



The History of the FIRE (D) Program and the Approach to Working in India

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The Financial Institutions Reform and Expansion Program—Debt & Infrastructure, known as the FIRE (D) Program, began in the early 1990s in support of the Government of India's initiatives to liberalize the economy and decentralize government authority to the local level. Urban experts throughout India pointed to deficiencies in the infrastructure delivery system as a main constraint on the country's long-term growth. India needed alternatives to the traditional, publically funded and managed approach for developing and maintaining infrastructure. The FIRE (D) Program worked with all three levels of government (national, state, and local) to test alternative models and, where successful, replicate them across the country. The approach to working in the sector has been iterative and cyclical: (1) identifying the main challenge areas; (2) diagnosing the underlying causes of those problems; (3) designing innovative solutions and testing them; (4) reforming policy to help make the solutions effective and sustainable; (5) disseminating lessons learned from the experiences and training others in the technical aspects; and (6) replicating the successful solutions on a larger scale.

Strengths. The process is driven by local interests and parameters. By documenting and sharing successful pilots, urban experts throughout India become interested in replicating them on a larger scale. At a certain point, the momentum becomes self-reinforcing and is a sustainable solution for the country.

Weaknesses. The process that the FIRE (D) Program usually followed is not necessarily linear, because of the need to respond to diverse and changing situations on the ground. It is also slow to develop, because consensus has to build among local, state, and national stakeholders. Long-term support needs to be in place for sustaining any urban innovation, no matter how effective and applicable it appears to be.

This chapter discusses the history of the FIRE (D) Program within the context of India's effort to liberalize the economy and decentralize government authority to the local level during the last two decades. It then discusses an approach to working in the urban sector that has been effective for cities and states that are currently pursuing reforms.





ARTICLE 2.1

Origins of the FIRE (D) Program: Economic Liberalization, Housing Finance, and Infrastructure

As the longest-running project in the history of the United States Agency for International Development (USAID) and the one with the most experience in the urban sector out of any donors in India, it is well worth mentioning the FIRE (D) Program's origins and how it was embedded in India's history of urban reforms.

As part of India's economic liberalization in the early 1990s, USAID began supporting various economic growth initiatives, including housing mortgage finance. At that time, USAID and other donors viewed housing finance, and "shelter" more broadly, as a major development issue worldwide. In India, only two housing finance companies existed, the Housing Development Finance Corporation (HDFC), a private sector non-banking financial institution, and the Housing and Urban Development Corporation (HUDCO), a parastatal housing and urban development lender. The sector was completely nascent when the Government of India established the National Housing Bank (NHB) in 1987. To support the institution's creation, USAID provided financial and technical assistance support.¹ NHB became India's regulatory institution for housing finance as well as a purchaser of qualified mortgage loans. NHB's mandate also allowed it to provide some direct financing for low-income households.

Over the years, USAID provided US\$125 million worth of financial insurance support to NHB, HDFC, and HUDCO through the Housing Investment Guarantee (HIG) loan program, the predecessor program to the current USAID Development Credit Authority² for acquiring mortgage loans that were made by qualifying housing finance companies to qualified borrowers with incomes below the median household income. USAID originally guaranteed in hard currency loans from U.S. private investors. Entering into an exchange rate swap agreement, the banks could mitigate foreign exchange risk from HIG repayment. This support allowed the companies to significantly expand their private sector lending for housing.

This HIG program directly contributed to expanding the housing finance system, and also demonstrated to others that the housing sector was financially viable. It proved that a formal mortgage finance sector could exist in India, as envisaged in the Seventh 5-Year Plan that encouraged private markets to become the direct provider of finance while government transformed into a facilitator of development finance. Between 1988 and 1993, more than 80 housing finance companies were established and registered through NHB. These included private and public sector banks and public sector insurance companies, which began opening housing finance departments or subsidiary companies in many of their current branches. In this way, the geographical breadth of the program's reach across India expanded dramatically. The formation of India Life Insurance Company's housing finance subsidiary is one great example, since it became a household name. It is a publicly traded company that quickly became a big provider of housing finance, offering competitive rates and serving a wide segment of the population. Now, a decade-and-a-half later, the main policy debate in housing finance has shifted to improving the "down market" opportunities for low-income households. Since improving the poor's access to finance is an ongoing challenge worldwide—even in countries with long histories of formal mortgage systems—the current policy debate really shows the immense progress this sector has made in India.

¹ This project was USAID's first urban project in India and was led by Michael Lee until his departure in 1990. Thereafter, the project was led by Nabooroon Bhattacharjee, who joined USAID India in 1989, and Charles Billand, who joined in 1990 as the Mission's Urban Advisor. Both Billand and Bhattacharjee were among the chief architects of FIRE (D).

² http://www.usaid.gov/our_work/economic_growth_and_trade/development_credit/.





While the liberalization of land markets and the expansion of housing finance marked a major milestone in India's transition from a statist to a market-based economy, practical realities face many barriers. First and foremost, the expanding sector experienced an upward limit because cities did not have enough land with adequate clean water, sanitation, and roads to support housing and commercial development. And secondly, while individual investors and firms could access mortgage financing to develop buildings, individuals cannot build infrastructure; government has to remain significantly involved in this aspect of development.

The design process for the FIRE (D) Program was initiated in 1990 with a research paper that examined the land development process in Delhi.³ New Delhi's wide boulevards and spacious parks were not the norm for Indian cities. Studying the region as a whole, however, did adequately represent the formal and informal land development processes in other Indian cities. The study documented several major findings.

- The lack of potable water, sewerage, and solid waste collection were among the major impediments (up and beyond other types of infrastructure deficiencies) to providing a sufficient supply of serviced land and a minimum quality of life for low- and middle-income households.
- Neither the public nor private sector was capable of delivering a sufficient supply of affordable developed land to low- and middle-income households.
- As a result, the growth of slum communities filled the gap between formal sector supply and demand for housing sites.
- Unless major changes were made to the land and infrastructure supply processes, combined with a way to make housing more affordable, the growth of informal settlements would continue unabated.

Although an immense demand for (and even supply of) housing was beginning by the mid-1990s, shortfalls of serviced land quickly restricted the market's growth. Infrastructure limitations, among other problems,⁴ contributed to skewed land values in most of India's major cities. The formal private sector has been more than capable of developing land for upper-income households through a range of on-site, but highly inefficient and costly solutions, including tube wells, septic systems, and electric generators. The new city of Gurgaon, southwest of Delhi in the State of Haryana, offers an example of this unsustainable approach to land development that constructs buildings without municipal sewerage or water systems.

Based on the findings and conclusions of the 1990 study, USAID decided to proceed with program design to address these issues. USAID decided that the program design process would be stakeholder driven, which is not the norm for preparing international donor-funded projects. A core group of stakeholders was formed, including the Ministry of Urban Development (MoUD); USAID India; the National Institute of Urban Affairs (NIUA); HUDCO; Infrastructure Leasing and Financial Services (IL&FS); HDFC; the Ahmedabad School of Planning; and several recognized urban experts, like H.U. Bislani, Chairman of NHB; S.M. Sukthankar; O.P. Mathur, Director of NIUA; K.P. Singh, CEO of DLF Developers; Kirti Shaw; and others. The core group agreed upon a series of follow-on studies into the issues surrounding private-public partnerships (PPPs), infrastructure finance, service provision for the urban poor, and legal and regulatory issues.

Designing a major program, which was to become FIRE (D), through stakeholder participation always requires an initial investment of time, but, in this case, the investment turned out to be well worth the effort. Over the period 1991 through 1993, the studies were used by the core group to hold four regional conferences around India to solicit feedback from state and local government officials and regional private sector firms. Stakeholder participation produced two major outcomes. First, the USAID Mission was reluctant to move forward with a program focused on land development because the Mission's strategic framework had changed over the 2-year design period. However, all the stakeholders came forward to voice strong support for the project. As a result, USAID shifted the emphasis of the program to infrastructure finance. Second, the participatory process created a long-term constituency for program execution, which contributed to the 16-year duration of the FIRE (D) Program.

³ Billand, Charles, *Delhi Case Study: Formal Serviced Land Development*, 1990, PADCO.

⁴ The other key problems included regulatory bottlenecks, such as high stamp duties; inefficient land registration; and the Urban Land Ceiling and Regulation Act, many of which the Government of India's Jawaharlal Nehru National Urban Renewal Mission (JNNURM) is trying to ameliorate through its mandatory state reform agenda.



Until the private sector became involved in infrastructure finance, infrastructure had been totally funded through public sector grants, first by state governments (cities were considered a state issue), and later by the central government when it became more involved in municipal affairs during the 1960s.⁵ States began submitting proposals to the National Planning Commission for funding approval. The state and centrally directed system lacked responsiveness to rapidly evolving local conditions. Urban migration and new economic development outpaced the corresponding investment in infrastructure. The Rakesh Mohan Committee findings, published in 1996 as *India Infrastructure Report*, quantified this unbalance and furthermore stated that public sector transfers would never adequately provide the infrastructure funding required. The committee estimated that total investment requirement for financing water supply and sanitation from 1996 to 2006 would be US\$46.3 billion, or US\$4.6 billion per year. With annual government fund transfers at only US\$1.04 billion, there was a resource gap of US\$3.5 billion per year. Planned funds covered less than a third of the investment requirements. Furthermore, for operations and maintenance (O&M), the Rakesh Mohan Committee predicted a US\$3.9 billion resource gap for urban infrastructure during 2000-2005. These significant gaps suggested that the prevailing model could not be sustainable, and made clear that the centralized system for urban development and finance had to change for India to pursue its ambitious economic and social development objectives.

The emerging consensus on the need for urban infrastructure reforms paralleled and complemented the broader efforts of India to liberalize its economy and decentralize governance institutions. Both economic liberalization and democratic decentralization became mainstream reform movements worldwide, as new technologies accelerated the rate of globalization and as the Soviet Union, the major alternative political-economic world system, collapsed. And for better or worse, the West, led by "Thatcherism" in the UK and Reagan economics in the United States, began deregulating government oversight of the economy. This all led to changes in global finance and shifts in the fundamental conception of government's role in development. Although India bought into this sweeping movement, collectively called the "Washington Consensus,"⁶ the country decided to pursue reforms in a localized manner, without the rapid macro-transformations of many developing countries. Based on Indian-specific democratic processes, cultural diversity, and the sheer size of the country, Finance Minister Manmohan Singh (before becoming Prime Minister) led the reform agenda at its own pace. Initially, the agenda included many of the economic and decentralization reforms advocated by the World Bank and IMF. It is entirely possible to consider the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) program as a continuum of this longer-term process.

In the early 1990s, the U.S. Government aggressively promoted the Washington Consensus in many places around the world. But in India, at least in the urban sector, USAID took its cue from the domestic policy environment and the momentum already building around land development and infrastructure finance, among other Mission areas. The USAID Mission Director decided to combine a separate financial reform project with the emerging ideas revolving around urban infrastructure.

As a result, the FIRE (D) Program initially looked at the finance sector generally, and added particular focus on increasing the supply of serviced land for development, after which urban infrastructure became the focus.⁷ In 1993, USAID designed a single project⁸ with two components, one looking at the supply of infrastructure investment and the other focusing on demand-side issues. The "supply side" component focused on broad capital market reforms that addressed investment regulations and lending products. The project determined that capital markets did not provide debt beyond a 5-year term loan for either public or corporate borrowers. And although corporate debt has grown much faster since then, in the early 1990s, neither public nor corporate borrowers could access medium- to long-term debt financing. This was particularly problematic for the public sector, because infrastructure development requires much longer terms of 15-30 years to match physical asset lives with repayment schedules (see Chapter 5 on project development and Chapter 6 on infrastructure finance).

The second component of the FIRE project examined "demand side" issues, such as the infrastructure needs for city-wide provision, realistic debt service levels of utilities and cities, and an infrastructure development and project implementation framework. The inspiration for this demand-side avenue into supporting the Indian capital markets stemmed from South Korea's very successful experience in the late 1980s and early 1990s. Encouraging multiple instruments for investing and developing infrastructure, South Korea rapidly expanded a domestic debt market that has provided tremendous benefit to private and publically driven economic development during the past two decades.

⁵ This was largely the result of wretched conditions in Kolkata from East Pakistani refugees living in rapidly growing slums, with very little infrastructure development (see Chapter 3). There was a general understanding that states could not invest enough in infrastructure themselves.

⁶ See <http://www.cid.harvard.edu/cidtrade/issues/washington.html> and http://en.wikipedia.org/wiki/Washington_Consensus.

⁷ There are other important ways of increasing the supply of serviced land for development, including reforming the system of property rights and land use regulations.

⁸ Designed by Naboroon Bhattacharjee and Charles Billand.

In addition to specific Indian research, USAID built on the recent South Korean experience to formulate the demand-side component, now referred to as the debt/infrastructure component—the “D” in the FIRE (D) Program. The program envisaged addressing demand-side challenges more holistically to promote sustainable growth in infrastructure and finance. Consequently, the priorities expanded to include:

- Establishing a system for financing infrastructure
- Orienting infrastructure projects in a commercially viable manner that would attract private investment—with the Indian power sector reform already starting, USAID focused on the other essential urban services of water supply and sanitation (including sewerage and solid waste)
- Encouraging private sector participation in the infrastructure sector, which state-level entities traditionally dominated
- Promoting better urban governance to manage the infrastructure development process

USAID carefully organized the FIRE (D) Program differently than other donors (including other USAID projects). It became a management support services (MSS) contract that received upfront approval from the Indian Department of Economic Affairs (DEA), which oversees all donor work in India. This allowed the team to operate more freely in partnering with cities and states. In contrast, most donors needed DEA approval for every activity, such as selecting a city to work with. This new arrangement with the FIRE (D) Program provided enormous flexibility for the multinational team to quickly respond to the evolving challenges on the ground and across the country. Since then, many other USAID projects have requested this arrangement in India.

In operating the FIRE (D) Program, USAID provided overall management and hired a U.S.-based firm, The Communities Group (TCG) International (formerly Community Consulting), to implement this project component. In addition, USAID issued a grant to NIUA for knowledge dissemination, research, and direct policy promotion. Overall guidance initially came from a joint steering committee made up of MoUD, USAID, NIUA, HUDCO, and IL&FS. The steering committee provided direction for work at the central, state, and local levels. Working at all three levels proved extremely important to first test implementation of new development models and then apply the pilot experiences to shaping key reforms in the sector. As part of the implementation effort, USAID secured another Housing Loan Guarantee of US\$55 million to encourage lending in the new infrastructure sector.

The debt/infrastructure component of the program, which is the focus of this guidebook, began in 1994 with a series of “road shows” to present the new thinking in infrastructure finance for India. During the first presentation in Gujarat, state officials actually laughed the team out of the conference. To those officials, the thought of commercial orientation of water or sanitation sector projects was absurd, even as the idea of privatization in the power sector gained momentum across the country. People sensed something was fundamentally different about water and sanitation. They are somehow more fundamental rights or public goods than other “natural monopolies.” Whether or not this is rooted in water’s sacredness within many religions, or its natural origins in the environment, or just entrenchment of government structures, the public sector delivery model has been very difficult to change, even two decades after the 74th Constitution Amendment Act (CAA). But incidentally, following major assistance from the FIRE (D) Program, the city of Ahmedabad in Gujarat State was the first city in India to access unguaranteed public debt for a water supply project through a bond issuance. The city has issued three more bonds since then. From chief skeptic, the state is now a leader in innovative infrastructure finance in India. This demonstrates that positive change in people’s mindsets over the long term is possible and worth the effort.



ARTICLE 2.2

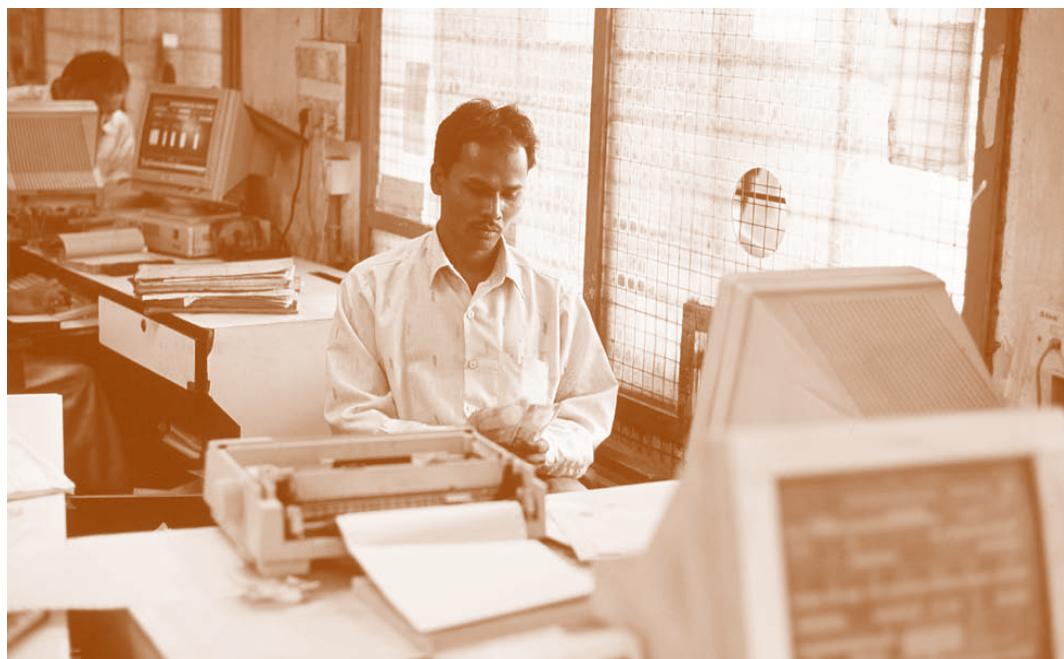
Phases of the FIRE (D) Program

Since its inception in 1994, the FIRE (D) Program has employed a results-oriented, hands-on approach at each of the three tiers of India government. The technical assistance and capacity building effort aims to *improve the delivery of water and sanitation services within a good urban governance framework, with a special emphasis on serving the urban poor*. Over the last 17 years, the FIRE (D) approach to achieving this overarching goal has responded to evolving issues, challenges, and circumstances on the ground at each of the three tiers of government.

Led by TCG International, the FIRE (D) Program has operated in three distinct phases. During its first phase (1994–1999), the program concentrated on attaining objectives of systemic city-wide infrastructure development through design and implementation of model commercially viable infrastructure projects (CVIPs)⁹ and private sector participation (PSP) demonstration projects. During Phase 1, state government intervention in urban reforms was minimal. However, during the later part of this phase, the team realized that without state-level policy reforms, it would be difficult for urban projects to materialize on a large scale. *It also became evident that without urban management reforms, it would be difficult to sustainably finance and operate and maintain large-scale, city-wide urban infrastructure projects, and it would be difficult to attract either market-based financing or PSP in the majority of India's cities.*

Based on the lessons and experience from Phase 1, the FIRE (D) Program's second phase, which began in 1999, attempted to *institutionalize better project development practices and critical urban reforms at a larger scale*, primarily through (1) creation of state-level nodal agencies or intermediaries patterned on Tamil Nadu Urban Development Fund (TNUDF) and Karnataka Urban Infrastructure Development Finance Corporation (KUIDFC); (2) state-level interventions on policy, financing, and regulatory issues; (3) development of a national training network and training materials; (4) national urban governance reform initiatives stemming from MoUD; and (5) the setting up of state City Managers Associations (CMAs). During this phase, the team consciously focused on promoting a sound project development methodology and key urban reforms relating to management and efficiency improvements in water and sanitation services. But this management-oriented focus rapidly burgeoned as additional challenges, such as poor financial record keeping, exclusion of the poor, and weak municipal revenues, became more apparent. Because these issues also negatively affect successful implementation of infrastructure projects, the scope of the second phase inadvertently became very broad.

⁹ CVIPs are those projects that are able to raise and sustain resources from government and/or the capital, private, and financial markets largely on the basis of revenue streams generated through efficient management and from specific revenue-linked user charges and dedicated sources (such as grants, property tax, and octroi).



FIRE (D) PROGRAM



FIRE (D) PROGRAM

Reflecting on the experiences from FIRE (D)'s first two phases, the team, in concert with its national steering committee and partner organizations, believed the time was right to integrate the various policy and project implementation aspects of the FIRE (D) Program. In so doing, the third phase (2004–2008, with extension into 2011) of the program *promoted a more comprehensive approach for creating wide-scale and sustainable urban sector reform and for increasing investment in urban infrastructure, specifically benefitting the poor, who had unforeseeably been neglected from past "city-wide" projects.* During the past 2 years, the team has specifically focused on slum upgrading strategies in Madhya Pradesh and Orissa to demonstrate how infrastructure services, particularly water and sanitation, can be carried out at a city scale among the poorest residents.

Building on more than a decade of experiences from implementing city-wide urban infrastructure and pro-poor pilot work, the FIRE (D) Program has synthesized the lessons into this guidebook. The guidebook presents a more comprehensive approach to developing infrastructure services, starting with a robust good governance framework (described in Chapter 1).

In addition to incorporating the poor more centrally in the infrastructure development process, the third phase of the FIRE (D) Program integrated the other key technical areas covered by this guidebook to create a more interrelated and comprehensive approach. By starting with pilot work and then elevating the experiences to national-level dialogue, the FIRE (D) Program has built strong momentum to improve administrative and fiscal capability of cities, increase investment in urban infrastructure through innovative finance, and create sustainable government and nongovernment networks for promoting accountability. In recognition of its achievements, the Government of India's JNNURM, which was launched in December 2005, incorporated much of the work tested, developed, and disseminated by the FIRE (D) Program. JNNURM provided a strong impetus for deepening, broadening, and institutionalizing much of the urban agenda to all 26 states and union territories.



ARTICLE 2.3

Approaching Urban Reforms

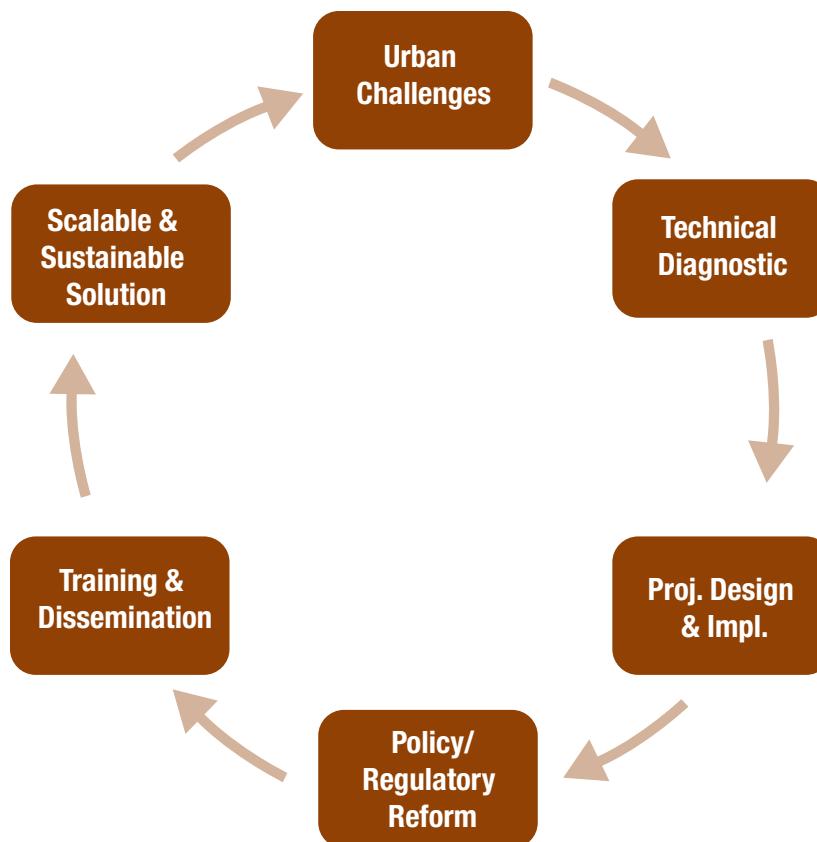
One of the most difficult questions for policy makers and project implementers is how to begin the reform process. The 74th CAA provides a clear mandate on some items, such as establishing local government elections, among other mandatory provisions, but is less clear about other decentralization areas. While the amendment is a vision for functional and fiscal decentralization, it does not offer a framework for carrying it out. And although JNNURM articulates important mandatory and optional reforms, it does not provide guidance on sequencing by priority or timeliness; it does not combine the reforms into a coherent whole.

This guidebook offers a linear route for improving city viability and developing urban infrastructure. It begins with a good governance framework in Chapter 1, because it is an overarching theme that affects successful results in most other areas. The chapter then argues that proper planning and managerial improvements are necessary to developing sustainable and inclusive infrastructure. From this foundation, better project development and financing structures will help permanently transform the sector (see Figure 2-2 on last page of this chapter).

The FIRE (D) Program can offer both a comprehensive and relatively linear approach, but in reality, the work is not that straightforward for the practical reasons of working with diverse actors in rapidly changing landscapes.

Instead, the process is much more iterative and circular. While designing and implementing the various project development, institutional, policy, and legislative activities, the FIRE (D) Program employed an iterative process/project cycle, depicted in Figure 2-1 and described below.

Figure 2-1. FIRE (D) Process/Project Cycle



Note: Arrows from one element of the process to another represent our communication strategies.



FIRE (D) PROGRAM

The FIRE (D) Program's provision of technical assistance and capacity building, while tending to focus on target states and cities during the later part of the project, has always been **demand-driven** by our partners and stakeholders. The team approaches all requests for support with a trusty set of principles and preferred approaches, as described in this guidebook, for good urban governance and innovative methods for project development and financing of urban infrastructure. The program, however, has always been flexible and willing to learn based on the situational needs at a given time. In this way the FIRE (D) Program has pushed the envelope into new substantive areas, where our partners request support.¹⁰

Upon request for support, the team's initial discussions with partners normally revolve around understanding and appreciating the central challenges of a particular urban problem. These could be well-known, generic problems presently affecting most states and cities of the country (e.g., the need to modernize municipal structures, to improve financial management, or to enhance financial viability) or a more specific issue or problem where ready solutions or a clear way forward are not yet apparent. In many cases, the ultimate solutions had very little precedent in India, like setting up a state urban infrastructure fund, designing a municipal e-governance mission, or restructuring a state water utility.

In the last case, where the problem or current situation is not well known or understood, the FIRE (D) Program would normally prepare a **diagnostic concept note** in an attempt to understand the underlying issues. With this analysis in hand, all the key stakeholders can better pin down a precise statement of the work, including a set of next steps or scope of how to proceed. Following this conceptual stage, the team would carry out a detailed assessment to gain a fuller understanding of the current situation and develop a strategy for responding to specific circumstances and needs of a particular state or city. The diagnostic's proposed or preferred way forward, particularly in the case of governance reforms, would then be implemented or **pilot tested** in one city or several cities.

Capacity building has always been a tenet of the FIRE (D) Program and has consistently produced better results. A completed urban infrastructure project is then field tested and officially commissioned, while a successfully piloted governance reform is vetted by all stakeholders and scaled up to the state level and eventually rolled out as a state policy, plan, manual, or initiative in a phased manner.

Following the successful piloting of an innovative infrastructure project, governance reform, or financing tool, the FIRE (D) Program **works with the state or center level to scale up the activity**. The team normally approaches the project's central nodal agency, MoUD, to discuss and ascertain its interest in replicating a specific state reform to a wider audience in the form of a model law, national manual, or guidance note. This is the route the FIRE (D) Program followed successfully in development and dissemination of the Model Municipal Law (MML), the National Municipal Accounting Manual (NMAM), the National Mission Mode for e-Governance in Municipalities, and the Pooled Finance Development Fund (PFDF).

One condition to effectively scale up any new activity is its acceptance to policy makers and practitioners in the sector. The merits of a pilot have to appeal to the wider state and/or national audience for acceptance, and in so doing, information about the work needs to reach all the relevant stakeholders. Under the FIRE (D) Program, state CMAs and regional training centers started taking the lead in dissemination and formal training activities for state and local officials. Similarly, several state urban infrastructure funds,¹¹ currently under various stages of development and operationalization, could eventually serve as capacity building institutions for urban local bodies, particularly with respect to the development of commercially viable urban infrastructure projects and the accessing of domestic capital markets to finance urban infrastructure.

10 The best recent example of this occurred when the combined USAID and FIRE (D) team visited Orissa in early 2005 to work with state officials to identify and define the program's support to Government of Orissa under Phase 3 of the FIRE (D) Program. The state readily agreed to FIRE (D) support on improving financial management and financial sustainability of selected cities in the state, as well as support for specific water and sanitation projects. But the team was pleasantly surprised and pleased when the state requested the project's support in fleshing out and operationalizing the response to its recent decision to devolve responsibility and accountability for the O&M of water supply and sewerage from the state-level water authority to local government in compliance with the 74th CAA and later the JNNURM. FIRE (D)'s flexibility in being able to take on this assignment has been one of its great strengths, and led to the ongoing, very successful initiative to corporatize the state's Public Health Engineering Organization. Specifically, the states of Maharashtra, Rajasthan, West Bengal, and Madhya Pradesh.

11 Currently, under various stages of development and operationalization, could eventually serve as capacity building institutions for urban local bodies, particularly with respect to the development of commercially viable urban infrastructure projects and the accessing of domestic capital markets to finance urban infrastructure.



This cycle approach can be highly useful for cities and states. It is like visiting a doctor. The patient arrives with an ailment, but might not know what caused it or how to treat it. The doctor will examine the problem, ask probing questions and run some tests. Only after analyzing the results will the doctor recommend a treatment. The patient tries the treatment and monitors progress, but might need to modify it over time; treatments often have side effects, both good and bad. Similarly, cities and states can tackle their most pressing issues in an iterative, yet methodological manner. What is most important is the understanding that urban management is multidisciplinary, with service delivery being affected by finance, governance, planning, and information management systems, among other things. While focusing on one intervention, both policy and project implementation need to consider the overall impact on the city to ensure the positive spillovers that are desired.

Applying the Project Cycle Approach: Success in Ahmedabad

This section highlights a couple of examples, one successful and another not so successful, of how the FIRE (D) Program applied the process/project cycle over the program's three phases. Please see Annex 2-1 for an illustration of how other important initiatives progressed from identification and design to dissemination to achieving the ultimate goal of a scalable and sustainable solution.

First, almost since its inception in 1994, the FIRE (D) Program has been working with national, state, and local governments in India to introduce and foment a municipal bond market for the financing of urban infrastructure. The Ahmedabad Municipal Corporation (AMC) served as the initial pilot for this initiative. The FIRE (D) Program's partnership with AMC began with the preparation of an urban *environmental workbook*, which provided an environmental risk assessment and discussed how better infrastructure in the city would also improve the overall environmental conditions. The team also worked with Environmental Planning Collaborative (EPC) to create a redevelopment plan for the walled city, 5.8 square kilometers in the historic core of Ahmedabad, with intense multiuse activities ranging from religion to wholesale and retail commerce to key transportation and infrastructure nodes.

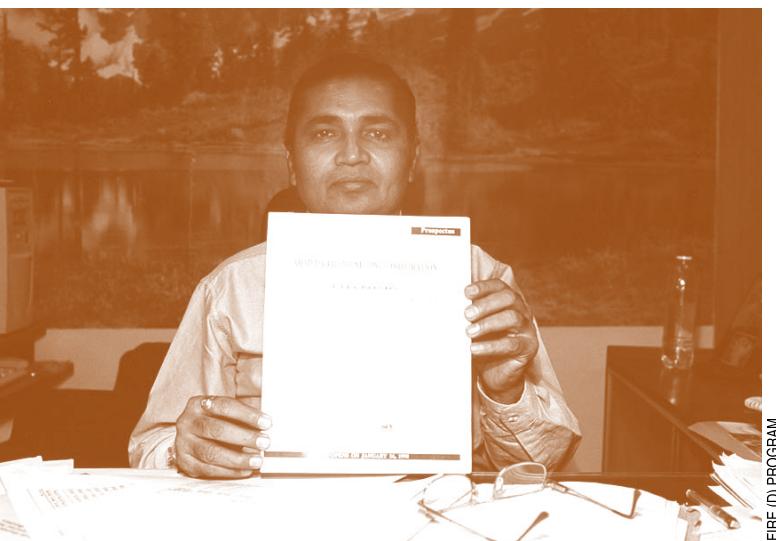
After these exercises, FIRE (D) staff helped AMC carry out financial analyses for implementing the redevelopment plan and consequently prepared a *corporate investment plan* (see Chapter 3 for discussion of both of these planning tools). The investment plan, prepared in conjunction with ILFS, assisted AMC to design infrastructure improvements, including a city water supply and sewerage project totaling Rs.4,390 million (US\$110 million). The financial analyses contemplated various sources of funding for this project, including the possibility to tap the domestic capital markets. To enable such a borrowing, the FIRE (D) Program worked with Credit Rating and Information Services of India Ltd. (CRISIL) to develop a methodology for carrying out *municipal credit ratings*, which was based on a careful study of municipalities in India and international experience, to measure the underlying administrative and financial strength of the municipality and the viability of the proposed project. Ahmedabad was the Indian first city where the new methodology was applied. In February 1996, Ahmedabad received a rating from CRISIL for a proposed *municipal bond offering* (see Chapter 6 for a discussion of these financing tools). This was the first rating received for a municipal bond offering in India.

A municipal credit rating has come to be regarded by India's private financial community as a solid indicator of a city's performance and competitiveness. Since the mid-90s, the three other rating agencies¹² have developed ratings for municipal and municipal enterprise bond offerings with FIRE (D) Program support. Subsequently, the process of municipal credit ratings has gained wide acceptance and more than 40 towns and cities have sought credit ratings from one of the accredited rating agencies in the country. And under JNNURM, MoUD funded institutional credit ratings of 63 municipalities for benchmarking. The Government of India envisages credit ratings to contribute to improved financial management and enhanced financing of urban infrastructure projects.

In January 1998, with FIRE (D) Program support, AMC was the country's first municipality to access the capital market without a state guarantee. It issued Rs.1,000 million (US\$25 million) in bonds to partially finance a Rs.4,390 million (US\$110 million) water supply and sewerage project. As the first municipal bond issued in India without a state government guarantee, it represented the first step toward a fully sustainable, market-based system of local government finance.

¹² ICRA, CARE (Credit Analysis & Research Ltd.), and Fitch.





The multifaceted assistance provided by the FIRE (D) Program since 1994 played a vital role in the development of the city's water supply and sewerage system and bond issuance. And subsequently, the city has issued three more bonds, in 2002, 2004, and 2005. Based on the success of Ahmedabad's municipal bond issuances, the market in India for taxable and then tax-free (launched by the Government of India in 2001 with the support of the FIRE (D) Program) municipal bonds has grown considerably since 1998, and a number of other cities, including Nashik, Nagpur, Ludhiana, Indore, Visakhapatnam, Hyderabad, and Chennai, have accessed the capital market through municipal bonds without state government guarantees. In most cases, bond proceeds have been used to fund water and sewerage schemes, although serious constraints still exist (see Chapter 6). India's local governments have mobilized about Rs.10,945 million (US\$250 million) from the domestic capital market through taxable and tax-free municipal bonds.

Many of the FIRE (D) Program's other multi-year initiatives that have achieved national policy recognition and that have been heralded as scalable and sustainable solutions, such as the NMAM, the MML, National Mission Mode for e-Governance in Municipalities, Municipal Resource Mobilization or Property Tax Reforms, and the PFDF, have loosely followed the above-referenced process/project cycle. The underlying on-the-ground reality always underpins the team's work through careful research at the local and state levels as a precursor to the formulation of new national-level policy or legislative frameworks. The resultant actionable proposals or scalable solutions are normally tested in several local pilots before the final recommendations are codified in a new state-level manual or law. These state-specific manuals and/or laws would be generalized, discussed, and vetted by officials of MoUD prior to being circulated to the states and cities as recommended national guidelines.

Another important area of work has been developing commercially viable structures for infrastructure projects. While the Tiruppur Area Development project, supported by the FIRE (D) Program, is given due recognition as India's first PPP for water supply and sewerage, and is considered a scalable model (see Chapter 5 for discussion of this tool), PPP structuring still needs a lot more attention. India's overall track record with the development of major commercially viable PPP structures in the water and sanitation sectors is not successful. The FIRE (D) Program also encountered difficulties in the cities of Pune and Sangli, State of Maharashtra, which is worth examining.

Sangli's Failed Public-Private Partnership Water Supply Project

Through the excellent leadership of the then-State Secretary of Water and Sanitation, Maharashtra was one of the first states to undertake water sector reforms. As a first step, in 1999, the FIRE (D) Program provided the Government of Maharashtra (GoM) with extensive technical support to set up a committee, chaired by Mr. S.M. Sukthankar, former Chief Secretary of Maharashtra, to prepare a roadmap for improved provision of water supply and wastewater services in the state's urban and rural areas, including use of PSP structures. The FIRE (D) Program had already been working closely with the GoM since 1996, and had established credibility with state officials. Flowing from the work of the Sukthankar Committee, both the GoM and the FIRE (D) Program felt that a PPP project structure in Sangli could serve as a model for medium-sized cities across the country and as a demonstration pilot for further sector reforms in the state. In addition, the City of Sangli needed significant investment in water infrastructure that it could not finance itself.

To position Sangli as a model for improving service delivery, the FIRE (D) Program formulated a comprehensive assistance program for the city, which included accounting reforms, solid waste management, municipal resource mobilization, and a city-wide approach to improve access to services by the city's poor. The FIRE (D) Program supported a series of technical studies as part of preparatory work to ensure a solid underpinning to the water supply project, including a demand study of Sangli's water and wastewater systems, a physical leakage detection assessment of both the water transmission and distribution networks, and network mapping and analysis of the entire



system. At the behest of the city's municipal commissioner, the team undertook these studies partly to demonstrate results prior to inviting the private sector to participate.

The studies showed that under a PPP structure, Sangli could develop a water supply project to accomplish twin objectives:

- Improve the performance of the existing water supply system through rehabilitation and introduction of better management practices in the short term (up to 3 years)
- Improve current coverage in terms of quantity, quality, and reliability (25–30 years)

Sangli Municipal Corporation, with support from its technical partners IL&FS and the FIRE (D) Program, issued a Request for Qualifications (RFQ) in June 2002, which resulted in significant interest from nine national and international water companies, who submitted prequalification documents. Unfortunately, the Sangli commissioner was transferred a week prior to the final submission date for the RFQs. Owing to internal political dynamics in the city, the mayor issued an order suspending the procurement process on the last day for submitting prequalification documents. During the next 6 months, IL&FS and the FIRE (D) Program made numerous presentations explaining the project to state and local elected officials with the intent to at least complete the procurement process. While the state government played a positive role in the entire process, Sangli's General Body finally took the decision in early 2003 to reverse its earlier resolution supporting the project. This brought an end to a 3-year initiative to develop India's first private water sector management contract.

What lessons can be drawn from this failed initiative? While the Sangli commissioner's last-minute transfer was certainly very detrimental to project success, as was the fact that project preparation dragged on for more than 3 years and ultimately got caught up in the politics of municipal elections, the overriding factor contributing to the project's failure was *minimal stakeholder involvement: the Sangli General Body, local stakeholders, and the citizenry at large were not kept sufficiently informed or consulted throughout the project's development*. More direct communication was required to highlight the benefits from the project that would have accrued to the public and how the project was going to address any concerns that existed. Insufficient communication led to ill-informed and ultimately negative local press coverage, which undermined support for the project. Finally, documentation of the internal General Body meetings was weak, making it difficult to reconstruct a clear record of what was said and agreed upon.

Technical Approach for Developing Sustainable and Inclusive Infrastructure

The above discussion shows how the most successful work of the FIRE (D) Program followed a complete project cycle. Diagnosing the urban challenges and structuring the solution appropriately provides the basis for successful pilot projects. Such diagnostic is also the basis for building consensus among stakeholders, although not sufficient in gaining local ownership, as the Sangli case shows. To gain the trust and ownership of local political institutions as well as the various administrative agencies, the FIRE (D) Program began pursuing a more in-depth strategy of participatory planning and technical hand-holding during project identification, design, and implementation. Such a strategy effectively communicates the benefits, addresses the concerns, and provides timely advice to all relevant stakeholders during a project's critical decision-making and approval process. Participatory planning processes are now viewed as essential to most urban projects.

Prior to the FIRE (D) Program, the idea of involving multiple stakeholders in a project was totally foreign in India. For example, in the middle 1990s, the finance industry never talked to planners or urban officials. The seminar on municipal bonds in Bangalore was the first time these diverse professionals were all in the same room. A common language and mode of collaboration needed to develop, and can still be improved upon to this day.

The work of urban professionals needs to address diverse local concerns, and be flexible enough to adapt to changing contexts. For this reason, many actors need to be substantially involved. Practitioners cannot rely just on a project champion, like a municipal commissioner, or feel secure just because a contract has been awarded for a specific deliverable. And even a technically sound project design will not be enough to ensure successful results. Instead, practitioners need to pursue



projects with diverse institutions and communities to build broad consensus. This is the only approach that provides a strong impetus to sustain projects and minimize project development risk.

The FIRE (D) Program has tried to be as responsive as possible to the changing concerns on the ground and to work with local partners to address them. This occurred during the first efforts in helping municipalities access domestic capital markets to finance infrastructure (as in the Ahmedabad case above). A series of underlying issues quickly became pressing: Accurate assessments of infrastructure needs did not exist, current financial reporting provided substandard information to market investors, weak internal controls gave little assurance that private funds would be used effectively or in a timely manner, and the inability to mobilize a municipality's own resources increased project risk. The FIRE (D) Program responded to each of these underlying challenges to create an overall system that has had large-scale benefit. In many ways, a sustainable approach to urban infrastructure development has to respond to the evolving ground realities. Although particularities of all these issues vary in each locale, the challenges of finance, good governance, development planning, pro-poor orientation, and climate change, among others, are global today. Every country faces these global issues, even as they grapple with them within specific local contexts.

The technical approach offered in this guidebook seeks to integrate a diversity of issues by acknowledging the interrelatedness across sectors; the environment, infrastructure, poverty, finance, and governance are not divergent topics requiring either-or decisions. Instead, they are connected and the impact on one area may have serious consequences on the others. The current work on city sanitation plans provides engineering solutions for both environmental hazards (e.g., industrial effluent dumping into open water bodies) and sanitation problems (e.g., inadequate sewerage coverage and open defecation) that are rooted in local conditions and require diverse financing options. Structuring sustainable and inclusive urban infrastructure means holistic thinking across sectors. It begins with a participatory planning process that consults with many stakeholders and offers a wide analytical situational assessment. In this planning process, diverse issues—poverty, gender, and the environment, for example—are incorporated from the onset, rather than after the fact, as is often the case. Overall financial viability should also be examined early in the infrastructure planning process so that appropriate fiscal measures and management reforms can be taken without creating undue risk for a project once it has progressed too far. Only then can detailed project design really accommodate the wide variety of issues and concerns that arise. Finding the most appropriate delivery mechanism for infrastructure projects (whether fully public, fully private, or a combination of the two) is based on all the diverse and underlying parameters. All of these parameters taken together help establish the desired distribution of risks, costs, and management responsibilities among the project's implementing partners, whether public or private.

Comprehensive planning and careful project development facilitate successful financial transactions by addressing the many risk elements that determine commercial viability in the minds of investors. Adept, upfront work helps secure subsequent funding and increases the likelihood of the project's ultimate success. Finally, making the approach replicable and generalized for local governments across the country requires a long-term, institution-building process. Institutionalizing scalable solutions for urban infrastructure services has been a goal for the FIRE (D) Program and its partners from the beginning. The urban reform agenda is an ongoing process, and it is the team's hope that the FIRE (D) Program's experience has positively contributed and that this guidebook can provide insight into the overall process.

The next section of the guidebook includes technical chapters that discuss each of the major components of the FIRE (D) technical approach:

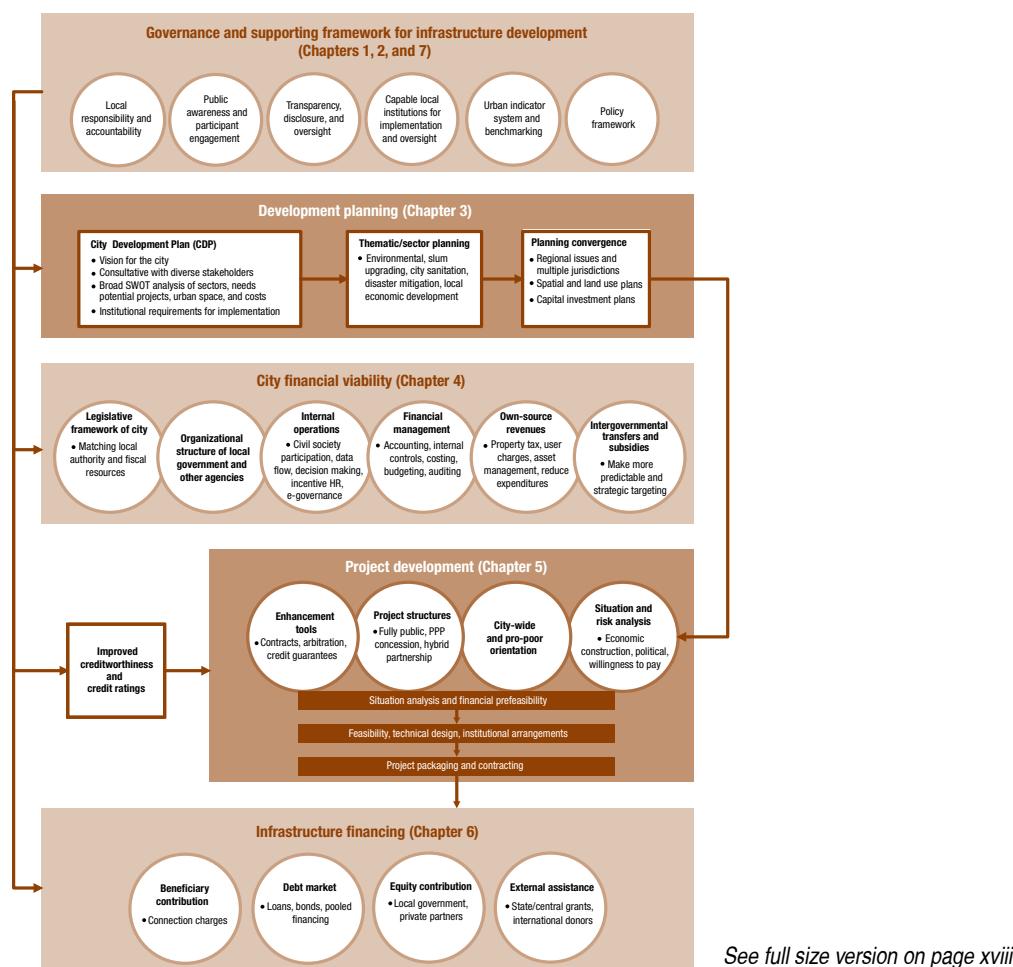
- Chapter 3: Development Planning for Infrastructure Services
- Chapter 4: City Financial Viability
- Chapter 5: Developing Commercially Viable Infrastructure Projects
- Chapter 6: Urban Infrastructure Financing
- Chapter 7: Institutionalizing Improved Urban Management and Infrastructure Development



The initial article in each chapter provides an overview of the technical topic by following the basic process/project cycle approach discussed above. These articles demonstrate how the authors have used what they've learned over 16 years of experience in India to establish an integrated approach across technical disciplines. The other articles in each chapter provide specific Indian experiences, mostly from the FIRE (D) Program, to illustrate how to develop sustainable and inclusive urban infrastructure. It is hoped that the material shows how the many urban development issues fit together and can be addressed in a more comprehensive and project-oriented manner (see Figure 2-2 for an overview of the FIRE (D) technical model).

Figure 2-2. The Process for Developing Sustainable and Inclusive Urban Infrastructure

City-wide investment, increased access to services, efficient management, better governed cities



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Chapter 2 Annexes



Annex 2-I Important FIRE (D) Initiatives

