for laying of a distribution/ collection network.

*Connection:* user decision to connect to a network and the type and size of connection taken.

The assessment should address user preference and willingness to pay in relation to each dimension of demand. To determine what the markets will bear, it is necessary to identify a range of prices for each user group across the relevant dimensions of demand.

### Box 2: Sample Bid Game Questionnaire

1. Would you be willing to pay Rs. 25 per month for 1 kilolitre of public water? If so, proceed to #2. If not, proceed to #5.
2. Would you be willing to pay Rs. 50 per month for 1 kilolitre of public water? If so, proceed to #3. If not, proceed to #5.
3. Would you be willing to pay Rs. 100 per month for 1 kilolitre of public water? If so, proceed to #4. If not, proceed to #5.
4. Would you be willing to pay Rs. 200 per month for 1 kilolitre of public water?
5. What is the maximum number of rupees per month you would be willing to pay for 1 kilolitre of public water?

Source: Adapted from WASH Project Field Report No. 316, USAID

For example, in an unserved peripheral area, WTP may be assessed for access (a development charge), connection to the system (a one-time fee) and consumption (possibly metered charges). For domestic low-income user groups in particular, maximum affordable rates for ensuring lifeline services should also be identified.

In many Indian cities, private markets for urban services have emerged either because public services have been absent or their quality and reliability are poor. The demand assessment must include a reconnaissance survey to identify prices being charged by the private operators to different customers.

At this pre-feasibility stage, a simple bid game may be used in reconnaissance surveys as well as focus groups and discussions with users. For a sample bid game questionnaire, see Box 2.

### 3. DEVELOP DETAILED TARIFF CATEGORIES.

Detailed tariff categories can be developed which reflect the types of charges which can be levied on different service groups. Though a wide variety of charges may be levied, most service authorities do not adequately tap this potential in a meaningful manner. Tariff categories will depend to a great extent on the existing and past tariff charges, the complexity of the system, and the administrative and management capacity of the utility authority to determine appropriate charges and to conduct billing and cost recovery in an efficient manner.

### 4. MAKE INITIAL DEMAND FORECASTS.

Estimation of the likely growth in the number of connections and consumption for each user group can be done by collating growth trends with project provisions, through the following steps.

*Estimation of Connections:* across user groups over project life based on past growth rates, augmentation or extension of distribution networks, facility standards, capacity utilization and agency capability

*Setting Service Levels:* quantity across user groups based on existing service levels, number of connections and available capacity

*Estimating Total Consumption and Production Requirements:* for each user group, including a share of unaccounted-for water

*Estimating Quantities across Tariff Categories:* total connections, quantity of water, new connections, and total annual ratable value; allows for revenue forecasts

### 5. INITIAL TARIFF SETTING AND DEMAND ADJUSTMENT.

Initial tariff proposals for each user category can be identified based on the market assessment, WTP of different user groups and proposed service improvements. The feasibility of each proposal must be tested in terms of political implications, affordability, existing price levels and past revisions.

Based on these proposals, it must be determined whether tariff changes will have an impact upon demand. Consumption forecasts will be adjusted based on the price elasticity of demand. While price elasticity estimates should be worked out for a detailed market assessment, notional adjustment for important user groups can be made based on judgment.

#### ENDNOTES

<sup>1</sup> Sing, B., Ramasubbrao, R. and others (1993).

"Rural Water Supply in Kerala, India — How to Emerge from a Low Equilibrium Trap," Water Resources Research, Volume 29, No. 7, pp 1931-1942.

<sup>2</sup> Whittington, D., Xinming, M. and Robert, R.

(1990), "Calculating the Value of Time Spent Collecting Water — Some Estimates for Ukanda, Kenya," World Development, Volume 18, No. 2, pp 226-280.

<sup>3</sup> Whittington, D. and Lauria, X. (1991). "A Study of Water Vending and Willingness to Pay for Water in Onitsha, Nigeria," World Development, Volume 19, No. 2, pp 179-198.

<sup>4</sup> Vaidya, C. (1995). "Willingness to Pay for Water Supply and Sewerage in Baroda," Research Study sponsored by the Human Settlements Management Institute, HUDCO, New Delhi.