

**WORLD BANK**

**Report No. 18321**

**INDIA - WATER RESOURCES MANAGEMENT  
SECTOR REVIEW**

**URBAN WATER SUPPLY AND SANITATION REPORT  
VOLUME I - MAIN REPORT**

**JUNE 26, 1998**

**Rural Development Unit  
South Asia Region  
World Bank**

**In Cooperation with:  
Ministry of Urban Affairs and Employment,  
Government of India; and  
UK Department For International Development (DFID)**

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The team wish to acknowledge the contribution of the many Indian professionals, government officials and sector personnel who provided valuable insights and background information on the problems and opportunities available to the UWSS sector - either through discussions or through the large number of papers reviewed. A list of those consulted are shown in Annex 7. In addition to this record of findings and recommendations, the team benefited greatly from personal observation of a number of UWSS organizations at work. Considerable time was spent on field visits, interviews and discussions. These were supplemented by participation in three workshops on UWSS-related issues.

Preliminary report analysis and recommendations were discussed at a National Workshop held in June 1997, which was chaired by the Ministry of Urban Affairs and Employment. The workshop was attended by municipal, state and central government representatives, the World Bank, DFID (UK) and other external agencies. The workshop provided particularly valuable guidance for the report finalization phase (workshop proceedings are at Annex 5). The team undertook extensive discussions with UWSS and other administrators as well as customers, to obtain their assessment and view points of UWSS sector realities. These realities have been integrated into the report, which reflects the collective contributions of UWSS stakeholders. Valuable review comments and assistance were received from Messrs./Mmes.: J. Briscoe, T. Nguyen, S. Sarkar, C. Couzens, M. Whitbread, P. Brook Cowen, H. Garn, A. Locussol, J. Chassard-Manibog, I. Fraile, S. Barghouti (World Bank); A. Wray, I. Curtis, C. Athayde, and T. Barton (DFID-UK). The WRM review has been managed by K. Oblitas and C. Wood. Report finalization was undertaken by C. Wood and K. Oblitas, with the assistance of K. Eisenstadt.

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<sup>1</sup> Professor, Portsmouth University, UK; Consultant -World Bank/Montgomery Watson.

<sup>2</sup> Independent Consultant, The Netherlands.

<sup>3</sup> Wenco Consulting (P) Ltd. Delhi, India.

<sup>4</sup> London Economics, London, UK

<sup>5</sup> Independent /INDO-US: Financial Institutions Reform and Expansion Project, Delhi. India.

<sup>6</sup> K S A Design Planning Services (P) Ltd., Hyderabad, India.

**PREFACE**

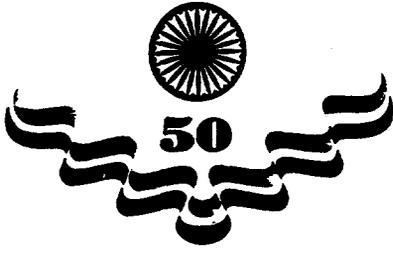
*India Water Resources Management Sector Work  
Urban Water Supply and Sanitation Report*

As India progresses in implementing the ongoing economic liberalization program aimed at increasing growth and reducing poverty, critical bottlenecks will likely arise that will have to be addressed. One bottleneck that could hinder the success of the economic program, could be a slow response of the urban water supply and sanitation (UWSS) sector in meeting the increasing demands from greater urbanization and industrial activity. The UWSS to date has performed somewhat below potential in terms of quantity, quality and reliability of service delivery, particularly when measured against best practice. Both institutional and financial factors constrain the sector within a vicious cycle of inadequate resources for operations and maintenance, inadequate water delivery services, and customer dissatisfaction, which ultimately leads to an unwillingness of customers to pay for the services they receive and thus compromises the financial viability of the UWSS agencies. These constraints are recognized in India, and it is encouraging that the government now acknowledges the need for a strategy and action plan to raise the UWSS sector to a higher level of effectiveness.

This report, prepared collaboratively with the Government of India and the UK Department for International Development (DFID), does an excellent job of articulating a sector strategy and action plan for the UWSS sector. Issues directly relevant to India's national economic objectives are raised. These include public finance reform and a heavy focus on the institutional and financial framework underpinning sector operations, with a view to identifying the appropriate incentive structure required to transform the vicious cycle into a virtuous circle of strong performance and financial viability. The strategy and action plan articulated in the report includes various options, reflecting the diversity of urban centers and agglomerations in India as well as the variety of possibilities for organizing and delivering UWSS services to the various urban units. It is hoped that the report serves to inform central, state and municipal governments and forms the basis for sector policy dialogue and reform in India.



Frannie Humplick  
Infrastructure Sector Manager  
South Asia Region



भारत सरकार  
शहरी कार्य और रोजगार मंत्रालय  
शहरी रोजगार और गरीबी उपशमन विभाग  
Government of India  
Ministry of Urban Affairs and Employment  
Department of Urban Employment and Poverty Alleviation

नई दिल्ली-110011, तारीख 199  
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## PREFACE

Urban India is in the midst of transformation. In an era of economic reform, liberalization and globalization, cities and towns are fast emerging as centres of growth. In fact, estimates reveal that Urban India contributes more than 50 per cent of the country's Gross Domestic Product at present, although it accounts for less than one-third of its population.

It is estimated that by 2025, more than 50 per cent of the country's population will live in cities and towns. These figures are indicative of the likely demand for infrastructural facilities that could arise due to urbanization. This poses a serious challenge to urban planners, policy makers and managers. This report is a valuable document in this context.

The report has elaborately dealt with various important issues, such as institutional reforms, evolving an appropriate financing system, water resources management, private sector participation and has come out with useful suggestions to evolve a suitable strategy for sector sustainability.

This report will serve as an useful guide to policy & decision makers, managers and those involved in implementation, operation & maintenance of water supply and sanitation systems. The Ministry of Urban Affairs & Employment acknowledges the efforts of the World Bank team in bringing out such a report, which may help in focusing attention on issues and reforms required in the sector, to make the services efficient and reliable.

(J.P. Murty)  
Joint Secretary to the Govt. of India

## EXECUTIVE SUMMARY

i. The Government of India's economic policies are aimed at increasing economic growth, improving market efficiency and competitiveness, and integrating the Indian economy with global markets. The changes required to achieve these objectives will have great implications for urban centers where much of the population and industrial growth is expected to occur. The demands on the Urban Water Supply and Sanitation (UWSS) sector, which serves both urban domestic and industrial needs, will be tremendous. To date, the UWSS has under-performed against expectations. Quantities of water delivered are inadequate and service is unreliable, requiring consumers to make alternate arrangements which are more costly in terms of time and money, particularly for women and the poor. Low quality of service is endemic, resulting in deleterious impacts on consumers, especially the poor, as well as on the environment. The UWSS sector needs urgent attention both to meet the new demands and to ensure that all city-dwellers have access to basic services at reasonable costs.

### **Current situation**

ii. India's UWSS sector faces many problems and is currently bound-up by a vicious circle of circumstances. Notably:

- many UWSS providers are not financially viable and are unable to maintain services without extensive subsidies;
- existing UWSS services fall short of full coverage of the population, and are often of low quality due to insufficient funding of O&M. Sanitation services, in particular, are generally inadequate and access to acceptable UWSS services are extremely limited for those in poor communities; and
- environmental degradation—the resource as it is currently used is increasingly insufficient and over-exploited.

iii. These problems are well understood in India. The traditional response to them has been to centralize control at the state level, concentrate scarce skills and provide technical (i.e. engineering) assistance to the cities. There is general agreement in India that this traditional response has not worked well. This is because most UWSS managers lack the necessary management skills, autonomy and accountability for their performance. That is, the UWSS providers tend to lack clear objectives for management, lack transparency and accountability to consumers, and have been subject to a history of extensive political involvement at the detailed operational level.

iv. In recent years, a fundamental policy change has started to emerge for the sector in India, as in other parts of the world (such as South Africa and Brazil), towards delegation of responsibility and accountability to local levels, balanced against a national/state policy framework. This commencement is a positive change in India with its huge diversity of local priorities and situations. The developing consensus in India for financial reform in the UWSS

sector is even more advanced than that for institutional reform. This decade has seen capital markets develop and expand across most sectors of the Indian economy, and financial reform in the UWSS sector is a logical extension of this trend.

v. Several examples of institutional and financial reforms provide insight into what has been possible in some places (both in India and overseas). These reinforce the emerging consensus—that it is the poor incentives in the current systems and arrangements which underlie the paradox that the problems of India's urban water and sewerage sector are well known, but nevertheless persist.

### **The way forward—an incentive-based enabling strategy**

vi. This report's recommended strategy aims at transforming the current vicious circle into a virtuous circle and focuses on improving the incentives faced by UWSS institutions through appropriate democratic governance, ownership and management structures, and through appropriate financing systems. These improved incentives will permit and encourage operational efficiency and effectiveness which, along with appropriately tariff levels set to reflect full costs, will ensure sound financial viability of the UWSS agencies, enable participation of the private sector, and attract funding for capital investment in the sector.

vii. The key elements of the proposed incentive-based approach are:

- *democratic decentralization* - to give municipalities incentives to make choices in the best interests of citizens;
- *commercialization of UWSS providers*, and private sector participation - commercialized managers have incentives to operate systems efficiently; and
- *market-oriented financial systems* - these will promote financial viability and efficiency in utilization of resources mobilized on market terms.

### **Institutional reform**

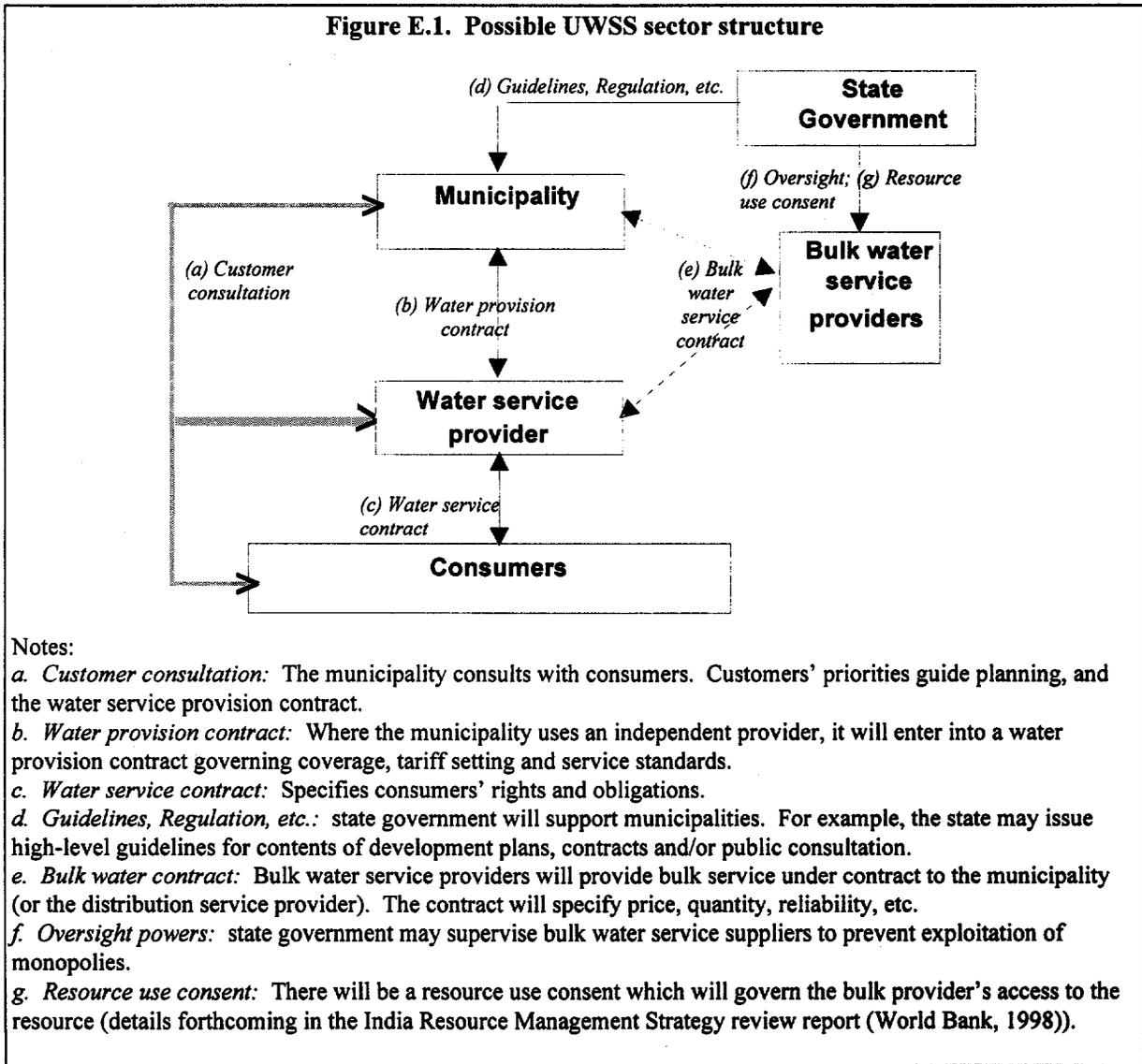
viii. A key element of the proposed institutional reform focuses on municipalization through implementation of the 74<sup>th</sup> Constitutional Amendment. Provision of water and sanitation services should become the responsibility of municipal governments. They may, however, discharge this responsibility through a variety of arrangements including through a municipal department, or a municipal enterprise, a contract with the reformed state utility, or a contract with a private provider. In some cases several municipal authorities may wish to pool their operations by entering into joint contracts for UWSS services.

ix. Devolution of responsibilities to municipal authorities will also need to be accompanied by mandating key good municipal and utility practices. Examples of good practices include preparation of integrated long-term development plans, inter-municipal cooperation and customer consultation and responsiveness.

x. The existing state-owned providers need to be radically reformed. The specific elements of reform will vary from state to state, but will include: unbundling by functions such as bulk

supply, operations and technical services; removing monopolies to encourage competition; and corporatization of disaggregated entities leading in some cases to privatization. The new water utilities must have full autonomy (organizational, managerial, financial) irrespective of their ownership (whether government or private) so that they can operate effectively like commercial entities.

xi. These reforms should be supported by (i) enhancing private sector participation, (ii) developing appropriate comparative competition facilities, and (iii) development of civil society-based associations to improve customer responses and feedback mechanisms. Private sector participation will especially help to enhance efficiency and improve service delivery. The envisioned sector structure is sketched out in Figure E.1.



## **Financial reform**

xii. Tariff rationalization is an essential pre-requisite to financial viability of UWSS agencies, and to increasing financial flows to the sector. The UWSS agencies must have the autonomy and authority to set tariffs to ensure full cost recovery, with flexibility to provide special consideration to the poor. Any subsidies provided to the poor (whether through cross-subsidization or direct government transfer to the utilities) should be explicit, transparent and well-targeted. Tariff increases should be undertaken periodically, and be indexed to inflation. At the same time, improvements in operating efficiency are essential for effectiveness of the utilities, and are the express objective of the institutional reforms outlined above. UWSS providers should not simply be allowed to pass on their inefficiencies to consumers in the form of higher tariffs.

xiii. If the sector is to access new finance, project preparation and appraisal skills also need to improve. The institutional reforms to boost municipal capacity, commercialize UWSS providers, and involve the private sector, will assist in this regard. Further efforts are likely to be needed from state governments, and financial intermediaries involved in the sector. Social concerns, related to access for the poor, should be addressed through specific measures tailored to meet their needs. This could include a life-line block (or slab) rate, or community-based credit systems to spread payments (for private connections and other capital investments) over time.

xiv. Financial reforms should also include a development of community credit systems, and enable direct borrowing from the capital market for the more advanced entities. Debt-market scrutiny will provide the necessary lever to greater efficiency and transparency of credit programs and borrowing. New forms of financial intermediation should be made available to assist the move towards greater commercialization of UWSS sector borrowing through existing as well as new specialized financial intermediaries. New commercial credit enhancement and insurance facilities should be developed to enable the UWSS entities to create credit histories. The use of limited public resources should be reoriented to achieve better leverage of those resources.

xv. The proposed institutional and financial reforms are mutually supporting. An initial implication of financial reform, for example, will be that access to more commercial financial facilities will provide incentives for UWSS entities to improve their performances so as to receive better credit ratings (which, in turn, will reinforce the institutional reform by creating a demand for performance information - both ex post and ex ante). Furthermore, financial reform will create greater incentives to focus on financially viable investments.

## **Implementation**

xvi. Given the huge range of local requirements and opportunities in India, a "one size fits all" approach to implementing the recommended framework is not appropriate. A three-pronged approach is proposed for the implementation strategy: (i) systemic changes - the changes which are essential to operationalize the incentive-based approach; (ii) innovations through windows of opportunity - these are locally-led, incremental, opportunistic innovations which will occur

where conditions are suitable; and (iii) demand-led capacity building - technical assistance and training to be orientated to local demand. This is intended to promote nation-wide reform while allowing not only flexibility to respond to local needs, but also offering the possibility of a faster track for more progressive states and municipalities.

xvii. *Systemic changes.* The set of systemic changes which are essential to operationalize the incentive-based approach includes five actions. First, devolution of responsibilities to municipal authorities, with key good practices such as accounting separation, long term plans and consumer consultation being mandated by law. Second, reform of the state utility boards by separating the policy and regulatory functions from operations, disaggregation of operations into functional areas and commercialization of disaggregated entities. Third, rationalization of tariff structures and tariff-setting procedures through legislative changes and a system of incentives and sanctions. Fourth, reform of the financing systems to: create a greater market orientation by enabling direct market access for local authorities and enterprises within a regulatory framework; and create new forms of financial intermediation, supported by a reorientation of public resources to provide greater leverage. Fifth, introduction of a comparative competition facility to enable assessment of utility performance. This will be useful both as a management tool and as an accountability mechanism.

xviii. *Innovations through windows of opportunity.* The second aspect of the implementation is the encouragement of locally-led incremental and opportunistic innovations which will occur within the new framework. Progress will, of course, vary between states and municipalities depending on enthusiasm, capacity and need. The types of innovations likely to occur include the following. There will be operational changes due to greater commercialization of the UWSS entities, which will initially result in a drive to achieve financial viability. This will mean greater interest in investing in those projects which will most quickly improve financial viability through improved operational and technical practices, such as reduction of unaccounted for water, and improved collection performance for water charges. There will also be new ways of providing access for disadvantaged groups. Finally, there will be increasing use of private sector participation. Initially these are most likely to be primarily intended to capture private sector know-how and will be through incentive-based management contracts as well as BOT contracts and concessions in selected, high potential areas.

xix. *Demand-led capacity building.* Thirdly, the reform process unfolds, technical assistance and training will be required to develop local capacity to manage, and contract for, their WSS services. This assistance will respond to explicit local demand which, in turn, will be developed by the opportunities the systemic changes will bring and learning about best practices employed elsewhere.

### **Towards an action plan**

xx. Table E.1 outlines the proposed action plan for institutional and financial reform. Given the wide diversity of conditions and readiness across different states in India and even between different cities and regions within a state, it is difficult and inappropriate to generalize the detailed implementation sequencing plan. It is expected that each state will consider its options,

develop a state-wide consensus and then prepare its own action plan. This must be done through a consultative process involving all the important stakeholders.

xxi. The strategy requires a reorientation in the role of government from being providers and financiers of services, to being facilitators and enablers. Specifically, the new roles envisaged for the central, state, and municipal governments are as follows.

xxii. *Central government.* The central government's role would be indirect but important. It would facilitate and encourage of state governments to undertake the reforms and evolve appropriate state strategies. Specific aspects of central government's role are: to disseminate examples and expose municipal sector specialists to best practices from India and other countries; to develop and provide standard formats and model legislation; to leverage limited government resources through appropriate mechanisms; and to promote comparative competition.

xxiii. *State government.* The state government's role will be very important in the recommended strategy, one of facilitator and enabler. Systemic changes will be implemented largely through a state UWSS strategy which will involve: legislative amendments for good municipal practices and tariff rationalization; institutional restructuring for state water authorities and financial intermediaries; multi-municipal schemes especially for the smaller municipal authorities which may lack capacity, in parallel with the water resource allocation and management plans in different regions; a plan for the use of public resources to maximize leverage; a plan for a comparative competition facility; and an advocacy and demand-led technical assistance and training plan. In addition, the state governments' will also need to explore and promote innovation in relevant areas as windows of opportunity emerge.

xxiv. *Municipal governments.* The enhanced role of municipal governments would necessitate significant institutional changes at the local level. Specifically, their role will be focused on implementing a number of good municipal practices. These would include professionalization of management, consumer consultation, tariff reforms and long term planning. Over time, they will need to contract out some services or separate specific operations to a commercialized entity.

xxv. *Non-governmental actors and stakeholders.* The nature of the enabling strategy outlined above also suggests an important role for other actors, especially the private sector, various professional associations, civil society associations, NGOs, market oriented development financial institutions (DFIs) and other private FIs, and a market oriented regulatory authority.

xxvi. The key to implementation of the proposed strategy through these identified interventions is action to produce visible results for the customers. The result and improvements in service provisions will help to cut through the "vicious circle" of problems with resultant deterioration of sector assets and be a stepping stone to the creation of the "virtuous circle"- thus helping to establish a sustainable UWSS sector for the future.

**Table E.1. Summary Matrix of Recommendations**

<p><b>Core UWSS Reforms</b></p> <p><b>Objective:</b> The strategy is to change incentive structures so that organizations and people in the sector will deliver sustained, efficient service improvements to customers. To do this we propose that new rules for the game be set; the new framework allow and encourage local level innovations; and fostering a demand-led response for assistance, which will emerge once players have the motivation to improve performance.</p>
<ul style="list-style-type: none"> <li>• <b>Devolve UWSS responsibilities to municipal authorities.</b> Mandate key good practices such as accounting separation, long term plans and consumer consultation</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Reform the state UWSS providers:</b> separate policy and regulatory functions from operations; disaggregate operations into functional areas; and commercialize/privatize entities</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Rationalize tariff structures and tariff-setting procedures</b> through legislative changes and a system of incentives and sanctions</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Reform financing systems</b> to enable direct financial market access for local authorities and enterprises, and new forms of financial intermediation; supported by leveraging local resources.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Create a comparative competition facility</b> to collect and share performance data of Indian and foreign UWSS agencies/utilities to enable assessment of UWSS agency performance and provide benchmarks for improvement.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Implement local innovations</b>, including: involve the private sector in a variety of ways; develop new approaches to serving and involving disadvantaged groups; reform tariffs; increase efficiency, improve technical and operational practices; and access new sources of finance</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Demand led capacity building.</b> Provide technical assistance, in response to municipal and utility requests</li> </ul>

**Table E.1 (cont.). Summary Matrix of Recommendations**

<b>Implementation Plan</b>	
<b>A</b>	<p><b>Municipal Reform Agenda</b> <i>Objective:</i> Create legal and institutional structures which will encourage good practices at the municipal level. Allow for incremental opportunistic improvements within a framework which aligns organizational and individual incentives with the public interest</p>
<b>A.1</b>	<b>Implement enabling Policies:</b> State water sector reform; model laws and procedures for devolution; and devolve responsibility and financial capability to municipalities..
<b>A.2</b>	<b>Implement democratic decentralization and municipal professionalization:</b> institute integrated municipal development planning; strengthen performance and monitoring functions,
<b>A.3</b>	<b>Commercialize UWSS agencies and enable private sector participation:</b>
<b>A.4</b>	<b>Institute customer responsiveness in UWSS agencies and strengthen the role of civil society</b>
<b>B</b>	<p><b>Appropriate State Level Institutions and Regulation</b> <i>Objective:</i> Create legal and institutional structures which will encourage good practices at the state level.</p>
<b>B.1</b>	<b>Restructure and decentralize state-level UWSS agencies</b>
<b>B.2</b>	<b>Enable multi-municipal schemes through appropriate institutional structures and procedures</b>
<b>B.3</b>	<b>Achieve better service for disadvantaged groups</b>
<b>B.4</b>	<b>Introduce regulation and a comparative competition facility</b>
<b>C</b>	<p><b>Financial Reforms</b> <i>Objective:</i> Promote financial viability through tariff reforms and efficiency gains. Promote market-oriented financing systems to enhance incentives for efficiency and financial viability as well as increase the capital available to finance viable entities in the sector.</p>
<b>C.1</b>	<b>Implement tariff reforms</b>
<b>C.2</b>	<b>Develop direct market access for finance</b>
<b>C.3</b>	<b>Develop sustainable credit enhancement and insurance opportunities</b>

# 1. SECTOR ISSUES AND ASSESSMENT

## A. BACKGROUND AND CONTEXT

1.1 The new economic policies of the Government of India are aimed at stepping up economic growth, improving market efficiency and competitiveness, integrating the Indian economy with the global markets and sustaining the drive to alleviate poverty. The changes required will have significant implications for many sections of the economy, especially in the cities, where most of the investment is likely to be made. The increase in human activity that is likely as a result of economic policies, particularly in the industrial sector, will increase the already heavy burden on water and wastewater infrastructure. The lack of adequate availability of infrastructure for supporting high-level utilization and sustained growth has been identified by the government as one of four principal inter-related constraints to accelerated growth of the Indian economy.<sup>7</sup>

1.2 The absolute size of India's urban population is considerable. In 1996 the estimated national population was about 940 million, of which 26 percent (244 million) live in the cities. To put these figures into context, this is roughly equivalent to the combined total population of Indonesia (193 million) and Thailand (59 million). There are three mega-cities—Mumbai, Delhi and Calcutta—all with populations of at least 10 million in 1996. The urban population growth rate, is significantly higher (3.1 percent) than the overall population growth rate (2 percent) and is projected to grow by a factor of three, to some 658 million by the year 2025.<sup>8</sup> Urbanization and urban growth is likely to continue in the mega-cities, but growth is also likely to be relatively high in the smaller cities and towns, notwithstanding their current lower share of total urban population (Table 1.1). This is an important consideration for the development of urban strategies in general and the urban water supply and sanitation (UWSS) sector in particular because, from a technical, administrative and financial standpoint, these cities and towns are much weaker than the larger ones.

1.3 Generally, the Indian political and administrative establishment has had an ambivalent, if not hostile, attitude towards urban areas in general and the mega-cities in particular. This has led to a situation where the political, administrative and financial affairs of most Indian cities are completely inappropriate for the new economic role that they are to assume - with resultant negative impact upon UWSS services.

1.4 In 1992, the Indian Constitution was amended with the intention of redressing the issue - this was the 74<sup>th</sup> Constitutional Amendment (CA).<sup>9</sup> This provides locally elected municipal

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<sup>7</sup> Approach Paper to the Ninth Five Year Plan, Ch. 2, Para. 2.1.

<sup>8</sup> This growth in urban population, of over 400 million people, by itself, is approximately one and a half times the current population of the USA (261 million) and about half the current population of Europe (800 million).

<sup>9</sup> Inter alia, the 74<sup>th</sup> Constitutional Amendment provides that: i) where local government is superseded, it shall be reconstituted by local elections within a period of six months; ii) the states shall constitute "finance commissions;" and iii) the states shall constitute

government with the financial and administrative means to govern effectively; while this has raised a number of delicate issues, at the heart of Indian federalism, the very fact that the CA has been ratified by the state governments indicates that there is widespread understanding of the roots of current urban malaise in India. There is also a growing consensus that political, administrative and financial reforms must be undertaken to enable progress to be made. In this sense the CA is an important and historic break with the past, and opens the way for radical reforms that will improve service delivery in both the urban and UWSS sectors.

**Table 1.1. Proportion of population by class of urban area \***

<i>Class of City</i>	<i>Population Size (No. of inhabitants)</i>	<i>No. of UA/Towns**</i>	<i>Contribution to India's urban population (% in 1991)</i>
I	(> 1,000,000 inh.)	300	65.2
II	(100,000 - 1,000,000 inh.)	345	11.0
III	(50,000 - 100,000 inh.)	947	13.2
IV	(20,000 - 50,000 inh.)	1,167	7.8
V/VI	(5,000 - 20,000 inh.)	937	2.9
<b>Total</b>		<b>3,696</b>	<b>100.00</b>

Notes: \*These figures are from the 1991 census for all states excluding Assam.

\*\*The exact classification of population centers is subject to different interpretations of "urban" used in different parts of India.

Sources: Government of India. *Eighth Five year Plan (1992-1997)*, Volume II - Chapter 13, p. 347. Planning Commission, New Delhi. Selvam, P. and Cuenco, E. K. (1996). *India: Urban Infrastructure Services Review, the Environment Perspectives (draft)*.

1.5 It will, however, take time to fully implement the CA. Elections have been held in all states, except Bihar.<sup>10</sup> State Finance Commissions have also been set up in all the states, ten of which have submitted their recommendations to the State Legislature. In the process they have faced the (common) problems related to poor data on state and local finances as a result of the fluid relationship between state and urban local bodies. District Planning Committees have been established in West Bengal, Kerala and Madhya Pradesh.<sup>11</sup>

1.6 The CA laid the foundation for democratic decentralization by giving municipalities throughout India original constitutional status and powers. The CA did not in itself define the functional responsibilities of municipalities. This was left for the states. Among the matters which states may devolve to municipalities are: water supply for domestic, industrial and commercial purposes; and public health, sanitation and solid waste management. The CA also requires district and metropolitan level planning. Municipalities' actual powers and duties in the

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metropolitan and district-level "planning committees" for the purpose of preparing and monitoring the implementation of metropolitan and district-level development plans.

<sup>10</sup> There are a few municipalities, in selected States, where elections are still to be held.

<sup>11</sup> A review of progress to date suggests, excepting Bihar, no state government has legalized all functions listed in the 12<sup>th</sup> Schedule as legitimate municipal functions. More importantly, a review of the conformity legislation of some states (Maharashtra, Gujarat, Rajasthan, Haryana, Punjab, Karnataka and Bihar) shows that even where additional functional responsibilities have been entrusted to local bodies, no provision has been made with regard to how the finances will be mobilized to discharge these new responsibilities. (See: Accountability and Decentralization in Urban Governance. Report from the National Workshop. October, 1994. New Delhi, New Foundation for India.)

area of water supply and sanitation depend upon laws passed at state level. To date in most states the responsibility for UWSS is vested in the local authorities. However, implementation of these laws will require considerable reforms. Despite examples of achievement, the inadequacies in the urban and UWSS sectors have been major impediments to change. Those relating to UWSS are discussed below.

1.7 There is a growing awareness and acceptance in the government of the need for substantial changes in the sector. A number of policy papers, and the work of the State Finance Commissions, captures this emerging consensus, best illustrated by the following extracts from the recently approved "Approach Paper to the Ninth Five Year Plan" (Feb. 97):

- *"One of the most important influences that has emerged during the Eighth Plan is the inadequate development of physical infrastructure. This is partly due to the reliance that was placed on private sector investment that did not materialize in adequate measure. In the Ninth Plan too, public investment in infrastructure will need to be supplemented by private participation. It is necessary that impediments and bureaucratic delays are speedily removed. In particular the legal, procedural and regulatory framework has to be suitably revised in order to create a conducive environment for making such investment both possible and viable.*
- *"Efforts will be made to provide access to safe drinking water facilities to the entire population in urban and rural areas during the next five years.*
- *"Consistent with the goal of health for all, efforts will be made to provide a reasonable level of sanitation to the entire urban population [during the Plan period].*
- *"The responsibility for planning, operation and maintenance of the urban facilities will be passed on, wherever not done, to the local bodies, in line with the 74th Amendment.*
- *"Efforts will be made to develop alternative means of funding and management of urban water supplies and sanitation facilities to reduce the dependence of this sector on budgetary assistance and render these services more efficient.*
- *"Efforts will be made to enhance the financial viability of the sector through policies based on full cost recovery to permit resource mobilization for the sector through institutional finance, market borrowings, private investment etc. Subsidies, if required, for the poorer sections of the urban society should be selective, well targeted and transparent to ensure that there may be no excessive cross-subsidization from the other sections.*
- *"In providing services in the urban areas, emphasis will be on cost-effective and eco-friendly technologies that make full use of local skills and materials. The successful experiments and best practices adapted elsewhere in the country will be emulated on a wider scale to suit the social, political and cultural environment and climatic conditions. Environmental, technological and institutional sustainability will be the highest consideration.*

1.8 Despite the emerging consensus, the urban water supply and sanitation (UWSS) sector continues to under-perform against expectations. Low quality of service delivery is endemic with resultant negative impact upon consumers, especially the poor, as well as the environment. The lack of operating efficiency poses serious impediments to the achievement of the declared macro economic and poverty alleviation goals. If the basic infrastructure is not in place, new industries will not so easily be attracted, and industrial growth will be constrained. It is equally important to expand and improve the access and availability of water and sanitation services to the poor and disadvantaged members of the society. Industrial expansion, the growing awareness of the urban customers and the needs of the poor and disadvantaged, are the likely drivers of demand for UWSS services in the future. To catch up on the backlog resulting from inadequate past performance, and to meet the rapidly growing additional demand, substantial capital investment will be required in addition to increased expenditure on operations, maintenance and rehabilitation of the existing infrastructure.

1.9 The principal issues facing urban and UWSS management in India revolve around professionalization, autonomy and accountability. Failure to address and implement reforms now will greatly inhibit the prospects of India meeting its declared macro economic and poverty alleviation goals. There will be no panacea, and there can be no standard solution. There is a need for a new framework which encourages and rewards innovative solutions to local problems (the shape and form of which, will vary throughout the country) - so as to respond to the specific and focused needs of the local users. The stakes are high. The distribution of political power between the center, states and the municipalities and also between the politicians and bureaucrats is being tested. However, this situation must be brought to a satisfactory conclusion for the common good.

## **B. CURRENT SITUATION AND SECTOR PERFORMANCE<sup>12</sup>**

1.10 The sector's problems can be summarized by: poor institutional structures, weak organizations and poor governance. An assessment of UWSS in India, however, is made difficult by the very weak information base. Attempts have been made to review as much as possible of the available materials.

### **Service coverage and quality**

1.11 According to official statistics, service coverage of water supply, in particular, is quite high. The Approach Paper to the Ninth Plan estimates that 85 percent of India's urban population has access to water supplies and 48 percent to sanitation services. Though details on the quality of services delivered is scanty, and the limited information contains anomalies (see Box 1.1), there are indicators that water quality is often poor,<sup>13</sup> with consequent health impacts. In most urban areas, water supply is intermittent. While many schemes are designed for a 24

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<sup>12</sup> This section summarizes the current situation. In addition to the material contained in this section, a selection of supplementary Indian UWSS statistics are provided in Annex 6.

<sup>13</sup> Selvam (1989) found bacteriological quality standards were not met in 16 of 47 cities studied.

hour supply using 150/200 liters per capita per day, consumers experience regular shortages, with only a few hours supply on average per day. Many higher income groups have responded to the situation by partially self-supplying. Many have installed ground level sumps, roof level tanks and boreholes to ensure their water supply during the intermittent flows. Disinfection is achieved by boiling. Bottled water, at very high unit costs, is also used.

**Box 1.1. The impact of rationing on the urban poor**

“Usually most national reports describe the total population of a whole town as ‘covered’ if there is some kind of water supply system functioning in the city. Per capita figures of supply are calculated even more simplistically by dividing the total installed capacity by the population. We need to go very far to search for the truth. In Delhi itself the per capita water supply, as officially reported, is about 200 liters per day. This comfortable average, however, doesn’t mean much to about 30 percent of the city’s nine million people who have access, if at all, to about 25 liters or less”.

“The sanitation cover of the urban population in the country is extremely unsatisfactory. Only about 42-43 percent of the total urban population is reported to have access to basic sanitation. In the low income slum and squatter settlements, the percentage is even less, with only 15 percent of the households having toilets and another 21 percent having access to community toilets. What is important is that 61 percent of the poor households use ‘open spaces’ for personal sanitation. Apart from being a major source of environmental deterioration and high negative externalities, it is the root of many human and social problems.”

**Sources:** Sivaramakrishna, K. C., B. Dasgupta and M. N. Buch, *Urbanization in India, Basic Services and People's Participation*, Institute of Social Sciences and Concept Publishing Co., New Delhi, 1993, p. 8; and Mathur, O. P., *The State of India's Urban Poverty*, National Institute of Public Finance Policy, New Delhi, July 1993, p. 68.

1.12 Low pressures and intermittent supplies allow back-syphonage resulting in contamination of the water in the distribution network. This problem is most evident at cross-over points between water distribution mains and street drains, which are in practice open sewers, and/or where the sewers are at a higher level in the ground. The outbreak of Cholera in 1993, in the slum settlement of Korukkupt, Chennai was caused by this type of problem. The poor quality of materials and equally poor methods of construction used, combined with poor operations and maintenance, has led over the years to the underground assets generally being in very poor condition. This has a direct impact upon system efficiency and the quality of service delivery.<sup>14</sup> The zoning of distribution systems is not generally practiced, with the result that there is no reliable information on physical water losses in the reticulation systems. Where production and flow meters exist they are generally not re-calibrated.

1.13 The metering of domestic customers in any city is rarely taken seriously. Meters that are installed generally do not work for very long (due to high particulate matter in the mains, which block the clock mechanisms, or due to damage caused by surges, when pressure returns to the intermittent water supply, or due to vandalism). Even where they do work, the very low tariff charges are either not collected or are not worth collecting. Disconnecting domestic consumers for failure to pay is extremely unusual, although this sanction is occasionally used with commercial customers. The low priority accorded to collections has a significant impact on the revenue base of water entities. Whilst there is abundant evidence that most domestic consumers,

<sup>14</sup> Estimates of average physical water losses in systems range from 25 percent to over 50 percent. Non-physical UFW (or ‘administration losses’) are also likely to be high. International experience shows that “administrative losses” can be two to three times the “physical losses”.

at virtually all levels in society, are willing and able to pay much higher than official prices for water, only the presence of large commercial and industrial users (who are metered and pay a high tariff rate) keep many of the water utilities in funds.

### **The poor and disadvantaged groups**

1.14 The poor<sup>15</sup> and disadvantaged groups lack access to basic urban services generally, but the poor are particularly badly served by public WSS systems. While domestic water and sanitation services are frequently subsidized, most of the subsidy benefits go to the urban non-poor<sup>16</sup>. Furthermore, the poor have very little leverage to get things changed and so are forced to endure the current system and make the best of the situation, with resultant implications for their health and well-being. Ironically, the much-quoted subsidies are ineffective and tend to perpetuate the inequitable treatment of the poor and disadvantaged members of society. The very limited services available to this section of society means that they frequently have to find other means of getting water and have high associated monetary and time costs. This results in higher costs per liter of water for the poor as compared to the middle income and wealthy - even more so when related to their disposable income.

1.15 It is estimated that between 40 and 60 percent of the urban poor live in slums or squatter settlements,<sup>17</sup> the balance live on pavements, overcrowded tenements or commute daily from peri-urban areas.<sup>18</sup> Under these circumstances, it is difficult to establish programs targeted for the urban poor, without having a large amount of 'leakage' to the non-poor. It also underlines the need for a strong linkage between the development of UWSS and urban planning.

### **Excreta disposal and sewerage**

1.16 Only 70% of India's urban population has adequate excreta disposal facilities (WHO, 1996). For many of those not served, on-site disposal systems are most affordable and appropriate. It has long been government policy not to build sewerage systems in towns of less than ten million people. More could be done to meet the needs of such groups, particularly the poorest. Marginal groups are particularly affected by inadequate excreta disposal, not only because they are least well served, but also because sweepers, an important marginal group, face the task of cleaning service latrines, which also exposes them to a high risk of infection with excreta-related pathogens.

1.17 There is widespread ignorance among officials in the sector of the existing levels of access to excreta disposal facilities. For example, in Lucknow, where the very existence of

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<sup>15</sup> Estimates of urban poverty levels in India show that as much as 30 percent of the total urban population lies below the poverty line. One problem with these measures is that they are based on expenditures for consumption, which exclude income in kind and subsidies - both of which can be large components of an individual's income. Railway workers, for example, receive about half their income in kind, in the form of housing, electricity, health care, education and food.

<sup>16</sup> See 'In the Name of the Urban Poor - Access to Basic Amenities.' Amitabh Kundu, Sage Publications, New Delhi, 1993.

<sup>17</sup> Surveys of slum households indicate that mean earnings were between 9 and 16 percent above the poverty line. Between 40 and 50 percent of households in slum and squatter settlements are below the poverty line and about 11 percent have incomes just above the poverty line (World Bank, 1997).

<sup>18</sup> India - Urban Infrastructure Services Review, May 1997. World Bank. p. 5.

service latrines was denied by sanitation and health staff alike, a later survey found that they were used by a quarter of the population. There are also many households which could be better served by existing sewerage systems which are currently blocked or otherwise failing to function adequately. This includes both households which are connected to such systems and those which currently see little advantage in being so.

1.18 It has become the norm in programs for the promotion of low-cost sanitation that latrines are heavily subsidized. On the one hand, this has tied the productivity of such programs to the subsidy budget available; on the other, it has constrained the demand for low-cost sanitation solutions which are paid for at full cost. Households are reluctant to invest the full cost of a latrine if they stand a chance of benefiting from a 90% subsidy.

1.19 Due to inadequate sewerage and lack of wastewater treatment facilities, river water and other sources for drinking water supply are excessively polluted, putting further demands on water treatment processes and contributing to the increase of water-borne diseases (refer also paragraphs 1.22 and 1.23). The treatment of sewerage, while limited to the large cities, is fortunately improving. Within the scope of river action plans, such as the Ganga and Yamuna Action Plans it is proposed that small towns will be provided with sewerage treatment. Innovative technologies,<sup>19</sup> such as aquaculture, pisciculture and afforestation, are being utilized in various parts of the country.<sup>20</sup> These projects also aim to standardize land utilization, loading rates and maximize resource recovery.

### **Storm water drainage and solid waste management**

1.20 Urban storm water drainage and solid waste handling form part of an integrated water resource management approach. Much of the uncollected solid waste in cities, ranging from approximately 8 percent in Calcutta to 75 percent in Patna, ends up in the drains and sewerage system. This causes severe blockages which require frequent clearing to prevent flooding at the time of monsoon rains.<sup>21</sup>

1.21 A further problem which results from the combined shortcomings of solid waste disposal and surface water drainage is the proliferation of nuisance mosquitoes,<sup>22</sup> which breed in blocked drains, cess pits and other bodies of waste water. In order to prevent the nuisance of nocturnal

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<sup>19</sup> In Haryana, ten modern process treatment plants (OECF-financing) are under design/construction with a total capacity of 295 Mld. In Delhi, 15 new sewage treatment plants, with a total capacity of 990 Mld. are under construction and five plants in U.P. are to be set up soon. Additionally, two sewage treatment plants will be constructed for the Hyderabad Metropolitan Water Supply and Sewerage Board and proposals for construction of a 200 Mld. plant for Kanpur and a 160 Mld. plant for Ludhiana are underway. In Tiruppur, the proposed BOT will also make provision for a modern sewage treatment plant.

<sup>20</sup> There is no intrinsic contradiction between wastewater re-use and public health.' Mara & Cairncross (1989).

<sup>21</sup> For example, in a recent survey of Lucknow, 3.2% of the of households reported flooding which entered inside their houses, and 3.5% reported that their homes had suffered flood damage. In addition, 7% had taken preventive measures to protect their properties against floods, such as raising the floor level or building a boundary wall (MSG 1997).

<sup>22</sup> In some Indian cities, these mosquitoes also transmit bancroftian filariasis, causing elephantiasis. In the town of Pondicherry, for example, the prevalence of filariasis is several times what it is in the surrounding countryside, and nearly half the mosquito breeding in the town occurs in the drains. Cairncross, et. al. (1988).

biting, poor families spend substantial amounts on mosquito coils. For example, this accounts for 3 to 5% of the total expenditure of an average household in one Delhi basti.<sup>23</sup>

1.22 These linkages are another reason for a reforming municipality to tackle the problem of solid waste, as one of its first actions, and as part of an overall effort to improve public health in the cities. The low status accorded to both solid waste management and storm drainage as a public health intervention, ensures that they receive little engineering, planning or budgetary attention. The potential impact of drainage and solid wastes handling thus needs to be assessed, when examining UWSS needs.<sup>24</sup> While there are no figures to support, unambiguously, the linkage between solid waste management services and public health, the outbreaks of serious epidemics, as in Surat, gave a temporary impetus to providing the service effectively and efficiently (see Box 1.2).

#### **River pollution and overall water resource management**

1.23 The rivers are the lifeline to many cities and towns along their banks. Almost the entire country is crisscrossed by rivers with a total length of some 45,000 kms. The country has 12 major, 46 medium and 55 minor river basins. Half a century ago, most of the rivers in India were biologically in good condition, amply met the water needs of their basin populations and supported diverse fish and flora species. Over the decades with the rapid growth in population, industrialization and indiscriminate exploitation of the nation's rivers, they are now grossly polluted.<sup>25</sup> Due to pollution by partially-treated and untreated sewage, and inefficient solid waste disposal, there are a number of negative environmental impacts. To compound the problems from the UWSS perspective, some rivers also dry-out during the summer months with resultant impacts upon both the supply of drinking water and disposal of effluents.

1.24 **Water allocation.** At present there are no legal or administrative frameworks which allow for the re-allocation of water from low-value agricultural use to high-value urban and industrial use. A coherent water allocation strategy is important for the UWSS sector. As urban water demand increases, the pressure on the availability of adequate and safe water resources

#### **Box 1.2. Success in solid waste management: The case of Surat**

The outbreak of plague-like disease in Surat, in 1994, brought solid waste to the public's attention. The contrast between the scrupulously clean Indian homes and the heaps of rubbish and filth commonly found in the urban public spaces, was much discussed in the newspapers of the day. Urban filth was deemed to be bad for both public health and for the urban economy, where the disease was present.

Accordingly, the situation created an intense political will to clean up the city. Money and professional management was mobilized on a PSP/PPP basis and there was a major cleaning of the urban areas. Today, Surat is one of the cleanest cities in India, indicating how rapidly and effectively this can be achieved if political will and the organization are present. The only question yet to be answered, is that of sustainability. This concern underlines the need for systemic changes to establish incentives for management to perform, even after the time for political profit has dissipated.

<sup>23</sup> Hukoo, et. al. (1994).

<sup>24</sup> Inadequate solid waste management leads to the clogging of drainage channels and sewers resulting in stagnant conditions - with a resultant impact upon the environment and human health.

<sup>25</sup> The Central Pollution Control Board have conducted number of river basin studies. Using best use primary water quality criteria, they revealed 19 grossly polluted stretches and 14 less polluted stretches along 19 rivers. The major sources of pollution have been identified as industrial and domestic wastes and non-point sources.

also increases. While the Government of India's National Water Policy states that domestic drinking water has the highest priority in terms of water allocation, in practice this is followed only haphazardly in the states, where there is no integrated approach to the allocation of water resources between competing uses. The interests of irrigation still dominate and this drives up the cost of bulk water to the cities. The issues in developing a water allocation strategy are discussed in the WRM's Intersectoral Water Allocation, Planning and Management Review,<sup>26</sup> undertaken in parallel to this review of the UWSS sector.

### C. INSTITUTIONAL ARRANGEMENTS

1.25 The wide variety of institutions in states across India has, in the great majority of cases, failed to evolve institutional arrangements which promote consumer responsiveness, operational efficiency and an enabling climate for improvement and investment. These shortfalls, in addition to financial management constraints (refer to paragraphs 1.34 to 1.58), contribute to the poor sector performance described above, and keep the sector operating in a "vicious circle" (Figure 1.1), incapable of overcoming the deficiencies without significant reforms.

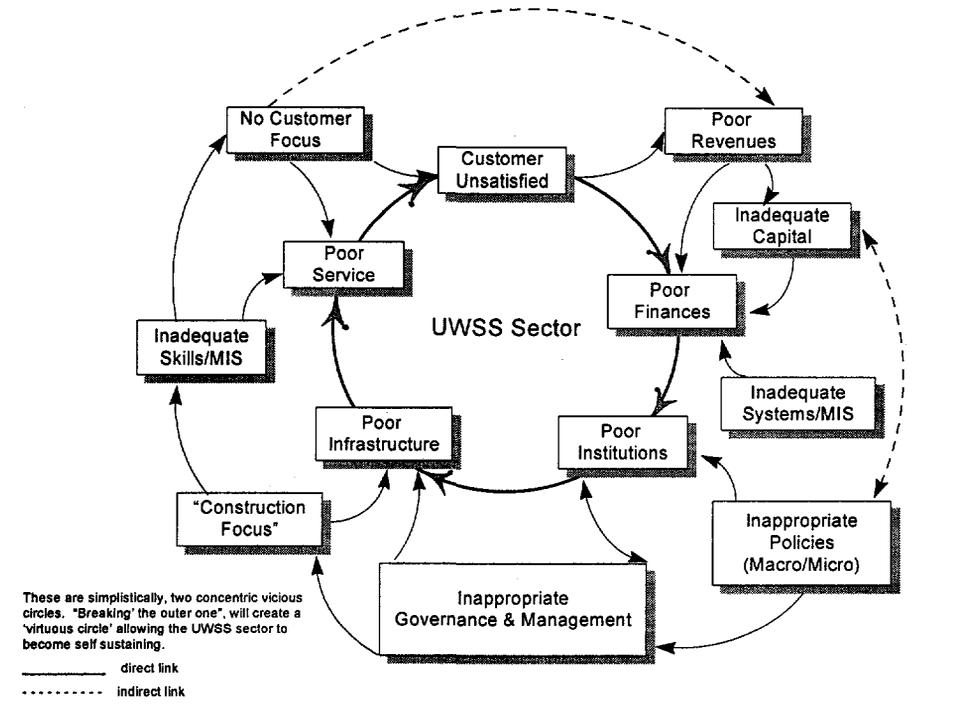
#### **Institutional deficiencies**

1.26 It needs to be borne in mind that this section, by its nature, focuses on the problems in the sector. The sector does function and it provides UWSS services to many millions of Indians. The sector has responded to new challenges and there are many examples of local initiative, some of which are discussed in this report. The sector's overall performance, however, is severely below the needs, and many of the shortfalls can be traced in origin to institutional arrangements. Despite the lack of current formal analysis of the sector, there is near-consensus among the different actors regarding the institutional problems in the Indian UWSS sector. Significant gains are possible if key features of the sector can be fundamentally reformed. The problems can be summarized as deficiencies in: (i) management autonomy and accountability; (ii) consumer orientation; (iii) management structures and continuity; (iv) organizational resource management; and (v) accounting and financial management. Each of these deficiencies is assessed in turn below.

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<sup>26</sup> Water Resources Management Sector Review: Intersectoral Water Allocation, Planning and Management. The World Bank/Government of India. Draft 1997. See also WRM's Sector Review: Irrigation Report & Groundwater Report. The World Bank/Government of India. Draft 1997. See also Matrix from Intersectoral Report. The World Bank/Government of India.

**Figure 1.1. The vicious circle**



1.28 Most UWSS providers are not autonomous but are part of local or state government, either Municipal Authority or as a PHED. Even in those state-level organizations and metropolitan organizations which are intended to be semi-autonomous in day-to-day management, in practice even the most detailed operational decisions are governed by an extensive network of rules and regulations. In addition, managers' decisions often appear to be unduly politically dominated.<sup>27</sup> These factors combine to deprive UWSS managers of the degree of operational independence that is essential in running a city's WSS system. Managers are not accountable for their organization's performance to the extent their private sector counterparts are. At times the lack of autonomy results in unnecessarily risk-averse, rule-bound behavior by many managers, while the lack of accountability results in behavior which at times appears driven by concerns other than those of their enterprise.

<sup>27</sup> This political influence is visible also in the tariff levels and structures evident in many parts of India. Seldom do tariffs fully cover operating and maintenance costs, let alone provide for capital costs or forecast expansion. Consequently, many UWSS providers are not financially sound.

**Table 1.2. Examples of UWSS institutional arrangements**

<i>Type of agency</i>	<i>Jurisdiction</i>	<i>Responsibilities</i>		<i>Examples</i>
		<i>Operations &amp; maintenance</i>	<i>Capital works</i>	
State-level specialist agency (SAS)	Entire state	State-level specialist agency (SAS)		Kerala Water Authority
	Small cities	Municipal Authority	SAS	Karnataka Maharashtra Tamil Nadu Uttar Pradesh
	Small cities	State-level specialist agency (SAS)		Karnataka (some cities)
	Large cities	City-level specialist agency	SAS	Uttar Pradesh (e.g., Lucknow, Varanasi Jal, Sansthan)
Metropolitan-level Specialist agency	Metropolitan centers	Specialist Metropolitan Agency		Bangalore, Chennai, Hyderabad
Specialist municipal undertaking	Metropolitan centers	Specialist Municipal Undertaking		Delhi
Public Health Engineering Departments (PHED)	Entire state	Public Health Engineering Department (PHED)		Rajasthan
	Small cities	Municipal Authority	PHED	Andhra Pradesh
Municipal Departments	Large Municipal Corporations	Municipal Department		Municipal Corporations in Gujarat, Maharashtra, Tamil Nadu, Andhra Pradesh

1.29 *Consumer orientation.* The general lack of consumer orientation is reflected in a lack of consumer consultation undertaken by UWSS providers about significant issues such as quality/tariff trade-offs. A contributing factor is that most UWSS providers rely on subsidies from the national and state governments to meet their financial obligations, in some cases to a greater extent than on revenue from customers. UWSS managers often perceive revenue from customers to be “fixed” whereas subsidies need to be “managed”. Consequently, many managers pay more attention to maximizing subsidy revenue than to their customers’ concerns. That said, there are many examples of good practice. For example, consumers in Mumbai and Hyderabad have, at times, been able to participate in the planning and implementation planning process through user groups. Another example is the “Swabhiman Movement” in Bangalore, a consumer initiative which promotes the organization of resident groups to address neighborhood problems and provides a platform for information exchange and discussions with civic authorities and NGOs (see Annex 2).

1.30 *Management structures and continuity.* Promotion to senior management posts tends to be on the basis of seniority, rather than on merit. In consequence, there are frequent changes in top management positions (in some states, average incumbency is around six months). This in turn prevents the development of specific skills and a longer-term outlook in senior managers.

The seniority system also means that many senior managers in the UWSS do not have the required knowledge or skills to effectively manage their large, complex and often financially-troubled organizations. In the case of PHEDs and WSSBs, the challenge senior managers face is often intensified because the top appointed officers who manage these entities come from sectors other than WSS.

1.31 *Organizational resource management.* Poor procurement of materials, poor construction practices and inadequate maintenance has reduced the operating efficiencies of water systems. They deliver an average of less than 50 to 60 percent of their capacity to the end-users, compared with best practice delivery rates of around 80 to 85 percent in other countries. Poor and in some cases non-existent management leads to waste and inefficiency, with the resultant large claim on resources that could be re-deployed for service improvements. The lack of human resources development and personnel policies tailored to meet organizational needs has led to both widespread overstaffing and labor misallocation. Overstaffing is endemic, the ratio of staff per 1,000 service connections, an accepted measure of efficiency of water utilities, ranges from 40 to 60 staff per 1,000 connections in India.<sup>28</sup>

1.32 The absence of information systems to enable informed management decisions is common. A sine qua non for the serious planning and management of water supply and sewerage systems is accurate topographical maps of the urban areas under consideration. Accurate and up to date maps and plans are noticeable by their absence, even in the larger conurbations. Investment in accurate maps and system plans is a cost-effective initiative that could be made early by any municipality with reforms in mind. The absence of long-term focus, prevalent among managers, fosters a lack of long-term corporate planning, and a lack of capacity to undertake such planning. Basic information (for example, up-to-date municipal maps and asset plans) and information systems for engineering and accounting functions are often under-developed.

1.33 *Accounting and financial management.* The above problems, particularly the lack of institutional and managerial autonomy and accountability, are also evident in the lack of accounting and financial management tools used in the sector. Few entities report against a set of monitoring indicators, let alone publicly forecast those indicators and report against them. Full audited cash accounts are rare, full accrual accounting appears to be almost non-existent. Consequently, comparatively little financial management information is available to run, or to scrutinize the performance of, the UWSS organizations. As these problems are increasingly understood in the UWSS sector, it is not surprising that there have been some positive developments in recent years. Notable examples include: the separation of UWSS budgets from the general budgets in one Municipal Corporation in Maharashtra and, in some cases, in Tamil Nadu; the legislative requirement for an annual report on subsidies in Maharashtra; and the introduction of a commercial accounting system in the Chennai Municipal Corporation. These, and many more examples throughout India, are nevertheless overshadowed by situations where change is minimal.

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<sup>28</sup> The regional average is around 10 staff per 1,000 connections; international best practice is around 2 - 3 staff per 1,000 connections.

## D. FINANCING URBAN WATER AND SEWERAGE

### Financing arrangements

1.34 Traditionally, urban environmental infrastructure such as water and sewerage, have been considered as public services to be provided by the local governments and related parastatal agencies. Municipal authorities have largely depended on grants and loans through the budgetary allocations of state and central governments, and to a limited extent on surplus from their own budgets. Table 1.3 highlights that over two-thirds of the financial resources for UWSS have come from budgetary allocations during the Eighth Plan period. In earlier years, almost the entire financing was through this mode as institutional finance for these investments is very recent, limited in volume and has been largely through government owned development finance institutions (DFIs). The local entities, who are the actual service providers, have mostly lacked direct access to the market.

**Table 1.3. Estimated resource flows for UWSS during the Eighth Plan period  
(Current Rs. billion)**

	<i>NIUA (1997)</i>	<i>EGCIP (1997)</i>	<i>MOUAE (1996)</i>
Plan Funds	55.9 (80.0)	57.6 (62.4)	59.8 (73.2)
Institutional	13.9 (20.0)	34.7 (37.6)	21.9 (26.8) (estimated)
Total	69.9	92.3	81.7
Average annual flows	13.9	18.5	16.3

Note: Figures in parenthesis indicate the percentage share in total.

Sources: NIUA (1997), EGCIP (1997), and MOUAE (1996).

1.35 A review of the financing arrangements for the urban sector has to be done within the overall context of financing arrangements in India. Until recently, these have been characterized by the directed credit regime in which different financial institutions are mandated to invest in specific priority sectors. For example, the nationalized Life Insurance Corporation of India has been required to invest 25 percent of its annual accretion to controlled funds in the social sectors, including water and sanitation. In addition, the high statutory liquidity ratio requirements for the banking sector also made funds available for priority purposes. The DFIs have largely benefited from this regime, though with the financial sector reforms this system is now undergoing considerable change. Resource mobilization by DFIs is being increasingly undertaken through market borrowing without government guarantees. In the urban sector, however, this has been true to a limited extent only for the Housing and Urban Development Corporation (HUDCO) (see Box 1.3). The limited number of intermediaries at the state level have largely depended on state transfers or Plan allocations and borrowing from HUDCO for their resources.

**Box 1.3. Enhanced market borrowing by urban sector DFIs: HUDCO**

Housing and Urban Development Corporation (HUDCO) started operations in the early seventies focusing largely on financing housing. Since 1990, HUDCO has also started financial operations in the urban infrastructure sector. It finances a variety of urban infrastructure with a major focus on UWSS. By June, 1997, it had disbursed over Rs. 19 billion in urban infrastructure of which Rs. 7.4 billion was for UWSS in over 270 different schemes. Although in initial years HUDCO benefited from the directed credit regime, over the past few years HUDCO has mobilized an increasing share of its additional resources from the market without any explicit Government of India backing. HUDCO was one of the first financial intermediaries in the country to mobilize debt through infrastructure bonds. With the emphasis on market borrowing, HUDCO has also begun to introduce more innovative repayment structures with escrow accounts for private sector lending. HUDCO has also been influential in introduction of better cost recovery measures for the water sector and has worked with several state governments in this regard.

**Source:** HUDCO Urban Infrastructure Wing, New Delhi.

1.36 The major funding, therefore, has come from the Plan allocations through the central and state schemes. Some of the state governments provide loans and grants to local bodies for water supply through the Plan allocations. For example, in the state of Maharashtra grants are available to local bodies ranging from 23 to 100 percent depending on the size class of municipality. In most other states, loans are available through Plan allocations. In general, however, the available funds through Plan sources are far less than those required for provision of basic services. The allocation of these funds to different municipal authorities is generally driven by political considerations and does not follow any rigorous project preparation and appraisal process.

1.37 These financing arrangements have resulted in a lack of rigor in lending in this sector. At the borrower's end this has led to a situation of inappropriate incentives and the resultant inefficient utilization of funds, and widespread service inefficiencies. There is also a lack of project development and management capacity at the local level. It is common for inter-governmental loans not to be serviced properly. Such delinquency is often adjusted against the transfers from state to local governments or through rescheduling of state loans. This has, in general, led to a lack of transparency, promoted apathy on the part of local authorities to financial viability issues, and inadequate attention to effective tariff structures and cost recovery.

1.38 Another problem in financing of water supply projects, especially for the smaller and weaker municipalities, has been their inability to generate their own contribution to project resources - as many do not have operating revenue surpluses. This situation may improve if the recommendations of many of the state finance commissions are implemented - both for rationalization of devolution of resources to local bodies and for improving their finances through a variety of measures including introduction of user charges on a full cost recovery basis along with indexation. For example, the Punjab State Finance Commission has recommended these changes as well as introduced incentive based devolution of grants to induce better fiscal performance for urban local bodies.

1.39 Another feature of financing arrangements for water and sanitation has been a lack of control over investment decisions by municipal entities, even though they are saddled with both the resultant debt servicing and operation and maintenance of facilities. This has especially been

true for the smaller municipal entities where the investment decisions have often been made by state level utility boards.

### **Financing gaps**

1.40 Within the above system, the flow of resources for urban infrastructure has been far too small relative to the needs. During the Eighth Plan period (1992-1997), different estimates of resource flows to the sector ranged from Rs 14.0 to 18.5 billion per annum, with an estimated share of the institutional finance in the range of 20 to 38 percent (see Table 1.3). Even the limited funds have not been utilized fully, with utilization levels compared to five year allocations at around 80 percent (NIUA, 1997). This hints at other constraints in the system which limit the absorption capability as well as the low priority accorded to this sector. The institutional capacity constraints not only limit the absorption of funds, but also result in poor use of funds with inappropriate investments and inadequate planning and project management.

1.41 Compared to the likely resource flows, estimates of investments needed to upgrade the urban water and sewerage services in the coming years are very large, ranging from Rs. 34 - 302 billion (US\$ 0.9-8.3 billion) per annum at 1996-97 prices over the Ninth Plan period (1997-2002; see Table 1.4). These variations reflect different estimation approaches as well as the inadequate information available on existing service coverage levels. Most estimates are based on per capita costs since estimates of the capacity augmentation required is not possible for UWSS given the current lack of basic information.

1.42 Further, these estimates do not capture the likely increases in real costs of providing water and waste water services. For example, according to the World Bank (1996a), the real cost of new water facilities is found to be two to three times the current cost as a result of progressively more difficult project options such as increasing distances of water sources. These become necessary due to the growth in demand of urban infrastructure which is being fueled by demographic pressures, the rise in urban incomes and the expectations of customers. It is further likely that a large proportion of the economic growth as a result of liberalization will be located in or near the urban centers.

1.43 The different estimates of investment requirements clearly suggest that they are far in excess of the likely resource flows to the sector through traditional routes. The Plan funds during the Ninth Plan period for the sector at 1996-97 prices will be around Rs. 117 billion (US\$ 3.2 billion) if the past trend in share of this sector in total plan funds continues. Even after accounting for a trend-based increase in institutional finance, there will be significant shortfalls in relation to even the lowest estimates of investment requirements. Interestingly, however, the resources will be significantly enhanced if it becomes possible to tap the capital markets, as indicated by the estimated Rs. 650 billion of investments for urban infrastructure during this period based on the macro-economic projections by the EGCIP (1997). These estimates suggest that urban infrastructure investments could increase to 17.5 percent of total infrastructure investments by 2001. But this presumes enhanced financial viability of the UWSS agencies to attract capital market financing. Even at this level the urban infrastructure investments would be only 1.2 percent of GDP. While from a macroeconomic perspective, enhancement in urban

infrastructure investments is possible, it would require considerable strengthening of the UWSS providers and major changes in financing arrangements to make this a reality.

**Table 1.4. Estimates of UWSS investment requirements and resource flows  
Ninth Plan period (Rs. billion in 1996-97 prices)**

	NIUA	EGCIP (1997)	Ninth Plan Working Group, MOUAE (1996)
<b>Investment Requirements:</b>			
Water Supply	89.2	845.4	283.9
Sewerage	81.0	663.9	259.9
<b>Total</b>	<b>170.2</b> (17.5)	<b>1509.3</b> (87.7)	<b>543.8 (na)</b>
Average annual requirements	34.0	301.8	108.7
<b>Estimated Resource Flows:</b>			
Plan Funds	117.0	@ 1.5 percent of total Plan outlay of Rs. 7800 billion for the Ninth Plan (GOI, 1997)	
Institutional	33.0	Based on a trend estimate of HUDCO disbursements to UWSS.	
<b>Total</b>	<b>150.0</b>		
Average annual resource flows	30.0		

Notes : Figures in parenthesis indicate the share of investments estimated to be required to meet deficiencies as well as augmentation and rehabilitation of existing facilities. The MOUAE estimate does not include investments necessary for augmentation and rehabilitation of existing facilities.

Sources: NIUA (1997), EGCIP (1997) and MOUAE (1996).

### Cost recovery in the water and sewerage sector

1.44 While some of the larger municipalities are financially viable and are able to service their debts, most local authorities and utility boards are in financial disarray. The main problem is the lack of incentives for cost reflective, rational tariffs and efficiency improvements in operations and new investments. The importance of user charges in UWSS is crucial. Most finance commissions have recognized this and emphasized the need to move towards a full cost recovery regime.

1.45 As previously stated, cost recovery in the water and sewerage sector has not received much emphasis in most Indian cities. As a result hardly any rigorous analysis of financial viability in the sector exists. While anecdotal information and general discussion with various actors in the sector presents a rather grim picture of sector financial viability, variability of results across cities is worth noting from the limited available evidence. For example, a recent survey reported by MOUAE suggests that out of 17 local bodies, 7 were able to meet their operation and maintenance costs whereas only 2 covered also their debt servicing costs. Analysis of other recent studies suggests that out of the 15 for which information was available,

only 4 cities cover their operation and maintenance costs completely and another 4 cover more than 80 percent of these costs. Information on coverage of debt servicing (capital costs) was available only for 6 cities, of which three almost fully covered these costs (by more than 90 percent). Thus, from this limited evidence, it appears that for at least half of the cities reported, financial viability at current service levels are attainable with only moderate rate revisions. However, even for these cities, financing investments for needed service improvements will often require considerable tariff revisions to maintain full cost recovery (Mehta and Satyanarayana, 1996d). For other cities, substantial tariff revisions will be required, particularly if debt servicing of new investments is to be done through the sector revenues.

1.46 The main argument for the low sector tariffs has been the inability of the poor to pay. Very little hard evidence exists for Indian cities, however, as to what the poor really spend on obtaining these services. Often, a large proportion of the poor do receive the minimal shared services free or at very low prices. However, the inadequacy of these services forces the poor communities to spend far more in coping costs<sup>29</sup> than those receiving a better level of services despite the very low direct water bills they incur. A recent study in Dehra Dun (Uttar Pradesh), for example, highlights this by estimating that those with access to only a public tap spent 6.7 percent of their income on water, if the value of their time spent in collection of water was included in the coping costs. On the other hand, those with access to an individual connection spent only 1.6 percent of their income on water related costs (Choe, et. al., 1996). While there are not many such rigorous studies available for Indian cities, there is considerable anecdotal evidence from many cities which indicates that the poor often pay high prices to purchase water from illegal suppliers in slum settlements or from other private suppliers, especially through water tankers.

### **Tariff structures**

1.47 There is considerable variation in the structure of charges for urban water and sewerage in Indian cities, and information is scant. In general, the systems of recovery followed are complex and lack a clear and rational basis. There are three main sets of recovery mechanisms used: user charges, service taxes and other charges, as described in Table 1.4.

1.48 **User charges.** User charges are prevalent in all the cities reviewed. Rates generally vary across user category or by consumption levels. In almost all the cities, the rates for non-domestic users are considerably higher; with non-domestic rates being 3 to 30 times the domestic rates. In a few cities which have rising block rates by consumption levels, the lowest rates for metered domestic connections are generally pegged to ensure affordable life-line rates. The lowest consumption block is generally kept at 10 kl per month per family. For the unmetered connections, it is common to have fixed rates varying by size of connections. Water supply from shared standposts in low-income communities is either free or provided at very low fixed charges.

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<sup>29</sup> "Coping costs" include the opportunity cost of time spent in collection, purchase of additional water through illegally tapped services and outright purchase of water from private vendors.

**1.49 Service taxes.** Service taxes for water and sewerage (conservancy tax) that are linked to the annual ratable value of properties are levied in many cities. In many smaller cities, water taxes form a very large proportion of total UWSS earnings, though their share in the larger cities is generally low. Collection of these taxes is usually combined with the general property tax. The oft-discussed problems of property taxes, like low assessments, bias towards self-owned properties and problems linked to the rent control legislation also permeate to the water taxes. More importantly, sole reliance on such taxes does not enable introduction of demand management. Service taxes, when levied in conjunction with user charges may be viewed as infrastructure charges to cover the costs of potential or improved access.

**1.50 Other charges.** Municipal authorities also levy a variety of other charges including connection charges, development charges and betterment levies. In most cases, however, there is no clear link with actual costs. Some cities (for example, Ahmedabad, Mumbai and Pune) are also exploring the possibilities of land and real-estate based measures such as impact fees.

**1.51** Within this system of cost recovery for water and sewerage services, a number of problems are widely prevalent, including: inadequate services for the poor; insufficient metering of connections; absence of indexation or periodic revision of rates; and inadequate accounting and costing systems.

**1.52 Inadequate services for the poor.** The general approach to tariffs for the poor implies low service levels with an almost free service. For example, it is common to provide standposts and common toilets in low-income settlements with near free charges. Similarly, there are subsidies available for meeting the infrastructure charges for service networks within slum settlements. However, these subsidies are inadequate to fund the service levels required, and are generally not combined with community resources effectively to provide more sustainable levels of services in these settlements.

**1.53 Insufficient metering of connections.** Most cities have some experience with metered connections. However, their extent and details of their actual functioning is not clearly known. Anecdotal information suggests that in many cases the meters do not work, creating numerous problems. Many cities have also abandoned the practice of water metering. For example, the domestic water metering for half inch size connections were abolished in Baroda during 1981. Water metering was also abolished in Madras and 50 percent of the 85,000 metered connections were out of order in Thiruvananthapuram (Vaidya and Ramchand, 1993). The main reasons that have been advanced for discontinuation of metering are low pressure, alternative wet and dry conditions in water distribution mains as a result of only 2 to 3 hours of supply, poor technology of meters, high supervision costs for the utility, and meter tampering by consumers. There is, however, a successful example of water metering in Pasud, a small city in Maharashtra, where an uninterrupted water service was introduced with full metering quite successfully (Patwardhan, 1991). In some of the larger cities such as Bangalore, better performance on operations of meters has also been reported.<sup>30</sup>

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<sup>30</sup> As reported by the Managing Director, Bangalore WSSB at the National Workshop in New Delhi, (see Annex 5).

**1.54 Absence of indexation or periodic rate revisions.** Currently, water charges are not indexed. Thus, even if rates are fixed at cost recovery levels at a particular point in time, inflation ensures that rate revisions, which are politically difficult, will become necessary all too soon. In one of the only examples of an attempt at indexation, the Government of Karnataka authorized the Bangalore WSSB “to revise proportionately, the water tariff automatically, without any further reference to the government as and when Karnataka Electricity Board revises the power tariff.”

**1.55 Inadequate accounting and costing systems.** In most cities, it is often very difficult to correctly assess the service costs due to the poor accounting systems. In addition, proper monitoring of costs and computerization are absent, making it difficult to assess and review the costs to determine the appropriate tariff levels. Many of the state finance commissions have also recognized this problem and have recommended improvements in these systems.

#### **Tariff revision procedures**

**1.56** Local authorities or statutory utilities are governed by their respective Acts which empower them to revise taxes as well as levy and revise the rates for different types of charges. Both the powers and actual practices vary considerably across different states. As these services are treated as public services generally, the local authorities have to frame bye-laws to levy or revise any service charges. The overall process takes up to nine months after which permission from the state government is often necessary. In case of state or city level authorities, permission of the state government is generally necessary for tariff revisions. The process of rate revisions also varies across different states and across the size class of cities. In some states such as Maharashtra and Gujarat, local authorities have greater powers to set the rates whereas in others, rates are set at the state level. For smaller cities the Directorates of Municipal Administration Utility set and/or approve the rates, often through technical inputs from the state boards.

**1.57** While systematic evidence on revisions of rates and charges is not available, at least three different influences in rate revisions at the local level can be traced. First, is the role of financial institutions such as the World Bank and HUDCO. Both have had considerable influence on rate revisions in different cities through insistence on enhancing cost recovery as a pre-requisite to project financing. The second influence for rate revisions comes from the state government itself. For example, in the states of Tamil Nadu and Karnataka, the state governments through the urban development departments have initiated rate revisions for water charges in municipalities. The third case is where either the municipal or statutory authority have brought in rate increases without any major outside influences.

**1.58** In only a few of the cases reported above, however, does there seem to be any significant attempt at understanding the consumer’s willingness to pay and prevailing affordability levels to determine the rates. Thus, on one hand, a rational system of tariff structures is generally lacking and on the other, the authorities do not have a clear idea of effective demand for different dimensions of water and sewerage services. The limited understanding of demand for service and the related affordability issues, result in inappropriate means to devise and approve tariff revisions. An additional concern would be the lack of emphasis on operational efficiency, in

terms of manpower deployment, for reducing the unaccounted for water and efficiency in the billing and collection systems. The limited available evidence clearly indicates that there is considerable overstaffing for water and sanitation operations, high levels of unaccounted for water and poor collection efficiency. Thus any efforts at moving towards full cost recovery will also need to ensure that the inefficiencies of the public system are not unfairly passed on to the customers.

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**Table 1.5. Types of charges in the water and sewerage services in India**

<i>Type of charge</i>	<i>Specific measure</i>	<i>Remarks</i>
Water Charges (Consumption Charge)	Metered charges	<ul style="list-style-type: none"> <li>• More common for non-domestic</li> <li>• Domestic meters in most cities do not work</li> <li>• Minimum charges specified in cases when meters do not work</li> <li>• A few cities have rising block rates with lowest block at affordable rates to ensure life-line rates</li> <li>• Non-domestic charges generally are very high to cross-subsidize the domestic sector</li> </ul>
	Flat rates:	<ul style="list-style-type: none"> <li>• More common for domestic sector</li> <li>• Generally varying with ferrule size</li> </ul>
	Stand posts / kiosks	<ul style="list-style-type: none"> <li>• Generally provided in low income areas</li> <li>• Practices vary from 'No charge / free' to a 'Fixed periodic affordable charge per standpoint'</li> </ul>
Service tax	Water tax	<ul style="list-style-type: none"> <li>• Levied as a percent of Annual Ratable Value of property</li> </ul> Variations on type of levy: <ol style="list-style-type: none"> <li>1. Only a service tax with no consumption charge (Ahmedabad)</li> <li>2. Alternate system - levy tax or charge whichever is higher, or tax for selected consumers</li> <li>3. Dual system - Compulsory service tax with additional levy of consumption charge (referred as excess water charges)</li> </ol>
	Sewerage tax/ Conservancy tax	<ul style="list-style-type: none"> <li>• Conservancy tax is generally levied to cover solid waste, and sewerage management, as well as costs of public health monitoring</li> </ul>
	Water benefit tax	<ul style="list-style-type: none"> <li>• To cover capital and operating costs of new facilities (Used in Maharashtra)</li> </ul>
	Sewerage benefit tax	<ul style="list-style-type: none"> <li>• To cover capital and operating costs of new facilities (Used in Maharashtra)</li> </ul>
	Other Charges	Advanced registration charges
	Connection fee	<ul style="list-style-type: none"> <li>• As per the actual cost of connection</li> </ul>
	Connection charges	<ul style="list-style-type: none"> <li>• A fixed charge levied at the time of taking connection</li> <li>• Charges varying for domestic versus non-domestic and by size of connection</li> </ul>
	Development charges	<ul style="list-style-type: none"> <li>• Generally levied in relation to property size - varying for domestic / non-domestic. No clear link to actual costs is evident</li> <li>• In low income areas, special charges are sometimes levied for slum upgradation</li> </ul>
	Betterment levies	<ul style="list-style-type: none"> <li>• Not very common, but used in land readjustment approaches</li> </ul>

## **2. THE MUNICIPAL REFORM AGENDA**

2.1 A consensus is emerging in India that institutional reform is required if UWSS services are to improve. Many of the sector's current failings stem from institutional deficiencies. A basic problem is the lack of incentives for managers to perform well. There is no mechanism to ensure that managers are rewarded if customers receive good service, and penalized when service to customers is poor. Even when managers try to do a good job, the system is stacked against them. Managers lack the freedom to manage, as a result of administrative controls and political interference. They also lack the necessary resources.

2.2 These systemic deficiencies are created by inappropriate institutional design. Equally, they can be remedied by institutional reform. The key elements of the reform of the institutional framework are: (i) democratic decentralization of responsibility for UWSS services to municipalities; (ii) business-like provision of UWSS services through commercialization of existing providers, private sector participation, and contracting out of operations; and (iii) introduction of mechanisms to ensure customer orientation of UWSS agencies, including in providing service to disadvantaged groups.

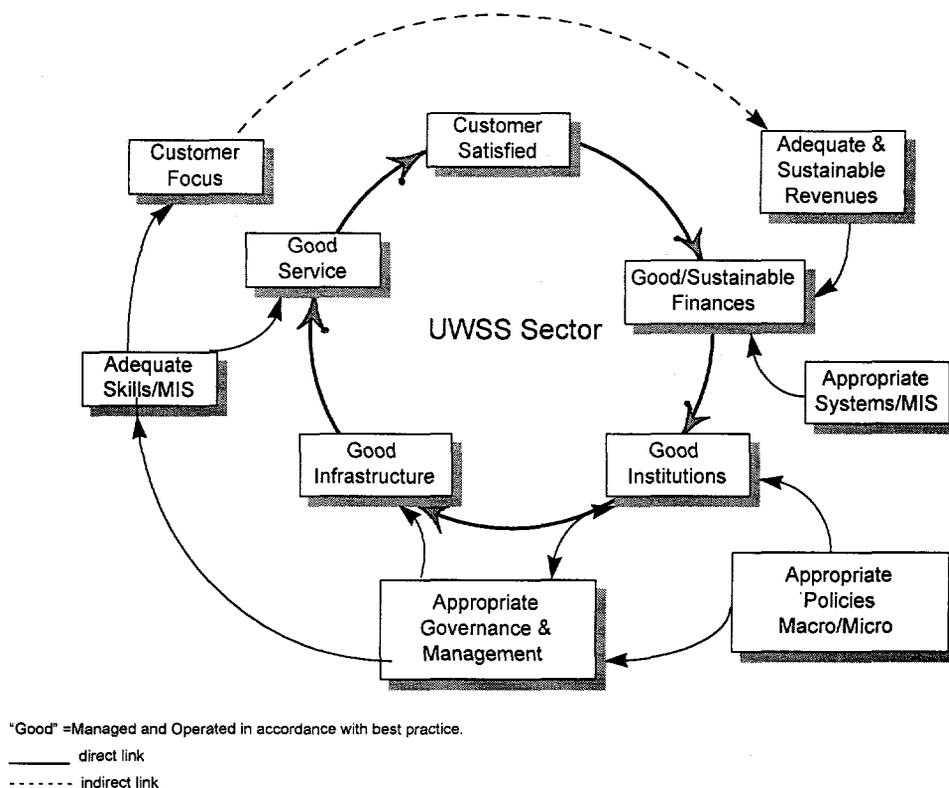
2.3 There are a number of important issues which need to be addressed if the reforms are to be effective and for the vicious cycle to be transformed into a virtuous circle (see Figure 2.1). These include: developing strategies to reform existing state-level UWSS providers; providing for regulation of, and comparative competition between, UWSS providers; ensuring the municipalities cooperate, especially when large bulk supply-schemes are needed; and applying the reforms flexibly, according to the size and capacity of the municipalities concerned. In the past, institutional reforms have often meant establishing new institutions without adequate emphasis on the changes necessary in ownership and management structures. This strategy attempts to avoid this pitfall by focusing on the institutional controls, relationships and ownership structures rather than proposals for setting up new agencies. Formation of new institutions should respond to local characteristics, demands and readiness, and not be imposed from above. In approaching institutional reform, the experience of countries such as South Africa, Brazil the Czech Republic and elsewhere is useful. Annex 1, Volume II summarizes the international experience in institutional reform of UWSS provision.

### **A. DEMOCRATIC DECENTRALIZATION AND PROFESSIONALIZING MUNICIPAL MANAGEMENT**

2.4 A first step to solving the problems is to create a mechanism which empowers customers. Their demands need to be heard, and the system must provide a reason to take these demand seriously. In a competitive market, customers buy from the producer that offers them the best mix overall of price and quality. However, market mechanisms cannot form the exclusive basis of customer responsiveness in UWSS provision. UWSS service delivery is a natural monopoly—it generally makes sense to have only one provider. There is, thus, little or no scope for competition. Moreover, all customers on a single network receive the same product—it is not possible to provide one house with water treated to a very high standard, while another household down the street gets lower quality, lower cost water. Taken together, the fact of

natural monopoly and homogeneous product mean that customers need some way to make a *collective* choice over service levels and tariffs.

**Figure 2.1: The virtuous circle**



2.5 This collective choice mechanism should be democratic and local. Democratic, because this is the best way for a group of people to make a collective decision. Local, because the constituents of the decision-making group should, as far as possible, be the people in the area served by a single UWSS network. While it would be possible to create new water customer representative agencies in each town and city, this would be unduly expensive duplication. Municipalities already have a local, democratic decision-making and administration mechanism. Municipalities are therefore the logical agents for consumers in making decisions on UWSS services. In line with the 74<sup>th</sup> Amendment to the Constitution and the Approach to the Ninth Five Year Plan, responsibility for UWSS services should be devolved to municipalities. Municipalities should thenceforth have authority to discharge this responsibility either directly, or through contracts with service providers. Central and state government will need to support, regulate and monitor municipalities to ensure they act efficiently and in the interests of customers.

2.6 Following enactment of the 74<sup>th</sup> Amendment in the national government, devolution of UWSS service responsibility has been ratified in most states. Actual implementation of this

decentralization will, however, require further reform including a transfer of real responsibility and resources from state to municipal levels. Many of these reforms will involve increasing municipal autonomy, and professionalizing urban management. These are topics in their own right, which a report on UWSS cannot do justice to. They are addressed in more detail in the World Bank's Urban Infrastructure Services Review report (1997).

2.7 This section highlights those municipal reforms most relevant to UWSS, namely: professionalizing municipal managers; improving accounting and procurement; and developing a long-term planning orientation. These improvements can be achieved over time through a combination of: sharing of good practice between municipalities, with encouragement from the concerned state government and external agencies; legal requirements from the state government establishing minimum standards and procedures in selected areas; and technical assistance in response to demand from municipal authorities. Where legal requirements are established, they should generally be enforceable by citizens and organizations, as well as by state government.

### **Professionalization of urban management**

2.8 City management requires specific skills. Although many Indians are skilled in engineering, planning, finance and economics, fewer are practiced in applying these skills in urban management. In addition, the emphasis in the strategy on customer responsiveness and serving disadvantaged groups means that municipalities will need professional skills in communications, community development and community health. Again, these skills exist in India, but are not widely deployed in municipal management.

2.9 The common practice of employing insufficiently skilled, frequently-rotated senior municipal managers leads to a lack of long-term focus and local commitment. It is recommended that options for local government reform to address this weakness be explored. Developing a professional cadre of urban managers is likely to require input from professional and training institutions, and recognition of specific skills in training and certification.

2.10 Within municipalities it will be important to define the roles and responsibilities of elected representatives *vis a vis* senior municipal management. A useful analogy here may be the relationship between a company Board of Directors—which makes strategic and policy decisions and monitors the chief executive's performance—and company management, which presents options to the Board, and is responsible for operations to implement the Board's decisions.

2.11 Professionalizing urban management and ending political control over operational decisions will be a difficult challenge. In pursuit of this objective, it will often be desirable for the senior management group to develop direct links to businesses, customer groups, etc. This will provide them with independent information, and assist them to build consensus for effective urban management. State governments and other external agencies can help by providing examples of good practice in the relationship between elected officials and city administration, and model by-laws or municipal constitutions to govern these relationships.

### **Improved accounting and procurement systems**

2.12 The accounts for UWSS should be separate from the accounts of the municipality.<sup>31</sup> This reform could be required by state law. The UWSS accounts should be established on regular commercial principles. Transfers to and from the municipality should be identified, and all accounts should be audited by professional auditors. Support will be needed in the form of examples of good practice. Professional bodies, and training institutions, will need to develop accounting guidelines and practices, and training and certification for professionals. The Institute of Chartered Accountants of India has already started work in this area. Market-oriented financing mechanisms (see paras. 4.34 to 4.42) will provide additional pressure for proper accounting.

2.13 In addition, the problems related to conflicts of interest and corruption will need to be attended to, through more rigorous audit requirements and introducing transparency in procurement. Good practice in this area will include: ending undue contractor influence over planning—the customer responsiveness mechanisms outlined above will help here; transparency in procurement; involvement of private companies in management of procurement, on a contractual basis; audit arrangements; an independent agency charged with investigating corruption, combined with strong penalties; and higher salaries, and rewards for good performance, to reduce incentives for corruption. State governments will wish to pass laws governing some of the above areas, especially requirements for audits, investigation and transparency.

### **Long term orientation in planning and financial management**

2.14 Efficient UWSS provision requires a long term orientation. Each municipal administration should prepare an integrated plan for the city's infrastructure needs. On the basis of this plan, the municipality should forecast capital requirements, and plan how the capital will be raised and serviced. These plans should be considered and approved by the elected representatives, and also made public. Publishing the plans will allow citizens to check that they are sustainable and appropriate. Municipalities will need assistance in the form of training, technical assistance, and perhaps grants, to facilitate establishment of the planning process, and to employ specialist consultants to assist them. State governments may require municipalities to prepare integrated development plans, and specify their form.

### **Integration with other reforms**

2.15 In implementing decentralization, it must be borne in mind that while municipalities are the best available agent for consumers, they suffer from a number of weaknesses. This strategy aims to address those weaknesses through a comprehensive and inter-locking series of reforms. Table 2.1 shows how all these reforms contribute to producing a system which provides democratic decentralization while correcting for the problems inherent in municipal responsibility for UWSS.

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<sup>31</sup> Accounting separation is a minimum. Section B discusses complete organizational separation of the UWSS provider and the municipality.

**Table 2.1. Strengthening decentralization to municipalities**

<i><b>Weakness</b></i>	<i><b>Description</b></i>	<i><b>Addressed through</b></i>
<b>Excessive state government control</b>	Over the last forty years, a number of state governments have taken over responsibility for many traditionally municipal functions, including development of UWSS infrastructure. As a result, municipalities' status and powers have been reduced. The progressive implementation of the 74 <sup>th</sup> Amendment will return powers and functions to municipalities, but it will take time to restore their ability to exercise these powers effectively.	Professionalizing municipal management.  Reform of state UWSS providers to make them responsive to municipalities, and devolving decisions to municipalities and their customers.
<b>Municipal capacity</b>	Special purpose agencies with statutory powers have deprived municipalities of their traditional functions, and their ability to act as overall city managers. This has led to an erosion in their capacity, lower status of municipal management, and frequent rotation of generalists into municipal management positions which contributes to the lack of municipal capacity. Municipalities lack the technical skills to manage UWSS provision. Small municipalities suffer especially from low capacity.	Professionalizing municipal management.  Municipalities contract out UWSS service provision to specialist UWSS providers.  Tailor reforms to the size of the municipality, and provide additional support to small and medium sized municipalities.
<b>Desire to avoid accountability</b>	Generally, citizens will vote out those who serve them poorly. To make decisions on how well a government is serving them, citizens need information. This gives incumbent governments the incentive to withhold or distort information, to make it harder to assess their performance.	Require municipalities to supply information to citizens, and consult. Strengthen civil society.
<b>Pro-rich bias</b>	For many reasons, from sharing similar backgrounds through to greater ability of the rich to organize and lobby, municipalities can be more responsive to the rich and influential than to the poor and disadvantaged. Policies expressed as being for the poor often have the effect of serving the better-off.	Institute mechanisms to require responsiveness to disadvantaged groups. Integrate provision to disadvantaged groups with mainstream provision, and build democratic grass roots mechanisms to enable their participation in decision making..  Private sector and NGO participation can assist the disadvantaged.
<b>Short-termist</b>	The election cycle encourages governments to be biased toward actions which yield results before the next election, and against actions which require investment or sacrifice now, for gains later. This is a particular problem in UWSS, where long-term planning and investment is essential	Professionalize municipal management, including mandating long-term planning  Providing information to customers and involving the private sector will also help

**Table 2.1 (cont.). Strengthening decentralization to municipalities**

<i>Weakness</i>	<i>Description</i>	<i>Addressed through</i>
<b>Political interference in management</b>	Politicians often want to control detailed operational management issues, rather than confining themselves to their strength of setting priorities and choosing among alternatives at a strategic level	Professionalize municipal management. Invest them with decision-making authority and responsibility  Contract out operations to specialist UWSS providers, with a clear demarcation of responsibilities
<b>Incentives for corruption</b>	Public office affords politicians and administrators the opportunity to use public resources for private gain. Particular problems in the water sector include the tendency for contracts to be structured and awarded in response to favors from contractors, and for meter-readers to under-record consumption in exchange for direct payments from consumers	Professionalize municipal management  Providing information to customers and involving the private sector will also help
<b>Parochialism</b>	Often local governments prefer solely local solutions, and avoid more efficient solutions which involve cooperating with other municipalities	Require cooperation between municipalities, retain some state-level coordination role

## B. COMMERCIALIZATION AND PRIVATE SECTOR PARTICIPATION

2.16 While the above reforms will ensure that customer demands are effectively transmitted to UWSS providers, it is also essential to ensure that these providers have the ability and incentive to respond effectively and efficiently to those demands. UWSS providers should be run on commercial lines, and should contract out responsibility, where feasible, to specialist UWSS providers who similarly operate on commercial lines. They may continue in state or municipal ownership, but they should be financially viable, have proper accounting systems, and managers with the freedom to manage. At the same time, they should be accountable to municipalities and customers through clear contracts.

2.17 Experience in India and internationally has shown that involving the private sector in UWSS provision can further boost efficiency and service standards while improving service to currently unserved disadvantaged groups at reasonable cost. Progressive involvement of the private sector in UWSS provision confers management skills, capital and performance incentives typically lacking in the public sector. States and municipalities should thus explore a variety of public-private partnerships in UWSS provision. These could include contracting out services, having the private sector build and operate new infrastructure, and selling shares in state-owned UWSS providers.

## Commercialization and contracting out

2.18 It will generally be good practice for municipalities to discharge their UWSS responsibilities through a contract with a separate entity, rather than directly through a department of the municipal administration. The municipality itself should set policy, agree on improvements in coverage and service levels, and ensure coordination with town planning and other functions. Actual operation should be delegated to a specialist operating company, which can develop a commercial focus and a high level of technical and professional skill. The operating company may be a corporatized state owned enterprise, or a fully or partially private company (for New Zealand and Czechoslovakia cases, see Box 2.1). In either case, the service provider should be financially viable, including earning a return on capital invested.<sup>32</sup>

2.19 The contract between the municipality and the UWSS provider should generally define a concession zone. The provider will be responsible for UWSS services within this zone. This can include responsibilities to extend supply to slum areas and the urban periphery. This approach has been successful in extending and improving services in many other countries, including Chile and Argentina, and will similarly yield benefits for municipalities in India.

2.20 The advantages of commercialization and contracting out include: (i) separation of policy and operations; (ii) rational decisions over inputs; (iii) accounting improvements; and (iv) economies of scale and technical skills. First, politicians set policy, and managers are free to manage. Managers are given commercial autonomy, but held accountable for performance against the UWSS service provision contracts, and for the commercial success of the company, as reflected in its accounts. The contracts will define coverage and quality requirements as well as a tariff setting mechanism. Second, by escaping direct government control, the company will be free to set salaries to attract the necessary skills, to recruit on merit, and reward performance. It will be able to make business decisions to invest in such activities as improving billing and collection, UFW reduction and in training and human resource development. Other inputs will also be procured commercially, not bureaucratically. In time, some of the companies will be able to borrow. Third, as a company, the UWSS service provider will be required to keep proper audited accounts. These accounts will be separate from the municipality's own accounts, making it easier to identify the true cost of UWSS services, and making subsidies explicit. Smaller municipalities will not be able to employ specialists, or reap economies of scale in areas such as billing, procurement, and asset management. By contracting with a service provider, who may operate in several municipalities, small municipalities can gain specialist skills and benefit from economies of scale.

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<sup>32</sup> Financial viability will not necessarily conflict with achieving social objectives. Rather, it requires that social objectives are clearly defined and explicitly financed (refer to paragraphs 4.20 to 4.28). Options include: cross-subsidies, if the service to the concession area as a whole is profitable. This is the approach adopted in Buenos Aires; government transfers directly to poor consumers, as in Santiago, Chile; or, subsidies paid to the provider in exchange for it undertaking social obligations, as in Trinidad, Puerto Rico and Guinea. The approach depends on local circumstances, but the international evidence is clear that commercialization and private participation in UWSS provision can improve service to currently unserved and disadvantaged groups, at reasonable cost.

**Box 2.1. Alternative approaches to efficiency gains - the traditional parastatal model vs. the State Owned Enterprises (SOE) model**

The traditional parastatal organization is common around the world. It has generally failed to deliver appropriate services efficiently. In contrast, corporatization, an example of which is the State Owned Enterprises model, has been employed successfully in countries including New Zealand and the Czech Republic.

The traditional parastatal model

Traditional parastatals such as the Indian state water boards, are stand-alone entities usually established under specific legislation, and subject to both considerable political influence as well as to detailed controls over types of resource used to produce their services (such as staff ceilings, controls on various types of expenditure, very detailed investment and borrowing controls). While parastatals have largely commercial functions, they tend not to be run on a commercial basis and are not accountable in the ways a private sector company is.

Traditionally, parastatals have had conflicting, often unstated objectives (e.g. employment creation and service delivery), making it difficult if not impossible, for their managers' performances to be assessed. This difficulty in making managers accountable is compounded by the lack of transparency common in parastatals.

Corporatization - the State Owned Enterprises (SOE) model

SOEs share some characteristics with traditional parastatals - they are stand-alone entities with separate accounts and specific functions. However, they differ in that the SOE model has the institutional potential to apply private sector governance and regulatory mechanisms, as far as possible, to a public sector organization.

This means that where parastatals have conflicting objectives, SOEs have clear commercial objectives, with profitability a clear indicator of management efficiency. Where parastatal managers are constrained by regulation and political directives, the SOE chief executive has full management authority, equivalent to the CEO of a private company. Elected representatives in charge of parastatals not only set policy, but may determine operational decisions. In the case of an SOE, the elected representatives must limit themselves to annual approval of proposed strategy, and appointment of the Board. Both SOEs and parastatals have Boards appointed by elected representatives. However, in the SOE model the Board is appointed purely on the basis of commercial ability, and is responsible solely for the commercial success of the entity.

The SOE model offers significant improvements over the current system. Its major vulnerability is that political control over operational decisions may continue or re-emerge, even though the formal legal structures are designed to prevent this. Thus where political interference is extreme, an SOE would essentially retain all the problems of a traditional parastatal.

**Private sector participation**

2.21 The Government of India has for some time recognized the value that private sector participation (PSP) can add to water services. The Eighth Five Year Plan states: "*Private sector efforts for construction and O&M of drinking water projects should be encouraged and mobilized to the maximum extent feasible.*" [p.380]. PSP can yield improvements in water services by: providing additional management skills and improved management incentives; making politicians concentrate on policy decisions, leaving professionals free to make the operational decisions necessary to implement that policy; and providing additional finance.

2.22 It is common to emphasize the private sector's role in supplying finance, and downplay its role in improving management. It would be a mistake to do this in India. High political risk and low levels of cost recovery mean that private investment in water and sanitation will initially be limited, often high cost, and may lead to disappointment. For example, one of the reasons for

the failure of the attempt to let a BOT contract for a new water treatment plant in Hyderabad was that the private operators' bids for tariffs were far higher than expected. However, there are widespread opportunities for private participation in management and operations. Properly handled, such involvement will lead to rapid improvements in service and efficiency, as the experience of cities such as Chennai and Rajkot show (see Box 2.2 and 2.3). This is valuable in itself, and will also pave the way to attracting private finance in the future.

**Box 2.2. Chennai service contracts**

In Chennai, formerly Madras, the operation and maintenance of 14 sewage pumping stations was contracted out in 1992. The success of this contract led to further contracting out of an additional 61 pumping stations, on a mixture of two and three-year contracts. In addition, the operation and maintenance of four water boreholes has been contracted out and it is planned to extend this to a new water treatment plant and a new sewage treatment plant. The contracted-out stations have achieved cost savings of 45-65%, compared to the Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB). This has been achieved without any compulsory redundancies, instead, CMWSSB has re-deployed excess staff to vacancies resulting from retirement elsewhere within the organization.

**Box 2.3. Contracting out in Rajkot**

Rajkot, like many other cities in India, has contracted out a number of municipal services to private firms as well as community groups. The most prominent of these are solid waste management, and maintenance of street lights, public toilets and gardens. Other services include recreation services and afforestation. While this has led to some cost savings, (estimated at 5 percent of the total revenue expenditure on service provision), the major purpose has been rationalization of labor management within the Corporation. This has been done without any effort at retrenchment (which, in any case, would be impossible given the labor laws) but by freezing new recruitment for existing vacancies. Contracting has also helped the Corporation to increase service coverage for essential services and provide extra services (like aviary, aquarium and afforestation) which may not have been possible otherwise. In case of neighborhood gardens, maintenance has been handed over to local residents with positive results. RMC has been careful in controlling the extent of contracting out to ensure the public department has the capacity to provide essential services in the event of service disruption. More studies are necessary to assess the effect of competition on costs and service performance.

Source: RMC (1993), as reported in Mehta (1993).

2.23 There is a great variety of possible forms of private sector participation to draw on. Table 2.2 summarizes a number of the common types. Considerably more information on the options and the international experience is provided in Annex 1 of Volume II. The main lessons from these experiences are that : (i) it is desirable to develop public-private partnerships, with political (and sometimes financial) commitment from the government; (ii) contracts need to be carefully developed, to ensure proper incentives for the private sector to achieve efficiency (see Box 2.4); (iii) adequate preparation is necessary before undertaking long-term private sector participation options, especially gathering detailed information on existing assets and the potential for financial viability; (iv) where BOT or utility-wide concessions are not possible immediately, corporatization of utilities, tariff reforms and a series of management contracts will pave the way for greater private sector participation; and (v) contracts should ensure that disadvantaged groups are served, through providing appropriate incentives and explicit subsidies if necessary.

**Box 2.4. Lease contracts - the case of Guinea, West Africa**

Guinea has had a lease contract in place since 1989. The primary aims of this contract were to improve efficiency in the urban water sector, expand service coverage and make the sector financially viable. Following a competitive bidding process, in which bidders were evaluated on the reduction they offered against a benchmark tariff calculated by consultants, a consortium of two French water companies took a 51% share in the operating company (SEEG) holding the lease contract. The winning bid offered a discount of 30% on the benchmark tariff. The government retained the remainder of the shares, and also 100% ownership of a separate holding company (SONEG) which owns the sector's assets, receives the lease payment from SEEG, and finances investment.

Initially, tariffs were well below cost recovery levels. To allow time for service improvements to reduce opposition to tariff increases, and for households to adjust, tariffs were increased gradually to cost recovery levels. In the interim, the World Bank Group provided funding to cover the difference between costs and revenues.

The introduction of PSP has been generally successful. Connections have risen from 16,500 to 33,500, and service coverage has increased from 40% to 52% of the population. UFW, after peaking at 62% in 1993, has declined to 47%. The utility is now financially viable, with a ratio of operating costs to operating revenues of 71%, compared with 122% in 1988.

There have been some problems with PSP in Guinea. Tariffs have now increased to around Rs 32/m<sup>3</sup> (US\$ 0.90/m<sup>3</sup>). As a result, around one-third of connections are inactive. Additionally, the split between maintenance, (the responsibility of the operating company) and investment (the responsibility of the holding company), creates incentives for SEEG to skimp on investment so that SONEG is forced to invest in rehabilitation.

2.24 The water sector in India, however, presents a significant array of barriers to PSP, including: there is little awareness of the potential gains from the private-public partnerships in the sector; a misperception that PSP will deliver cheap capital; low tariffs and lack of financial viability; and lack of information and capacity needed to negotiate and monitor complex arrangements. These barriers create apprehension amongst municipalities and lead to high risks for potential private participants. They are overcome through an incremental approach which yields early and demonstrable successes. This approach would start with:

- *easier types of PSP*, including management contracts, service contracts, contracts to operate discrete treatment works, and financially viable BOT contracts serving thriving industrial areas. These types of PSP have already started in India (see Box 2.2 and 2.3). They will build financial viability, and experience in private public partnership, paving the way for more ambitious forms of PSP such as concessions in the future;
- *favorable local conditions*, such as: a pressing need for new infrastructure or other service improvements - this creates the demand for change; or a change champion—this may be a strong municipal commissioner, the state government, or a consumers' group; and a strong revenue base, to reduce the financial risk to the private sector; and
- *demonstration projects*, in which central and state government, and external agencies will provide encouragement, technical assistance and financial support to selected municipal authorities to involve the private sector. Such projects could vary from a development bank-assisted concession in a mega-city, to an incentive-based management contract for reduction of unaccounted for water. Lessons from the

demonstration projects should be widely disseminated throughout the country, to catalyze the reform process.

### **C. CUSTOMER RESPONSIVENESS AND THE ROLE OF CIVIL SOCIETY**

2.25 Special measures will be needed to ensure that municipalities and UWSS providers are responsive to customers. These should include requirements to consult in a meaningful way with customers. Through consultation, provision of information and other support, municipalities should encourage the development and involvement of civil society, in the form of customer associations and citizens' groups. Disadvantaged groups, especially slum dwellers, have been particularly poorly served by the current system of UWSS provision, and often poorly served both by the democratic process and by the bureaucracy. Additional measures will be needed to ensure that they receive a good quality, affordable UWSS service. These will include requirements to consult with and involve disadvantaged groups in service planning and delivery; integrating plans for serving slum areas with planning for the city as a whole; and provision of explicit and well-targeted subsidies.

2.26 The central aim of the reforms is to make UWSS responsive to citizens' needs. Democratic decentralization, commercialization and private sector participation will help, but will not be sufficient. Additional mechanisms and actions are required. These revolve around providing information and customer consultation. Without information, consumers find it difficult to monitor the municipality's performance, or suggest changes. Types of information which should be published include: financial—cost of operating the service overall, and by scheme or part of city etc.; coverage and services levels—reliability of supply, water quality, etc., disaggregated by part of city (see Box 3.5 for an example of such information provision); and plans - new schemes, the improvements in coverage and services levels they are intended to provide, and the cost and tariff implications.

2.27 While the nature of consultation with customers will differ in large cities versus smaller communities, all effective consultation should: include an active duty on municipalities to reach out to all groups, especially those which are disadvantaged by conventional political processes, such as slum-dwellers, women, and scheduled castes and tribes. They should also be designed to encourage the development and participation of organized civil society as well as individuals, and include a duty to take the results of the consultation into account.

2.28 An effective strategy is likely to be to start consultation at the ward level on current service delivery. This should be linked to existing ward committees. Often simple or inexpensive operational changes will be possible to respond to consumers' wishes at low cost. In time, more elaborate consultation processes linked to planning investments and service improvements can be developed. Municipalities will need to manage these consultations to prevent inconsistent wish-lists emerging, and to ensure that people understand the cost implications of potential service improvements.

**Table 2.2. Options for Private Sector Participation**

Option	Example	Operation	Management of system	Maintenance			Investment		Ownership of assets	Duration (Years)
				a	b	c	Planning	Financing		
Service contract	Chennai								Public sector	1-5
Management contract	Puerto Rico, Trinidad & Tobago								Public sector	3-5
BOOT (new assets)	Thailand								Company-Public sector	10+
Lease	Guinea, Ostrava (Czech)								Public sector	10-20
Concession	Buenos Aires, Manila								Public sector <sup>2</sup>	20-30
Asset sale	England & Wales								Company	Perpetuity

Notes: <sup>1</sup> Three different functions exist: planning (a), carrying out the work (b), and financing the maintenance (c)

<sup>2</sup> The assets are transferred to the concessionaire for a fixed period of time but are owned by the state

Key: Solid shading: responsibility lies with the private operator

Clear: responsibility lies with the public sector

Diagonal shading: responsibility varies according to the contract

2.29 It is self evident that Both information provision and consultation must reach out to customers. However, some current approaches are not good practice (e.g., publicizing information by making one copy available in a municipal office is not commonly followed in India). Materials need to be presented in languages and formats which the target audience understands. The media for consultation will include press releases, newspaper advertisements, brochures and public meetings. State governments and external agencies can provide examples of good practice, and guidance. International examples of good practice include the UK Market Planning exercise, municipal and regional Resource Management Planning in New Zealand, and the requirements for customer consultation in development planning being adopted in South Africa.

2.30 State governments may also mandate the format of consultation. This can include specifying the information to be provided, placing a legal duty on municipalities to actively reach out to all groups to ensure they are informed and their views are heard, and a duty to take account of the results of consultation in planning service delivery and improvements. The recent initiative by GOI (Department of Administrative Reforms and Public Grievances, April 1997) and the Government of Himachal Pradesh to establish a Citizen's Charter is an example of good practice that other states could follow.

2.31 The move towards greater consumer orientation by UWSS providers also necessitates the presence of strong consumer associations and other forms of civil society associations, to coordinate and voice consumer demands. A few examples already exist, such as the Civic Affairs Centre at Bangalore, Ahmedabad-based groups, specifically Consumer Education and Research Society, AMA Centre for Management of Civic Affairs, and Foundation for Public Interest. Water, sanitation and public health issues are also addressed by other citizens' groups such as the Swabhiman Movement in Bangalore (see Box 2.5 and Annex 2), Bombay First for Mumbai and the newly formed Ahmedabad Citizen Trust. While there is considerable potential in these organizations, most are relatively new, having been formed in the second half of the 1990s.

**Box 2.5. Swabhiman Movement, Bangalore**

Swabhiman, a citizen initiative in Bangalore launched in 1995, motivates and facilitates organization of resident groups to address neighborhood problems and offers a platform for civic authorities, NGOs, resident groups and public service agencies to share information and work together to improve services, environment, planning and management systems. Swabhiman operates at two levels: at the city level a stakeholder committee works as a core group to develop broad strategy and plans for joint action; and at the neighborhood level, resident groups (including low income groups and NGOs) identify, prioritize and seek people's participation to address local problems. Overall activities of Swabhiman include: solid waste management projects in 35 localities, critique of city level development plans, consultations on investment decisions, demonstration projects and performance monitoring of authorities and service provider agencies.

2.32 Consumer associations will need to be supported and strengthened, and new ones developed. Local and state governments should facilitate this process. Support to the existing associations and organizations should be through financial assistance as well as providing opportunities for interaction and dissemination of best practice information. The associations

must maintain their independence and neutrality and avoid co-option by the government. The development of new associations with focus on UWSS activities should be facilitated, along the lines of the Swabhiman Movement and the Pune Express Groups of Citizens. These actions will be successful if local governments introduce transparency in the public systems, for example by: disseminating and encouraging public scrutiny of plans and accounts; developing and publishing citizens' charters for UWSS; and conducting public hearings on important long-term planning.

### 3. APPROPRIATE INSTITUTIONAL ARRANGEMENTS AND REGULATION

#### A. REFORM OF STATE WATER BOARDS

3.1 Implementing democratic decentralization, commercialization and private sector participation implies comprehensive reform of state water boards and public health engineering departments. In general, state level UWSS providers could be restructured into the following units: a bulk services unit, which would own and operate the bulk schemes, and sell bulk WSS on contract to municipalities; a distribution service operator, which would contract with municipalities to operate their distribution systems; an engineering bureau, supplying WSS engineering services; and residual policy, research or regulatory functions, which would be integrated into core state government.

3.2 Such disaggregation would require legislative change, and should be part of an overall reform program. Therefore reforms of state UWSS providers will often best be made in the context of a state strategy, analogous to the state power sector restructuring strategies underway or recently completed in some of the states of India. Issues to be addressed in such a strategy will include:

- *the extent to which functions are divided among separate organizations.* This will depend both on size and competition considerations. For example, there may be economy of scale arguments for keeping bulk and retail operations together for the smaller entities. These would need to be balanced against the possible bias which vertical integration could introduce into the market for provision of UWSS services on contract to municipalities;
- *the commercialization and PSP strategy.* For example, engineering functions operate in a competitive market, and could be privatized rapidly and completely. Involvement of the private sector in distribution services provision might be more gradual and limited; and
- *relationship between state and municipal level reforms.* For example, if a state entity currently owns and operates a municipal distribution system, issues to be addressed include whether ownership of the operating entity should be split from ownership of the infrastructure, and whether ownership of either the entity or the infrastructure should be devolved to the municipality, or remain with the state.

3.3 As with the municipal authorities discussed in Chapter 2, it will be good practice to commercialize the disaggregated state UWSS entities. This will include:

- *separating policy and regulatory functions from service provision functions.* Policy and regulatory functions should remain with government, service provision should be the province of the commercialized entity;

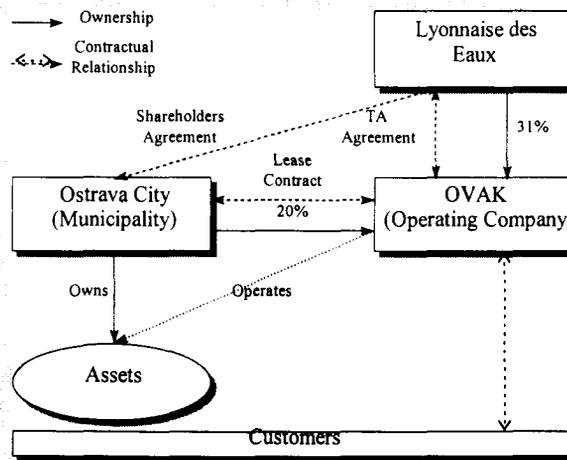
- *management autonomy for the commercialized entity.* That is, the chief executive of the commercialized entity should have the same powers as the chief executive of a private company;
- *cost recovery for the commercialized entity,* through tariffs, and in some cases explicit government subsidies for targeted poverty groups. The costs to be recovered should include a return on capital employed in the business;
- *proper accounting along fully private sector lines;* and
- *holding the entity accountable for good performance* through: (i) contracts with its customers (often the municipality will be the effective customer); and (ii) the commercial efficiency of the entity as reflected in its accounts.

3.4 These objectives will often be furthered by involvement of the private sector in managing the entity (under contract) or owning it (through purchase of shares from the government). Ostrava in the Czech Republic provides an example of the disaggregation and commercialization of an integrated state UWSS provider (Box 3.1). Further details on the Ostrava reforms are provided in Annex 1 Box A1-1.2 describing how, following disaggregation, public-private partnership was established in the new UWSS service provider. The new structure for India's UWSS sector could be as in Figure 3.1.

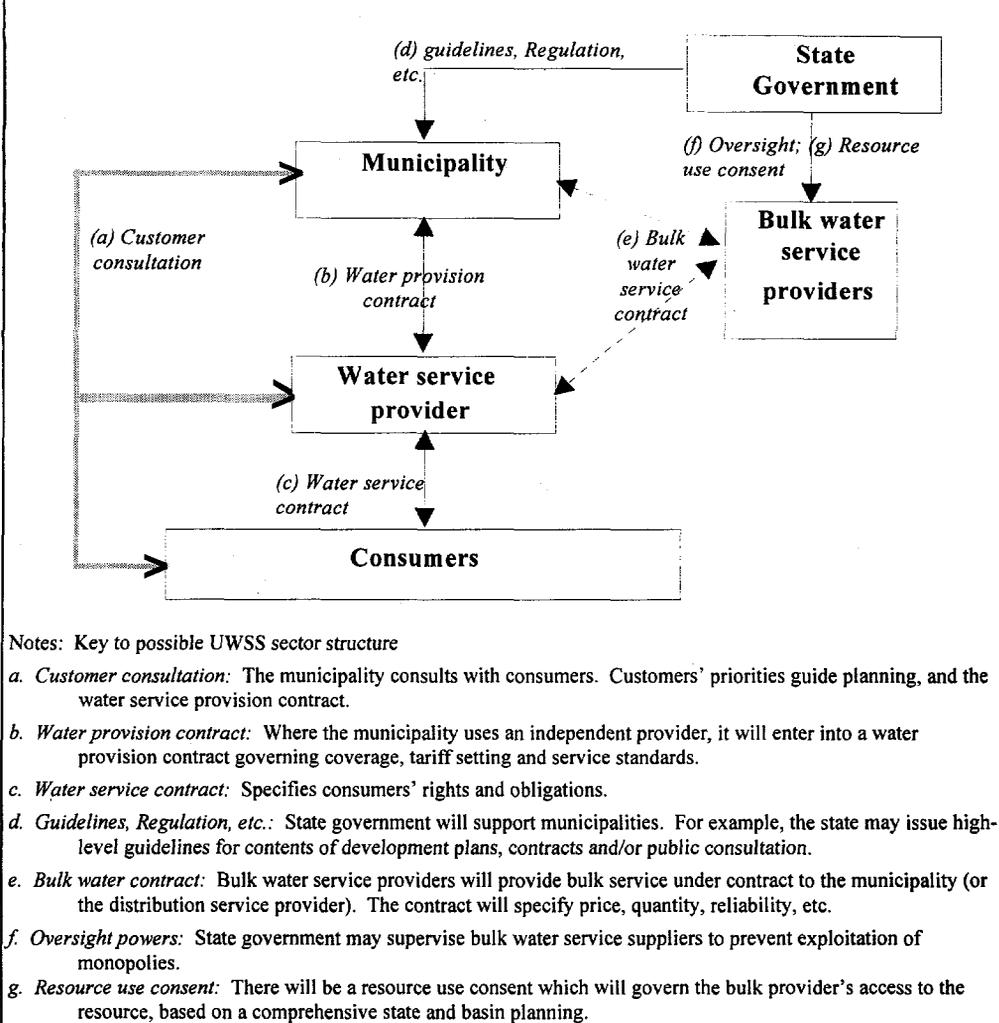
**Box 3.1. Structure of the water sector in Ostrava, Czech Republic**

In Ostrava, the municipality wanted to introduce a foreign operator into the water sector, to provide the necessary expertise that it lacked. However, it was also concerned to retain ownership of the sector in public hands, and to ensure that the domestic private sector was able to participate in some form. Under the structure adopted for the sector, ownership of the infrastructure was retained by the municipality. A separate operating company, OVAK, was created which signed a 30-year lease agreement with the municipality to operate the infrastructure.

The municipality retains a 20% stake in the operating company. A further 31% is owned by the municipality's chosen partner, Lyonnaise des Eaux (LDE) of France. A shareholders agreement, valid for 10 years, between the municipality and LDE provides for them to seek each others agreement on all major decisions affecting the sector. LDE also provides support to the operating company, under a technical assistance agreement. The remaining 49% of the operating company is held by private individuals, including employees and investment funds. To date, this structure has proved successful in satisfying the municipality's objectives for PSP, and all parties feel that the relationship is working well. The diagram below illustrates the structure in Ostrava.



**Figure 3.1. Possible UWSS sector structure**



## B. MULTI-MUNICIPAL SCHEMES

3.5 Democratic decentralization (refer to paras. 2.4 to 2.7) needs to include mechanisms to encourage cooperation between municipalities in a region. Cooperation will be particularly desirable in the following cases: where an existing scheme serves several municipalities; where new bulk water services can be most efficiently provided to several municipalities by a single scheme, or a municipality needs water from a source at a distant location; and where distribution services can best be provided by a single provider on contract to several municipalities in an area.

3.6 *Existing Systems.* Where an existing bulk scheme is managed by a state UWSS provider, reform of the scheme should be addressed in the context of the reform of the state entity. Initially, this is likely to involve commercializing the scheme operator as discussed in para. 3.3. For example, it could be separated from a state water board, and corporatized as a separate entity. Its accounting should be structured to identify the costs of operating and maintaining each

scheme. It should develop and implement a plan to make each scheme self-financing.<sup>33</sup> The next step would be to remove any legal monopoly the existing operator has in supply of bulk services. This would allow the possibility for competing operators to enter the market, or for the municipality or groups of municipalities to self-supply in the event that the existing operator does not provide a good service. Third, commercial, contractual relations between the scheme and the municipalities it serves should be established—that is, the scheme operator should negotiate a contract with each municipality,<sup>34</sup> specifying prices, volumes and service standards. Lastly, where appropriate, this could be followed by PSP, in the form of contracting out management of the schemes to the private sector, and selling some or all of the shares in the bulk-scheme operating companies.

3.7 *New or Augmented Schemes.* Where municipalities need to augment their bulk service supply, or to contract with a UWSS distribution provider, mechanisms to encourage efficient, multi-municipality solutions are needed. One option is the development by state governments of District and Metropolitan Area Planning Committees, the creation of which is required by the 74th Amendment. Their mandate includes consideration of water-sharing, and the integrated development of infrastructure. A second option is to introduce a legal requirement for municipalities to consult with their neighbors when planning new bulk-services, and to choose multi-municipality solutions where these are most efficient.

3.8 A third option is competitive procurement of integrated solutions. The state government could manage a process which combines state level planning with market solutions. Municipalities would forecast their bulk water service needs for, say, 15 years ahead. The state government would then compile these forecasts to produce a summary of needs across the state. The state government would then call for bids to meet these needs. Bulk water providers, both private and state-owned, would bid to provide solutions. The state would award BOO or concession contracts to the providers which could meet demand for bulk water services at least cost.<sup>35</sup>

3.9 State government involvement in promoting and enabling cooperation will be beneficial. For example, in Tiruppur, local business associations promoted a multi-municipality bulk scheme, which the state government is now supporting. However, encouraging cooperation should not come at the cost of infringing each municipality's role as agent for its consumers. Therefore caution is appropriate against mechanisms which would force municipalities to purchase bulk services from a new scheme promoted by a state-level organization. Such mechanisms may result in schemes which are engineer-driven, not consumer-driven. It is recommended that each state choose the mix of mechanisms appropriate to its circumstances.

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<sup>33</sup> As a general rule. In some cases the State Government will agree to allow direct- or cross-subsidies to some schemes.

<sup>34</sup> Where municipalities have established a separate utility to supply water services in the municipality, the contract may be negotiated with the utility rather than the municipality itself. For simplicity we refer to municipalities, but this should be taken to include municipal-level WSS companies throughout.

<sup>35</sup> A system similar to this is used for procurement of new power generating capacity in several US states. It is known as 'all source bidding'. It works well, and could be adapted for use in water.

### C. REFORM IN SMALL, MEDIUM AND LARGE MUNICIPALITIES

3.10 The basic reform principles apply to cities of all sizes. However, the application of these principles will vary according to the size and capabilities of the municipalities concerned. The following sections describe how the principles could be applied in large, medium and small municipalities. We do not propose a precise definition of these categories of municipality. Clearly there is a continuum, from rural market towns of 20,000 people, up to mega-cities with thriving industry, a strong middle-class and high administrative capacity. Besides size, factors such as income and education levels, rate of growth, and strength of municipal administration determine where on the continuum a municipality is, and which reform options are appropriate.

3.11 Taking these factors into account, we propose the following loose categories. Although, for simplicity, we refer to the categories as large, medium and small, the definitions are in fact based on a city's overall capacity to take over responsibility for its own UWSS services, and not simply on size.

- *Large* - cities in this category have well developed municipal administrations, a strong economic base, and would typically have a population of at least one million. These cities are ready to take responsibility for their own UWSS services, plan their own reforms, involve the private sector themselves, etc. This category includes all the metro-cities, as well as smaller cities with strong administrative capacity and economic base, such as Ahmedabad, Pune and Tiruppur;
- *Medium* - these cities will typically have a population of over half a million. They do not have the administrative or economic strength to take on full responsibility for UWSS services immediately, but they do have the potential to do so over time. This category includes cities with populations of over one million, where those cities are economically or administratively weak; and
- *Smaller* - this category is for those cities and towns which, for reasons of economies of scale or administrative capacity, are unlikely to be able to take full and individual responsibility for their UWSS services in the foreseeable future. Municipalities with population under half a million or with very low administrative capacity will be in this category.

The sections which follow are not prescriptive. Rather, they illustrate the factors and options which should be considered as states and municipalities develop their reform strategies.

#### **Reform in large cities**

3.12 For large cities, the usual strategy will be rapid devolution of responsibility, subject only to general state level laws. These laws will typically apply to all municipalities, and may require certain aspects of good practice such as competitive procurement, customer consultation, serving the disadvantaged, accounting separation, tariff rationalization and coordination on regional issues.

3.13 Where a large municipality is currently served by a municipal-level UWSS provider, it should be largely free to develop its own reform strategy. Options such a municipality should consider will include: corporatization; contracting out services such as treatment plant operations; BOOs and BOTs for new infrastructure; management, lease or concession contracts with the private sector; and sale of some or all shares in the city's UWSS provider to the private sector.

3.14 Where the municipality is currently served by a state-level water entity, the state and municipal government will need to plan reforms together. While the principle of democratic decentralization suggests that the municipality should be free to choose its own UWSS provider, there would be severe transition costs if a large municipality was simply to stop using a state UWSS provider and create an alternative provider. By developing the reform strategy together, state and municipal government can avoid unnecessary transition costs.

#### **Reform in medium cities**

3.15 State strategy for the medium cities should still be to devolve responsibility rapidly. However, medium cities will need significant capacity building in their agencies, and more support and control from state level than the large cities. The nature of this support and control will need to be decided by each state. It could include: more active outreach or secondment of staff to provide technical assistance; state control of the contracts concluded between medium cities and UWSS service providers, at least initially; state government taking the initiative in grouping a number of medium cities together for developing new bulk service schemes or involving the private sector; a staged process in which municipalities are required to pass specified competence thresholds before being granted additional powers; and state review of municipal decisions, with state powers to overturn municipal decisions which are not in consumers' long term interests.

#### **Reform in small cities and towns**

3.16 Small cities and towns lack the capacity and economies of scale to take full and individual responsibility for their UWSS services. Therefore, there may be a need for special solutions, developed at state level. In theory, it would be possible to give even the smallest municipalities responsibility for their UWSS services. Where a municipality lacked capacity, it could delegate responsibility to another body, such as a state government or a neighboring municipality. Where the municipality was too small to benefit from economies of scale on its own, it could cooperate with its neighbors, or contract with a UWSS service provider operating in the area.

3.17 Such a purist approach is likely to lead to a number of problems in practice. These include the following: small municipalities may lack the capacity even to delegate their responsibilities to another body, or to monitor the body to which they have delegated; small municipalities may be taken advantage of by unscrupulous contractors; and the international experience is that municipalities are often parochial, refusing to cooperate with their neighbors even when such cooperation would result in a better or cheaper service to their own citizens. State governments may choose to take an active interest in overcoming these problems. In

addition to the options for outreach and control suggested for medium cities, interventions appropriate for smaller municipalities could include:

- requiring the state UWSS entity to offer all smaller municipalities a fair contract for supply of UWSS services;
- state government vetting of any initiative by a smaller municipality to contract with a UWSS provider not approved by the state;
- state government requiring small municipalities to combine with their neighbors for UWSS purposes; and
- state government continuing to take direct responsibility for UWSS services in smaller municipalities, at least for a period.

#### **D. BETTER SERVICE FOR DISADVANTAGED GROUPS**

3.18 In the past, the response to concerns over service delivery to the poor and disadvantaged groups has been low tariffs and special slum development programs for these communities. The limited evidence suggests that this approach has often led to low quality of services which are not integrated with municipal systems, and the poor generally bear higher actual costs as a result. A new approach is needed. The strategy entails comprehensive mechanisms to ensure affordable access to improved services for the disadvantaged groups, especially low income communities which reside in slum settlements. This includes special features to address the particular needs of women and of socially disadvantaged groups. The role of women needs to be seen not only from a perspective of social requisite, but also as contributing to their status and empowerment within the community.

3.19 The main constraints to achieving this objective for slum communities are:

- absence of land title and tenure and their marginal and hazardous locations make it difficult to provide services effectively. While most municipal authorities provide minimum services, major capital investments are avoided;
- settlements are often characterized by a higher percentage of politically marginalized communities, which makes it difficult to bargain for better services;
- a general perception that the poor are not able and willing to pay for services, and therefore, require subsidies;
- the centralized, engineer- and contractor-dominated process does not allow consultation with the community, especially women;
- limited activity in the sector by NGOs, compared to their work in health, education, child care, housing and other sectors; and
- the lack of a clear legal obligation for universal provision of water and sanitation services.

3.20 The long and complex set of constraints necessitate that adequate efforts are made to incorporate the main lessons from a variety of reform efforts, both from within and outside India.

Major lessons are that: community involvement in the planning and management processes is critical to success; rational tariff structures that have transparent subsidies when necessary are important; and participation of the private sector provides opportunities to enhance coverage and effectiveness of service provision.

3.21 The recommendations are therefore related to integrating the needs of the disadvantaged communities as a part of the overall city level plans, contracting arrangements and tariff reforms, and recognizing the need for greater emphasis on community consultation for service planning in low income communities.

### **Community consultation and participation**

3.22 There are several programs and independent NGO efforts which have focused on evolving community participation in planning and management of these services for the poor. Some of these are reviewed in Annex 2. Lessons from these include:

- efforts which have relied on seeking appropriate technology solutions at the local level with intense community participation to select the most preferred alternative are likely to be the most successful (for example, see Box 3.2);
- developing strong community-based organizations is imperative for involvement of communities in local planning and management. For this, the role of women has been found to be extremely important. The experience in India of Urban Basic Services for the Poor (UBSP), urban health projects (IPP series) as well as the work of NGOs such as SPARC and SEWA illustrate this;
- the involvement of many different stakeholders helps to enhance transparency, effectiveness and efficiency in delivering services to the poor. Stakeholders may include local private industrialists (as in Ahmedabad), NGOs, existing local groups of women and children, local community workers from education and health sectors and other civil society associations;
- the important role of community credit as evidenced by the successful examples of Grameen Bank in Bangladesh and SEWA Bank which have helped to change the conventional view of the poor as being non-bankable; and
- the need to integrate service provision in disadvantaged communities with the city level distribution and collection systems.

**Box 3.2. Community-based sanitation in low income areas  
The Orangi Pilot Project, Pakistan**

Under the Orangi Pilot Project (OPP), the community organizers and research professionals have assisted communities in Karachi's largest squatter settlement to construct and pay for sanitary toilets, underground sewer lines and collector drains, thereby improving sanitation, health and the community's self esteem. The scale of operation (over 600,000 poor people in Karachi have been covered), investment resources contributed by the community (entire costs of internal networks), and the nature of services offered by the OPP team (which amounted to less than 15 percent of the total costs) are special features of the program.

The role of OPP staff has been to explain the benefits of sanitation, share information on alternatives and provide technical assistance. Social organizers identify a "Lane Manager" who collects contributions, manages construction and maintains accounts. Lane Committees elect Neighborhood Committees (typically around 600 families) who manage the secondary sewers. The external sewers in the main trunk are the responsibility of the municipal authority. The OPP approach has also been used in other parts of Pakistan, with lesser degree of success due to problems of inadequate coordination between the community and slow implementation of required new municipal internal and external procedures.

3.23 Essential measures for community participation and consultation in planning to ensure better services for the poor include:

- enact legal requirements for universal coverage for basic services—this already exists implicitly but it is necessary to make it an explicit policy;
- enact legal provisions for duties to consult specified disadvantaged groups in planning and management of local service provision;
- develop and implement participatory approaches to assess community preferences and willingness to pay, and the need for explicit and transparent subsidies (for example, see Box 3.3 on Brazil). This process should form an important part of the professionalization of UWSS entities (refer Chapter 2); and
- support development of community groups and community credit systems through programs such as the UBSP or through NGOs and link with existing groups for participation in planning and management.

3.24 Integrating municipal-level PSP options with local-level community planning and management is essential for effective and efficient service provision. However, it must be recognized that community-based approaches take more time, even though they are more effective in the long run. It is, therefore, necessary that the formation of community-based organizations, community credit systems and the development of community consultation processes become routine activities of municipalities and UWSS entities. This is currently lacking in many municipalities and UWSS entities. For example, it is common to find a municipal authority ready with engineering plans for large water and sewerage projects without any plans to integrate the slum settlements.

**Box 3.3. Serving the disadvantaged in Brazil and Ahmedabad**

Under the Prosaner project in Brazil, different approaches to determining community preferences and willingness to pay have been developed. For example, in Recife, Brazil, the local government offers families three choices: continue with their current system, connect to a conventional water borne system or connect to a condominal system which reduces the construction costs by 75 percent and monthly tariffs by 65 percent. While availability of technology options has made a major contribution to citizen choice, community participation and organization have been crucial for sustaining citizen support.

In Ahmedabad, under the slum networking project, a partnership involving local government, community, NGOs, the private corporate sector and a community credit system is underway. The private sector, the community and local government contribute equally to the costs of local infrastructure networks (water, sewerage, streets, streetlights and landscaping). The private sector also plays a crucial role in management. NGOs, such as the Foundation for Public Interest, assist in community participation efforts, and community credit ensures that the community contributions are made possible and kept safe during the project implementation period. This ambitious plan attempts to cover all the slum settlements in Ahmedabad.

Note: No. 48 on 'Participation and Local Government', August 1996.

Sources: for Brazil: ED Dissemination. Note - No. 48 on 'Participation and Local Government', August 1996.

3.25 Another major hurdle in enhancing coverage to slum settlements relates to lack of legal tenure. While this issue is difficult to resolve, it would be useful to shift the focus from the issue of legal tenure to security of tenure for providing infrastructure services in all low income communities, to the extent this is possible within the prevailing legislation. It may be also useful in the long run to review the relevant legislation. In the short term, approaches such as land sharing have been used successfully in India (Hyderabad) and elsewhere (Bangkok). Appropriate pricing of land for slums on public land needs to be worked out and the proceeds transferred to a slum networking fund as discussed below. Such transfers will need to be done with community involvement as was the case with the Hyderabad Urban Community Development project.

**Private sector participation and the poor**

3.26 It is important to dispel the misconception that PSP will affect the poor adversely. The coverage of slum settlements and other low income communities, and the terms of this coverage, can be made a part of the contractual agreements. Experience with recent concessions such as in Buenos Aires and Manila illustrate that, with efficiency improvements, better coverage of quality affordable service can be achieved (see Box 3.4). Such measures will, however, have to be carefully planned to be compatible with the commercial interests of the private sector. Specifically, measures to assist the poor will include:

- legal requirements for universal coverage of basic services, for example, through introducing the concept of concession zones. These requirements should allow a reasonable transition period, and include the understanding that this service need not be provided free of charge; and

- providing explicitly for funding of uneconomic but socially desirable services, whether through cross-subsidies, subsidies to poor consumers, or payment from the government to the private UWSS provider for the social services.

**Box 3.4. Private participation and the poor: International experience**

**Tariffs:** The efficiency gains from private sector participation often result in tariff decreases. For example, in Buenos Aires, tariffs were reduced by 17% following privatization. In Manila, the price reduction was around 50% for half the city, and 75% for the other half. In some cases where existing tariffs levels are below cost of efficient service providers, private participation need not result in tariff increases to the poor. Generally the efficiency gains of PSP are enough to counter tariff increase, enable subsidies to be reduced and service quality increased. In Puerto Rico, pre-existing implicit government subsidies were made explicit, and continued once the UWSS provider was in private hands. In Chile, a direct government subsidy is paid to poor households.

**Coverage:** Since many poor areas do not have piped services currently, system coverage is even more important than tariff levels. In the first three years of the Buenos Aires concession, water service coverage was increased by 9%, and sanitation coverage by 6%. In Manila, the concessionaires are required to provide universal water service coverage, and a seven-fold increase in sanitation coverage, by the end of the 25 year concession period. In Guinea, the number of water supply connections was doubled in the 7 years following private participation.

**Service quality:** Poor water quality leads to sickness. Unreliable supply increases the coping costs experienced by disadvantaged groups. Private management and finance can reduce these problems. In Puerto Rico, the private operator is required to comply with tough US environmental and drinking water quality standards, and is liable for large fines in case of default. In Trinidad and Tobago, the operator is paid a bonus for increasing the number of households with at least a 12 hour daily supply. Since private participation, Buenos Aires no longer suffers from water shortages in the summer months. In Manila, the concessionaires are required to comply with drinking water standards from the outset, and by 2000 to provide uninterrupted 24-hour service throughout the city.

## E. REGULATION AND COMPARATIVE COMPETITION

3.27 Under the approach proposed, economic regulation is to be devolved as close to end users as possible, while retaining overview and economies of scale through the involvement of higher levels of government where appropriate. Because of this decentralized approach, the different aspects of economic regulation may be performed by different levels of government. We discuss in turn: regulation by municipalities, in particular of UWSS distribution providers; regulation by state governments; the role of central government; and the particular issues posed by regulation of UWSS bulk providers. Financial regulation for direct market access by municipal authorities and enterprises is envisaged as being provided through a market regulatory authority, as discussed in Chapter 4.

### Regulation by municipalities

3.28 The rationale for democratic decentralization is that municipalities are democratically accountable to UWSS consumers, and therefore are best placed to make decisions on their behalf. The core of these decisions will be the package of tariffs, coverage and service standards which the UWSS provider will offer to customers. This is also the key regulatory decision.

3.29 The starting point for the regulatory framework, therefore, is that the municipality should have the power to make the main regulatory decisions. Where the municipality provides the water service itself, it will implement the decisions directly. Where services are provided by a separate entity, the regulatory framework, including controls on tariffs, coverage, quality and service, can be embodied in the contract between the municipality and the UWSS provider.

3.30 There are important limits to the concept of municipal regulation. To some extent these can be remedied by rules and supervision from the state level. These are discussed below. (The special problems of small and medium municipalities were discussed above).

### **Regulation by State Government**

3.31 The state government has three potential regulatory roles: supervising municipalities; regulating UWSS providers directly; and providing a comparative competition facility. As discussed earlier, municipalities suffer from a number of weaknesses, some of which may be remedied by rules imposed by the state. Such rules will often be procedural. For example, states may require municipalities to follow proper planning, accounting, auditing and procurement procedures, to consult with citizens over UWSS services, and to serve all groups including the disadvantaged. Such rules need to be enforced, for example through fines or withholding state payments to the defaulting municipalities. States could also reserve the right to take temporary direct control of a municipality which consistently failed in its duties.<sup>36</sup>

3.32 Given low municipal capacity, and the likelihood that specialized skills in economics, law, finance, engineering and accounting will be required to regulate UWSS providers, it may make sense for states to establish a specialized UWSS regulatory agency, which could regulate UWSS providers directly. The role of such an agency vis-a-vis municipalities would have to carefully balance the objectives of specialization and economies of scale in regulation, against the objective of democratic decentralization. For example, simply giving all regulatory decisions to the state regulator would achieve economies of scale in regulation, but not allow democratic decentralization. Better options might be to allow municipalities to delegate their right of regulation upward to the state regulator, or for the state regulator to provide models and procedures within which municipalities must operate.

3.33 The State Public Utilities Commissions in America provide helpful models in this regard. For example, the Indiana Public Utilities Commission regulates all UWSS providers in the state, unless the citizens of a municipality opt out of its powers by voting for regulation to be devolved to the municipality. Brazil is currently developing systems which supplement municipal control with state regulatory agencies.

3.34 Whether or not a state decides to establish a UWSS regulator or public utilities commission, we recommend that states provide comparative competition facilities. This would collect information on UWSS enterprises throughout the state, thus assisting each municipality to assess the relative quality and efficiency of its UWSS provider. The state facility should also

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<sup>36</sup> The new South African Constitution provides an example of this approach.

spread examples of best practice innovations from one municipality to another. The state facility should link to a central comparative competition facility, to share information with other states in India, and internationally. The facility could be provided by a state government agency, by an association of municipalities in the state, or by a private company or NGO working on contract.

3.35 In establishing the comparative competition facility it will be important to draw on the experience of other countries, including the UK, Chile and the Czech Republic, concerning the data to be collected, the definitions and comparative techniques used. Box 3.5 provides an example of the comparative information already being collected in India, which could be expanded and developed.

### **Regulation by Central Government**

3.36 The central government will also have three roles related to regulation:

- establishing model laws and contracts—these may be modified and adopted by states and municipalities;
- providing a central comparative competition facility. This should form the apex of the state comparative competition facilities. Its roles will include promoting consistency in definitions, drawing on international data and experience for dissemination within India, and sharing information and innovations between states; and
- providing guidance and an overview role to state governments—this will generally concern supervision of the implementation of the 74<sup>th</sup> Amendment in all areas, including UWSS provision.

#### **Box 3.5. "Report Cards"**

A number of efforts using "report cards" have been undertaken in India to establish and monitor public opinion with respect to the delivery of public services. Report cards are a method of measuring public opinion in a structured way using household sample surveys, focus group discussions, case-studies, documentation of information from service providers and interviews with a sample of lower level staff of the agencies. The cards attempt to assess, rank and benchmark the following parameters: overall satisfaction with service delivery; the extent and coverage of services; patterns of emerging problems; the response of agencies to reported problems and grievances; and the effectiveness of bribes ("speed money") in rectifying reported problems.

These studies have generally found that (i) administration of public services is uniformly low across most cities, (ii) supply shortages are often man-made and information is manipulated for personal gain, and (iii) the popular belief that public services are cheap is a myth, when full account is taken of the real financial and economic cost of service provision. The findings also suggest that (iv) improvements in service delivery and consumer satisfaction can be improved at reasonable costs, (v) consumers are willing to pay more for improved and reliable services, (vi) consumers' active role in the planning and monitoring of public services is essential, and (vii) non-responsiveness of UWSS (and other public services) is directly linked to their monopolistic status.

Sources: Public Affairs Centre, Bangalore. Studies in Ahmedabad, Bangalore and Pune. AMA Centre for Management of Civic Affairs, Ahmedabad - City Monitor Programme. Foundation for Public Interests, Ahmedabad - Study of Poor Self Employed Women in 12 wards of Ahmedabad.

### **Regulation of bulk providers**

3.37 Regulation of bulk WSS providers raises somewhat different issues from regulation of UWSS distribution providers. Regulation will often be needed, as in many cases the bulk scheme operator will have an effective monopoly in the supply of bulk water or sanitation services to a city. Commercializing the operator raises the risk that it will exploit this monopoly by charging the municipality excessive prices. Options to address this risk include:

- reliance on bargaining—just as the scheme operator is the monopoly seller, the municipalities are monopsony buyers. If the operator cannot sell to the municipalities, it cannot make money. Both sides need each other, and have an incentive to reach a mutually acceptable solution;<sup>37</sup>
- club ownership—the municipalities supplied by a scheme could be given ownership of the scheme operating company. As its owners, they could stop the scheme charging excessive prices; and
- regulation—state government could establish a mechanism to prevent schemes charging excessive prices. This would need to be in the context of wider performance monitoring.

Decisions will have to be made case-by-case, and external support and advice will often be needed.

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<sup>37</sup> An example of this approach is airports in New Zealand. Airports and airlines need each other in the same way that bulk water suppliers and municipalities need each other. Relying on this, the New Zealand Government decided not to regulate airport landing charges as it corporatized, and is now moving to privatize, airports. So far, the policy is working.

## 4. EVOLVING APPROPRIATE FINANCIAL SYSTEMS

4.1 This chapter outlines the strategic design for evolving appropriate financing systems to achieve the right incentives at the local level. Problems of financial viability and inefficiencies have emerged due to the wrong signals to local entities in the past. The sector has thus developed an image of non-bankability and one which cannot generate returns adequate to offset perceived investment risks. This leads to lower and subsidized investments. In order to move out of this vicious circle, it is necessary to make the financing systems more market oriented and enhance sector financial viability through efficiency improvements and rational tariff structures.

4.2 An increasing realization of the limitation of public resources in relation to the estimated investment requirements suggests the need to enhance the resources for the sector. One approach is to attract private sector finance through private sector participation, as discussed in the second chapter. There is also the possibility of accessing the capital markets, which is receiving growing interest in India. This is especially due to the phenomenal growth in capital market issuance in India which has grown from an issuance of Rs. 55 billion to over Rs. 448 billion over the last six years (Mehta, 1995a). A number of public policy statements and reports emphasize this. For example, the Approach Paper to the Ninth Plan states that:

*“Some of the municipal authorities in cities could also raise resources from the market by issue of bonds. Those bodies which are able to restructure their revenue account finances, must be enabled to engage in borrowing for productive infrastructure projects subject to credit worthiness. Financial sector reform to allow floatation and trade of municipal and local body papers, for financially viable local bodies and tax and other incentives for this purpose must be thought of, as in other countries [p.112].*

4.3 Despite the apparent attractiveness of tapping the capital market for urban environmental infrastructure, there are serious institutional and sectoral constraints related to the demand side (from the urban infrastructure sector) and the supply side (constraints emerging from the lack of a well developed bond market in the country). These include: lack of financial viability in the sector and inadequate capacity to absorb funds efficiently; inadequate and inappropriate accounting and auditing practices among the UWSS providers which make transparency and market disclosures difficult; excessive dependence of local authorities on the state government; lack of a well-developed bond market which limits the available financial products; lack of any sustainable credit enhancement or insurance opportunities; and lack of familiarity of the financial sector with urban sector institutions.

4.4 The considerable demand side constraints suggest that there will be a need to ensure both institutional and tariff reforms before wide-spread access to capital markets becomes possible. However, a few of the larger municipal authorities may be able to effectively tap the markets even now as evident from the investment grade rating already received by four municipal corporations. It needs to be recognized that the possibility of market access can itself provide the motivation for local level reform. A number of financial sector initiatives by the central and some of the state and local governments are already contributing to such developments.

4.5 The enabling strategy discussed in this chapter is designed to position the UWSS sector so that it benefits both from enhanced funds and efficiency gains. A schematic of the resulting financial system that would be appropriate to India is presented in figure 4.1, which illustrates the financing arrangements for greater market orientation and moving towards financial viability in the sector. Three critical elements of the strategy for achieving the appropriate financial system are: tariff reforms; developing capital market access for UWSS—using alternatives such as direct market access through a municipal bond system, new forms of financial intermediation and as support for project development and credit enhancement; and leveraging limited governmental resources. These are discussed in detail below.

#### A. TARIFF REFORMS

4.6 The review in Chapter one highlights the crucial importance of tariff reforms in evolving a commercial orientation in the sector. It is also evident that while rate revisions have often been made, the problem has been lack of a rational and transparent framework for tariff setting. Greater private sector participation and market oriented borrowing will require this as a prerequisite. Systemic changes leading towards tariff reforms are essential, and it will be necessary to revise the structure using a consultative process with active involvement of local bodies as well as adequate analysis of existing systems and market demand assessment.

##### **Emerging consensus and constraints**

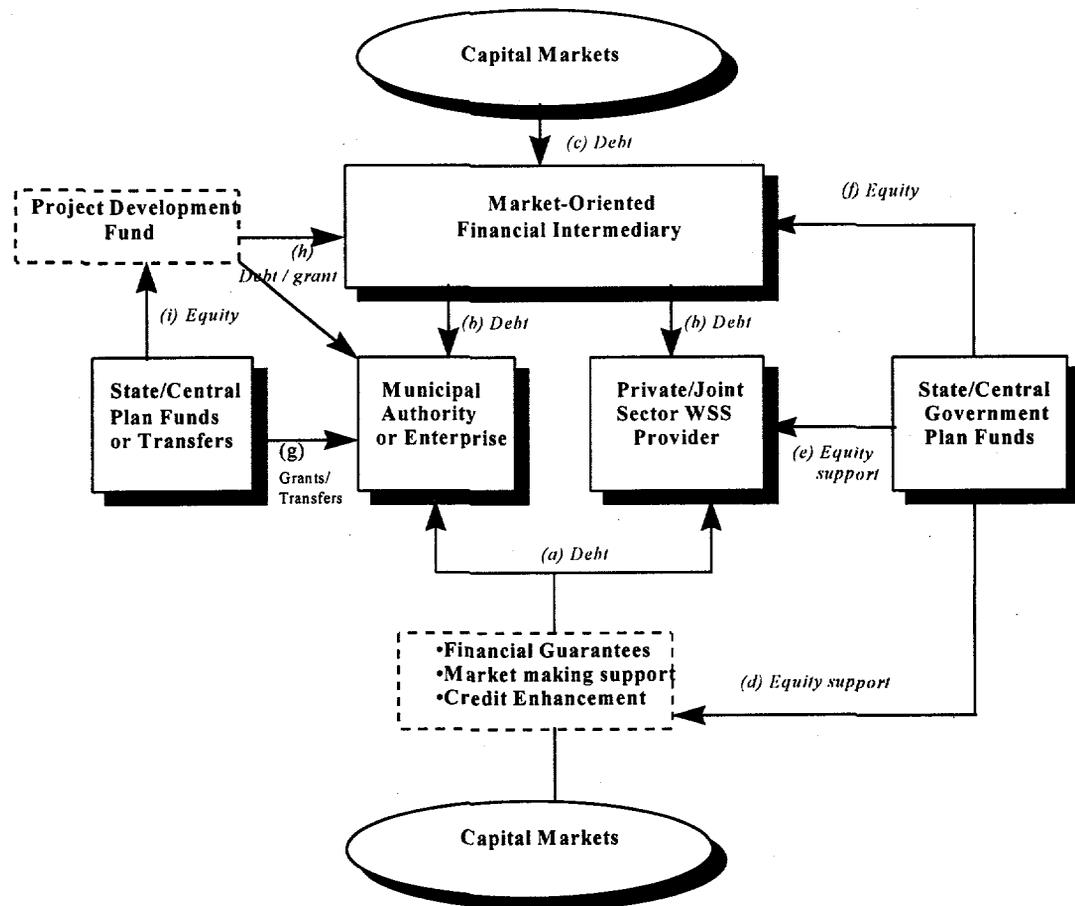
4.7 There is general consensus in India that tariff-setting must increasingly focus both on economic efficiency and financial viability, while not losing sight of social affordability. The Approach Paper to the Ninth Five Year Plan states that:

*"Efforts will be made to enhance the financial viability of the sector through policies based on full cost recovery to permit resource mobilization for the sector through institutional finance, market borrowings, private investment, etc. Subsidies, if required, for the poorer sections of the urban society should be selectively well-targeted and transparent to ensure that there may be no excessive cross-subsidization from other sections [Section 4.15, paragraphs (vi) and (vii)]."*

4.8 While distinct subjects, financial viability and tariff-setting have become tightly linked throughout the Indian water sector. This is because the current approach to tariff-setting has resulted in tariff levels often far below basic operation and maintenance levels, let alone full cost recovery. However, tariff reforms are also likely to be constrained by: lack of rational tariff structures which match the costs and charges in relation to the incidence of benefits; low current tariff levels in most cities that make a rapid move to full cost recovery politically difficult, due to the high initial revision requirements; lack of customer consultation in service planning—this is needed to link investment decisions to effective demand; inadequate accounting systems which make it difficult to assess the real costs of services; and lack of a system of indexation which would enable revenues to keep up with the rising costs of inputs.

4.9 Difficulties of tariff reforms are evident from the fact that examples of best practice in this area are far fewer than in other areas such as decentralization and private sector participation. From the available limited evidence, there appears to be some attempt at rationalization of tariffs in some developing countries. Protection of the poor is sometimes done through a life-line block which is cross-subsidized by other higher consumption blocks. In order to overcome the

**Figure 4.1. Evolving appropriate financial systems**



- a. **Direct Access:** from the capital markets by UWSS providers in public, private or joint sectors. May be with credit enhancement or insurance (financial guarantee) to enhance credit quality.
- Financial Intermediation:**
- b. Borrowing from market oriented financial intermediary (MoFI) on strictly commercial principles with rigorous project appraisal
- c. MoFIs mobilize an increasingly larger proportion of their resources from the capital markets, using where appropriate securitization of pooled assets
- Leveraging limited public resources:**
- d. State and Central Government contribution to the equity of a commercial financial guaranty company or a commercially operated debt service reserve fund facility or new financial products to provide credit enhancement
- e. State / Central Government contribution to the equity of joint sector WSS providers
- f. State / Central Government contribution to the equity of the financial intermediary or refinancing facility through RBI or IDFC
- g. System of incentives and sanctions to induce municipal good practice, especially including tariff reforms among UWSS providers
- h. Conditional borrowing from project development fund
- i. State / Central Government contribution to a project development fund

problem of high rate revisions required for full cost recovery, a phased introduction of full cost pricing can be adopted as was done in Conakry, Guinea. The service delivery here was through a commercial operation by a private operator. Politically feasible increases in tariffs were made possible through a World Bank credit which was phased, so that over a defined period full costs were recovered from customers (see Box 2.4).

4.10 Innovative examples of infrastructure charges for provision of block level distribution and collection networks are also available. In Brazil, under a condominium financing system, "households pay for the on-lot costs, blocks pay for the block sewers (and decide what level of service they want from these)" (Briscoe and Garn, 1994). The trunk sewers are, however, financed through city level charges. In Ahmedabad, under the slum networking project, households in slum settlements pay a fixed charge of Rs. 2000 which is estimated to be a third of the average costs of providing the block and settlement level services including water and sewerage networks, streets, streetlights and landscaping. The remaining two-thirds of the costs are shared by the municipal authority and local private industry groups (see Box 3.2).

4.11 Other overseas experience suggests that, in some circumstances, it is possible to charge for actual usage at levels higher than at the individual household. For example, in Armenia, communal services such as rubbish collection are charged at the apartment building or block level. Another example is the bulk water metering and billing system in South Africa (see Box 4.1). There is a trade-off, however, between the savings from metering at levels less than the individual household and weakening the link individuals perceive between their consumption and bills.

4.12 In other examples from Germany and France, participation of all stakeholders in a river basin to decide on standards and investment priorities in relation to costs and the likely prices for water resource planning, has been found to be very useful (Briscoe and Garn, 1994). The same principles can be applied in discussions among different consumers (such as domestic low income, industrial, etc.) to determine service levels and coverage within urban areas in relation to willingness to pay.

**Box 4.1. Community responsibility for cost recovery - Laastehoop, South Africa**

In Laastehoop, a community in South Africa's Northern Province, the local water board operates a system of bulk water tokens. The system serves around 7,500 of the community's estimated population of 20,000. The Local Water Committee, which is supplied from the reservoir via street taps, collects 8 Rand (approx. US \$1.50) per month from each family to buy tokens from the water board. The tokens are inserted into a supply mechanism that releases 160m<sup>3</sup> of water into the community reservoir.

In 1995, operating costs were fully recovered from users (other costs such as depreciation and capital were not charged for). This compares with an average recovery in the area of less than 10 percent of running costs.

4.13 In some of the recent concession contracts for water and sewerage services, participation of the private sector has helped to also reduce the average tariff levels (see Box 3.4). This is largely due to the significant efficiency improvements which have been possible with the entry of the private sector. For example, in Manila the tariff proposed by the winning bid for half of the city was almost a fourth of the existing tariff. This clearly highlights the link between efficiency

improvements and financial viability with acceptable tariff levels, all three criteria of which must be satisfied for the tariff structure to be effective.

4.14 **Economic efficiency** requires that consumers be aware of the full cost implications of the decisions they make. At present, however, the link between tariff levels and the actual costs of those services is generally absent and municipal/utility investment decisions bear no relationship to the effective demand for these services. Despite the great variety and complexity of tariffs, there is no rational tariff structure in most Indian cities.

4.15 The first step to rationalizing tariff structures is to clearly make the link between tariffs and costs by disaggregating charges. An initial disaggregation might involve introducing separate charges, as follows:

- For connections: (i) a connection fee, to cover the direct costs of connecting to the municipal mains; in case of a condominium system at the block level this would also include the costs of on-site networks; and (ii) a standing charge, for example, management, billing and metering costs, which contains the fixed costs of maintaining the connection.
- For distribution systems, an infrastructure development charge to cover the costs of developing or augmenting the secondary (and tertiary) distribution or collection systems.
- For consumption: (i) a consumption charge for water, preferably on a volumetric basis to cover the costs of creating and maintaining water abstraction capacity and the primary distribution system, as well as the economic costs of water procurement and operating costs of supply; and (ii) a sewerage charge as a surcharge on the water charge, to cover the costs of creating, maintaining and operating sewage treatment and disposal facilities.

4.16 In Indian cities, a variety of different charges are being used at present. It is necessary to review the existing set of charges and restructure these within a rational tariff design as outlined above. For example, the metered and unmetered water charges and service taxes for water found in most Indian cities, may be treated as consumption charges. The infrastructure development charges are levied as connection charges. Most cities recover the actual costs of taking a connection from the municipal network directly.

4.17 **Financial viability** requires that, over time, revenues equal full expenses (operating and capital). As discussed earlier (Chapter 2), however, it is essential to recognize and reduce inefficiencies related to excess manpower, poor collection of revenues and high levels of water leakages in the system. It is imperative that strong incentives are introduced to reduce these inefficiencies. A critical aspect in sustaining financial viability over time is to introduce indexation of charges so that the revenues keep up with increases in costs of those inputs which are beyond the utility's control. In addition, it is important to structure tariffs in ways which don't create disincentives for metering. While metering is preferred for efficiency, the actual experience has been mixed. One alternative would be to introduce group meters in specific settlements (for example, refer to Box 4.1). It is likely that, given the historically low levels of tariffs, many cities will be able to achieve financial viability only over time. Such a time frame

needs to be explicitly decided and, in the interim, subsidies will need to be provided to support the transition process.

4.18 Another important aspect concerns the possible externalities from water and sewerage services. The environmental and health benefits, especially from improved water quality and sewage collection and treatment, generally accrue to larger groups and are more public in nature. Subsidies may be necessary to achieve these benefits. Any such subsidies should be internalized at appropriate levels, such as a city, groups of cities or among consumers in a river basin. Ideally, these groups need to jointly decide on appropriate service levels, investments and resultant tariff levels. This requires that the level of any subsidies be predictable and allocated transparently.

4.19 In many cities, the domestic sector is cross subsidized by leveraging very high tariffs on the non-domestic sector. While the high non-domestic charges contribute to financial viability, it is essential to rationalize the domestic tariffs in relation to demand. Excessive cross-subsidization is both inequitable and will be self-defeating if the non-domestic consumers resort to alternative sources for water and disconnect or reduce consumption from municipal supply.

4.20 **Socially acceptable tariffs** require that adequate service levels are possible for the disadvantaged within their affordability levels. Typically, focusing on economic efficiency and financial viability considerations alone when setting tariffs may result in tariff levels which disadvantaged groups cannot afford. It would, however, be best to base tariff levels largely on economic efficiency and financial viability considerations and then manage affordability issues as earlier discussed (paras. 3.72-3.76) through mechanisms such as:

- including a lifeline block in the tariff structure for consumption-related charges;
- providing explicit subsidies to disadvantaged groups in the context of connection or infrastructure development charges. Under present practice, subsidies for slum-related programs and for special social groups are available from the state and central government Plan allocations. It is essential that such subsidies are made explicit, pooled and allocated in relation to the overall magnitude of the disadvantaged population in the city; and
- developing and using appropriate community and other credit systems to spread the payments for infrastructure and connection charges over time.

4.21 It is recommended that the state governments play a leading role in inducing all municipal authorities to adopt a rational and transparent structure for UWSS tariffs. This may be through appropriate legislative changes or government orders supported by the necessary technical assistance. The decision for actual price levels would, however, be within the domain of municipal decision making and based on customer consultation and long term planning. Such a rational structure would be supported by:

- separation of UWSS accounts and budgets and a complete assessment and valuation of all its assets. Such provisions already exist in Maharashtra as per the Section 95 of the

Maharashtra Amendment pursuant to the 74th Constitution Amendment Act and as per the recommendations of the Working Group on UWSS for the Ninth Plan;

- clear guidelines on the costs to be included in determining the different charges;
- measurement of unaccounted for water and collection efficiency of different charges with a clear indication of i) impacts on average tariff levels and ii) measures to reduce inefficiencies;
- indexation of average tariffs; and
- transparency in any transfers from the general account with explicit norms laid down for such transfers. It should be made mandatory to have a public annual statement on the incidence of tariffs on different consumers and distribution of subsidies, similar to the Annual Report on Subsidies required as per the recent amendments to the municipal legislation in Maharashtra.

All such measures need to be supported by appropriate and sensitive public campaigns to enhance the public awareness of the costs of providing UWSS services.

4.22 Introduction of such tariff-related reforms may also be achieved through a regulatory body for tariff determination. It is necessary to determine whether an additional regulatory body is necessary, and, if so, whether responsibility for that body should rest with the state government or within a specific contractual arrangement at the local level. A recent effort by the Government of Karnataka (GOK), where HUDCO has acted as a catalyst, illustrates both the potential of the state government role as well as the need to include measures for rationalization in such an approach. GOK has developed a set of guidelines which mandate the urban administrations to levy a minimum water charge for consumption and connection. These vary by size class of cities. Municipalities are free to levy higher charges if justified by their operating and debt servicing costs.

4.23 There are problems with the GOK approach, including the lack of emphasis on developing a rational structure of charges which reflects different cost elements. There is, also, an absence of other important aspects such as indexation, considering the impact of system inefficiencies, and an explicit statement of subsidies in terms of their source and incidence. Despite these limitations, the GOK approach illustrates the type of pro-active role which a state government can play and the likely influence of a financial intermediary in this process. Such an approach to tariff structures will need to be evolved at the state level with clear guidelines and possibly mandatory requirements. It should be done through a consultative process with active participation of urban local bodies.

4.24 The state government, either through its own departments or through a market-oriented financial institution (FI), should operate a system of incentives and sanctions to ensure that the municipal authorities follow such requirements. These may include the following:

- linking the transfer of state funds to local authorities to local performance on tariffs and level of cost recovery. This may be linked to the recommendations of the State Finance Commissions (SFCs). Some of the SFCs such as for Punjab have made similar recommendations;

- rationalizing tariffs and achieving cost recovery as pre-requisites for permission from the state government to borrow from FIs, market or external agencies, as well as for accessing a state-level debt service reserve fund or other state supported commercial guarantee facility as suggested below (paras. 4.50 to 4.53);
- providing grants for technical assistance to introduce accounting changes and a rational tariff structure. Some of the grant funds with the Tamil Nadu Urban Development Fund (see Box 4.2) are being used to introduce accounting reforms in municipal areas; and
- preparing and disseminating comparative information on municipal performance on cost recovery, tariff levels and efficiency in service delivery (see Section E of Chapter 3). This will enable the local bodies to assess their own performance in a comparative manner.

**Box 4.2. A specialist urban FI to support institutional reform: Tamil Nadu Urban Development Fund**

The Municipal Urban Development Fund (MUDF) in Tamil Nadu, which was established in 1987 with the assistance of the World Bank under the Tamil Nadu Urban Development Project (TNUDP), was converted to a new trust fund called the Tamil Nadu Urban Development Fund (TNUDF). The initial capital of the fund consists of MUDF's assets and 51 percent contribution by the Financial Institutions: ICICI, HDFC, and IL&FS. The management of the fund is with an asset management company, (a private fund manager) within a lending strategy and policy determined by the Board of Trustees. It also manages a Grant Fund of Rs 300 million on behalf of the Government of Tamil Nadu.

The Fund aims to: work with the local authorities to bring a commercial orientation to projects; facilitate private sector participation in urban infrastructure; improve financial management of urban local bodies; and assist local authorities in accessing the capital markets. The Grant Fund is for poverty alleviation programs; technical assistance for project preparation and improvement of financial and operational management of municipalities. The disbursements from the Grant Fund will be subject to stringent criteria and guidelines aimed at ensuring the fiscal discipline of borrowing authorities.

### **Affordable tariffs and transparent subsidies**

4.25 It has been common in the past to justify low tariffs for UWSS on the grounds of a lack of affordability by the poor. However, it is paradoxical that these services often do not reach the poor at all. In considering tariffs, it is necessary to distinguish between the consumption and infrastructure charges. It is possible to ensure affordable access through life line blocks at affordable rates. However, this first necessitates that the poor communities have effective access to municipal services. To ensure this, affordable infrastructure and connection charges for utility networks within slum settlements are necessary. While it has been common to provide lower service standards through shared services such as standposts and common toilets, it is found that willingness to pay tends to be higher for individual services at adequate standards.

4.26 It is also possible to enhance affordability through community credit systems which can help to extend the time period for payments. It is, however, likely that some subsidies will remain necessary. Such subsidies should ideally be internalized at the city level or linked to the available programs of the state and central governments. They must also be fixed transparently in relation to the overall magnitude of the disadvantaged population in the city.

4.27 In order to make this process transparent a special fund may be set up which may be used with performance incentives for slum communities to lower the costs of settlement level utility

networks. It would also be useful to identify other sources outside of local budgets such as the local corporate sector and other government programs, to maximize the contribution to such a fund.

4.28 In summary, the important measures include:

- explicit subsidies as necessary for infrastructure and connection charges to ensure access to municipal services;
- measures such as a tiered pricing structure to ensure life line blocks at affordable price levels;
- development and use of community credit systems to extend the time period for payment of infrastructure and connection charges;
- developing partnerships with the corporate sector which can contribute through both financial and management assistance (see Box 3.2 on slum networking in Ahmedabad); and
- creation of a slum networking fund at the city level which combines subsidies from different sources, with performance rule-based access through transparent procedures for providing subsidies to individual slum communities.

## **B. DEVELOPING CAPITAL MARKET ACCESS**

4.29 India's financial sector reforms coupled with the UWSS sector's large investment gaps indicate the potential for enhancing the access of this sector to the emerging capital markets. This necessitates measures to position the sector to maximize the benefits of financial sector development for enhancing resources and improving sector efficiency. Capital market access is envisaged through two alternative routes: direct market access, and market-based financial intermediation. This will need to be supported by development of a municipal bond system, assistance to municipal authorities for project development in a commercial format and providing sustainable credit enhancement opportunities.

### **Direct market access**

4.30 Agencies and institutions with responsibility for UWSS should be able to borrow directly from the market for new investments through issuance of bonds. The advantage of this route over accessing capital markets through financial intermediaries is that the impact of market rigor in improving service efficiency will be more direct. Thus, it will provide incentives and motivation for greater financial discipline and reforms among the borrowing entities. Further, for entities which are perceived as good credit risks by the market, the borrowing costs will be lower as the intermediation spreads are avoided. As the capital market develops an appetite for the sector the issuers will also have greater freedom in choosing the timing of their investments. On the whole, this route seems to be in keeping with world-wide trends in both decentralization and disintermediation, due to increased information, better integration of capital markets and increased choices for individual investors to place their capital directly.

4.31 **Potential borrowers for direct access.** Potential direct access borrowers will include: municipal authorities or enterprises; other utilities at the regional, state or metro levels, or

independent project/service companies in the private or joint sector; and regional pools created by several local or other service delivery authorities. Direct access to capital markets for public service delivery agencies may be developed through a municipal bond system. In cases where the delivery has been transferred to a corporatized entity, it is likely that their borrowing will be as per any normal borrowing by other companies in the economy. However, any tax or other fiscal benefits available to the sector must be linked to the purpose of borrowing and not by the nature of issuing authority. This has been the recent practice in India and must be continued.

**4.32 Developing a municipal bond system.** In view of the constraints listed earlier, some form of innovative debt structuring will be necessary in the initial years even for credit worthy municipalities. This may include development of a municipal bond system. Some of the cities in India have already begun to explore the potential of this route by getting potential bond issues rated by credit rating agencies (see Box 4.3). The municipal bond system in the US provides some lessons for India (see Annex 2). While the US experience is very old and set within a context of far greater autonomy for local bodies, the recent trend in decentralization in India and the enthusiastic interest of several Indian local authorities in municipal bonds suggests its relevance.

**Box 4.3. Credit rating of municipal bonds in India**

The credit rating of municipal bonds in India is a recent phenomenon. Credit Rating and Investment Services of India Ltd. (CRISIL), for the first time, rated the proposed Rs. 1,000 million general obligation bond issue of Ahmedabad Municipal Corporation in February 1996 at A+. It has also rated Brihanmumbai (Bombay) Municipal Corporation's proposed Rs. 250 million bond issue with the rating AA-. CARE, another Mumbai-based credit rating agency, has given a rating of 'AA' to the proposed Rs. 2000 million bond issue of Pune Municipal Corporation. The first rating of Ahmedabad Municipal Corporation has provided the impetus to this route. Another 10 to 15 cities are in the process of getting their potential bonds rated.

Some of the rating agencies in India have developed the methodology for rating these bonds, supported under the Indo-USAID project on Financial Institutions Reforms and Expansion (FIRE). The methodology includes aspects related to financial health of the local authority, its management capacity and efficiency, service effectiveness, the city's economic base as well as the political risks. This comprehensive approach will help to generate awareness at the local level about an agency's own performance and its influence on its borrowing costs in the market. Concerns related to the accounting systems and management efficiency have already begun to emerge from such analysis. Through such an approach it will be possible for a local authority to reap benefits from its improved performance.

**4.33 Regulatory framework for municipal bonds.** Development of a municipal bond system in India needs to be set within a proper regulatory system. To reduce the dependence of municipal authorities on the state governments, and to de-link local borrowing from a perceived bail out by the state governments, the regulatory role for municipal bonds should be vested with a market linked agency such as the Securities and Exchange Board of India (SEBI). The role of state government, however, would still remain important in monitoring compliance with the new provisions in municipal legislation as suggested below. A simple system of three rules is recommended to ensure market discipline while ensuring adequate administrative controls. These are:

- *Purpose of borrowing and five year capital investment planning:* limit the purpose of market borrowing to meet the municipal obligatory functions and other commercial investments to support them based on a multi-year investment plan for different local

needs such as water, sewerage, roads and other facilities. The capital investment plan should be locally approved and audited/certified by independent consultants (see Box 4. for the experience of the Tamil Nadu Urban Development Fund).

- *Debt cap:* impose a debt cap on municipal borrowing specified in relation to the projected debt service coverage ratios for the total municipal borrowing, including the outstanding debt and all projected debt as per the approved and certified five year capital investment plan.
- *Compulsory credit rating and disclosure requirements:* stringent disclosure requirements for municipal bonds and investment grade credit rating for any municipal issues need to be made mandatory under the municipal legislation. These should be made applicable regardless of the tenor and mode of issuance (i.e. private placement versus a public offer).<sup>38</sup>

### **New forms of financial intermediation**

4.34 It is likely that a large number of Indian municipal authorities and other public enterprises will not be able to access the market on their own for a long time. In order to enhance their access to greater financial resources, it will be necessary to develop new forms of financial intermediation. In using this route, financial intermediaries access the market directly and use these proceeds to either purchase the bonds of local municipal authorities and UWSS entities or to provide loans to local borrowers.

4.35 In the past this has largely meant some form of municipal development funds. Throughout the world, experience with most government-run municipal development funds is rather poor. However, in cases where commercial financial institutions have been involved, the experience has been better (see Box 4.4). The main lessons from the available experience show a need for: municipal or other delivery agencies to have predictable and adequate revenue streams; involving commercial financing institutions through appropriate refinancing, if necessary; operational independence of the financial intermediary from political interference in lending policies and day-to-day management which will promote more rigorous project appraisal; the financial intermediary to dynamically respond to the changes in the overall financial sector; and financial intermediaries to be more market oriented by mobilizing an increasingly larger proportion of their resources from the markets.

4.36 Based on the above, the main aim of the financial intermediation route should be to move towards market rigor and help in promoting credit histories, with which the direct access route will become feasible for more local issuers in the future. In the interim, though financial intermediaries add intermediation costs for the final borrowers, they will also most likely have a wider market access at lower costs.

4.37 These new forms of financial intermediation require management structures which differ from the typical municipal development funds or fully government-owned development finance institutions with easy access to government funds. A critical requirement in their functioning

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<sup>38</sup> For example, "the Justice Dhanuka Committee, set up to review the securities related Acts and regulations, has made a recommendation which will help to bring 'private placements' under the purview of regulatory bodies" (Economic Times, news item, June 29, 1997).

will be rigorous appraisal mechanisms which will ensure viability and bankability of infrastructure projects financed by them. Their procedures should be such that they provide incentives to the service delivery agencies to enhance efficiency and introduce the necessary reforms. They must also maintain a good credit rating themselves in order to be able to borrow from the market directly at competitive rates.

**Box 4.4. Using a financial intermediary to catalyze institutional reforms:  
FINDETER, Columbia**

FINDETER, formed in 1989 by transforming an earlier municipal development fund, is owned by the Ministry of Finance and regional governments. It operates through the commercial banking sector by refinancing their loans to municipal authorities for projects appraised and sanctioned by FINDETER. FINDETER lends at a variable rate pegged 2.5 percent above the market average rate for fixed term deposits and charges a 1 percent up-front fee. On-lending is within a band with a 2.5 percent cap on the spread. Banks retain the full credit risk. FINDETER also has direct recourse to the municipality, if required. FINDETER's appraisal acts almost as credit rating. Local revenues are pledged as security for the municipal borrowing with an escrow account arrangement. FINDETER also operates a grant program for water and education, though this is handled separately from loan accounts. FINDETER also has a policy role and promotes institutional reform.

FINDETER has had significant impact on the way investments are planned and managed "by taking the clients through the steps of doing a financial forecast, comparing design variants, procuring inputs competitively and organizing project records. In addition, it has helped many municipalities develop banking relationships and a credit history". Its institutional impact has been far more effective when there has been a local thrust for reform. In the changing financial sector situation in Columbia and growth in municipal bond system, FINDETER will need to reposition itself.

Source: Alvarado and Gouarne (1994).

4.38 A variety of financial intermediaries already exist in India. To enable greater availability of funds for urban infrastructure through more market-oriented financial intermediaries, three approaches are suggested: reorienting existing urban sector DFIs; expanding the pool of lenders for urban infrastructure; and developing new market-oriented specialist DFIs. These are discussed below.

4.39 *Reorienting existing urban sector DFIs.* Only a limited number of DFIs operate in the urban sector at present. At the national level, it is the Housing and Urban Development Corporation (HUDCO). Some of the states also have their own FIs. While HUDCO has started to mobilize additional resources from the capital market, the state FIs have been only routing agencies, without adequate emphasis on project appraisal. A few infrastructure finance corporations have been set up under the central government's Mega-City Scheme, which emphasizes leveraging of plan allocations. None of these have so far attempted to tap the capital market directly. Thus, while the state level institutions in principle could provide competition, in reality they introduce distortion as they do not operate on market principles. To promote greater market orientation in their operations, the existing FIs should be restructured, if possible, with private sector participation. In cases where a number of FIs exist within a state these may need to be consolidated first and then restructured. Their area of operation can gradually be expanded beyond state boundaries.

4.40 *Expanding the pool of lenders for urban infrastructure.* A second approach recommended is to enable and induce general finance institutions, like the commercial and co-

operative banks and other DFIs (e.g., IDBI, ICICI and IFCI) to include UWSS projects in their portfolios. This would provide more choices to local borrower entities. To support this, refinance facilities for a limited time period for UWSS lending to these institutions will be helpful. For example, FINDETER in Columbia supported commercial bank lending to the municipal sector through such a refinance facility (refer Box 4.4).

4.41 *Developing new market-oriented specialist FIs.* The experience in the housing sector suggests that in addition to the above reforms, specialist agencies are probably essential, as urban infrastructure is not likely to become a priority for other DFIs and banks until the market image of the sector improves. Specialist FIs which focus on the urban sector, in conjunction with institutional reforms, will help to accelerate the move towards making the sector bankable. It is, however, imperative that the new FIs are set up in a manner which will ensure greater market orientation with a focus on sector development (refer Box 4.5). Some essential characteristics of a new market oriented financial intermediary are:

- rigorous project appraisal with mandatory performance requirements;
- promotion of innovative project structuring arrangements in a commercial format;
- mobilization over time, of an increasingly greater proportion of resources from the capital markets without any subsidized government support, including through securitization of pooled infrastructure assets;
- introduction of new financial products which cater to the specific needs of the infrastructure sector, such as takeout financing and mezzanine debt, as well as financial services such as investment banking for municipal bonds;
- independent and professional management; and
- majority ownership by the private sector or financial institutions to ensure operational independence.

4.42 Over time, based on the experience of these FIs, as private investors are attracted to the sector to set up special urban infrastructure funds, government ownership may be divested. At the same time, the UWSS delivery institutions will become stronger and more credit worthy, and so be able to both access the markets directly and borrow from private funds on market terms.

#### **Support measures for capital market access**

4.43 With the financial sector reforms, possibilities for accessing capital markets are likely to increase considerably. This will require a variety of support measures for the UWSS sector, namely: support for the development of a municipal bond system; for project development in a commercial format; and for credit enhancement and insurance. These are discussed below.

4.44 **Support for development of a municipal bond system.** Most municipal authorities will require support through measures such as: local capacity building for project development; improved accounting and auditing systems; conditional fiscal incentives; rationalization of state-local fiscal relationships to increase predictability of resource transfers; and, financial empowerment of local governments through appropriate new taxes and charges. New measures

such as impact fees and other land based measures, for example, are being considered by some municipal corporations.

4.45 Fiscal incentives for municipal bonds may also be needed. The positive externalities of UWSS investments are likely to be very large and often not possible to capture through direct charges. The implicit expenditure on tax losses can easily be leveraged at least four to five times, as is evident from the US experience.

4.46 The constraints posed by the lack of a well developed bond market in India suggest the need for measures such as a market making facility with a liquidity or backstop facility to enhance the possibility of secondary market development. Financial products such as takeout financing would enhance the tenor of bonds. Changes are also necessary in investment guidelines of long term funds to permit investments in municipal bonds with investible grade ratings.

4.47 **Project development in a commercial format.** Considerable efforts will be required to develop projects in commercial formats so that it becomes possible to access the markets directly for urban infrastructure investments. At present the project development and management capability of local bodies is limited, with cost and time overruns on projects being endemic. Almost no efforts are made to assess, mitigate and allocate the development and construction phase risks in an appropriate manner. In order to attract commercial resources to the sector, project development and management will need to be done through a proper risk assessment and allocation strategy.

4.48 Attempts at such direct market borrowing for UWSS with appropriate project structures are evident from the experience of Infrastructure Leasing and Financial Services (IL&FS) in Tiruppur and Ahmedabad (see Box 4.5). Similar efforts are also emerging in other cities such as Pune and Vijaiwada. This limited experience suggests the need for extensive efforts for project development. Experience and expertise in these areas is rather limited and adequate technical assistance and capacity building support appear necessary. Efforts will be required to involve the investment banking community and financial and legal advisory services to work in this sector through support measures. In addition, overall technical capacity for project development consultancy will also need to be built up.

4.49 In the initial years it will be necessary to support these processes through public resources. Over time, as local capacity for detailed project development grows, the need for explicit external support will decline. In the road sector this need has been supported by capitalizing national and state level independent agencies to undertake project development. Given the diversity of agencies dealing with UWSS, however, it may be better to set up a project development fund to absorb the development stage risks. Such project development support may be treated as a grant but turned into a loan, to be incorporated as a part of total project costs in the case of successful projects. Such efforts can happen both as a part of the state sector strategy, as well as through specific provisions for project development from the Plan funds.

4.50 **Credit enhancement and insurance.** Introduction of market based financing systems would also necessitate replacement of the state government guarantees (which are used for most

borrowing for urban infrastructure at present) with more sustainable and commercial alternatives. While purely commercial formats with project recourse borrowing may emerge over time, it will be necessary in the interim to also have access to financial guarantees on a commercial basis. This will be especially necessary for the agencies in the urban sector due to their generally poor market image and a lack of information about these agencies among the investors and other participants in the financial sector. In general, given the past patterns of funding, there is no track record for these agencies to assess their performance.

4.51 In India, no sustainable and effective credit enhancement mechanisms exist at present. While Bank Letters of Credit and limited guarantees from financial institutions are available, under the new norms for capital adequacy it will be difficult to provide such guarantees on a sustainable basis. With the expected reforms in the insurance sector, it is possible that specialized financial guarantees (or bond insurance companies) may become feasible in the future. It may be useful to explore the possibilities of supporting some of the existing financial institutions to start such operations with future subsidiaries or new companies in mind.

**Box 4.5. Project development for direct market borrowing:**

**The Case of Infrastructure Leasing and Financial Services (IL&FS), Ltd.**

IL&FS was set up in 1987 with equity participation by the Reserve Bank of India (India's Central Bank), Unit Trust of India and Housing Development and Finance Corporation. It is engaged in lease and loan financing as well as merchant banking and other financial activities. "One of IL&FS's primary mandates was to establish itself as a premier institution to structure and, finance, both directly and through syndication, private infrastructure projects."

Over the last few years, IL&FS has been engaged in developing project frameworks for commercialization with associated legal frameworks. In the area of UWSS it operates essentially as an investment banker with project development support. Thus, it internalizes multiple roles in the project development process, including initial conceptualization, project development, financing implementation and management. Its first major UWSS project (in Tiruppur) is in the last stage of bidding. For another project of UWSS (in Ahmedabad) it has evolved a financial package which combines market borrowing through a municipal bond. Its projects are largely taken up within a public private partnership framework. Project development by IL&FS involves assessing commercial viability, conformity to public standards, ensuring transparency in procurement and an appropriate contractual framework to mitigate and allocate risks in construction and operations.

Source: IL&FS and World Bank (1996a).

4.52 Another option would be to develop a separate guarantee institution and/or an insurance facility, which would operate on a commercial basis. This may be done either by supporting a new institution with capital, as is being planned in Thailand,<sup>39</sup> or enabling an existing institution (development finance institution or an insurance company) to introduce such a facility.<sup>40</sup> The key to developing this successfully would be to maintain a high level of credit analysis, ensure that the guarantee and/or insurance operations remain viable, and ensure that the agency can consistently obtain a high credit rating for itself.

<sup>39</sup> The Thai Guarantee facility is planned as a public-private corporation with private management. It will provide guarantees for loans made by private financial institutions to municipalities and private operators of urban environmental infrastructure. The guarantee will help these agencies to secure longer term loans and establish credit histories with which to be able to access the market later. This will help leverage the resources by more than ten times (World Bank, 1994, p.100).

<sup>40</sup> ICICI has recently joined up with CADMAC of the USA to set up a financial guarantee company as a subsidiary to the ICICI. It may be possible to have such a company also focus on urban infrastructure (Mukherjee, 1997).

4.53 The specialized financial intermediary proposed by the Rakesh Mohan Committee for Commercialization of Infrastructure, which has now been incorporated as Infrastructure Development Finance Corporation (IDFC), was also visualized to act as “a guarantor for investments made by credible financial intermediaries as well as large project entities themselves” (EGCIP, 1997). However, it appears that rather than providing financial guarantees itself, IDFC will focus on providing credit enhancement through specific products such as mezzanine debt and take-out financing as a part of its urban finance portfolio. HUDCO is also considering the possibilities of using mezzanine debt structures to provide enhancement to municipal bond issues.

### C. LEVERAGING LIMITED GOVERNMENTAL RESOURCES

4.54 The thrust of the new financing arrangement very clearly suggests that a reorientation is necessary in the use of limited public resources. During the Eighth Plan, the total Plan allocations were around Rs. 60 billion. The share of the sector, at about 1.5 percent of total plan allocations, is not likely to increase any further. During the Ninth Plan this may amount to Rs. 117 billion at 1996-97 prices. In addition, with the gradual acceptance of recommendations of the state finance commissions in most states, there will be increasing rationalization and predictability of state-to-local transfers with a possible increase of the share of local bodies. For example, in the state of Karnataka, the transfers to urban local bodies will be increased from 2.6 to 5.4 percent of the state revenues as per the State Finance Commission recommendations which have been accepted by the state government (GOK, 1996). Despite such increases, there is concern as to whether the additional resources will be adequate in relation to the functions being allocated to the local bodies. While these larger issues are beyond the scope of this paper, the possible ways of leveraging the limited plan funds are discussed below:

- special grants or incentive funds to induce good municipal practice such as long range planning, consumer consultation and inter-municipal consultation. Such a fund may be operated directly or through a market oriented FI to create more commercially-viable demand for its lending and in turn build municipal capacity;
- linking Plan funds or other grants to incentives to bring in the necessary tariff reforms at the local level over a defined time frame;
- a project development fund to support development of projects in a commercial format—the government may be thus able to absorb the development stage risks. Such project development support may be treated as a grant but turned into a loan, to be incorporated as a part of total project costs in the case of successful projects;
- credit enhancement opportunities for direct access, such as creation of or contribution to a commercially operated debt service reserve fund to enhance the credit quality of bond issues, or contributing to the equity of a commercial guarantee facility; and
- support the development of a market-oriented financial intermediary by contributing to its equity or capital.

4.55 A conscious attempt at evolving a state level framework for such a reorientation in the use of public resources is essential. This may be done through appropriate schemes in the Ninth Plan and by evolving state level urban water and sanitation strategies.

## 5. SUMMARY AND GETTING STARTED

5.1 This chapter summarizes the main findings and recommendations of the report. It clarifies the roles of government and other agents in implementing the reforms, and sets out a plan to start the reform process.

5.2 The consensus in India is that the traditional approach to UWSS provision is not working. The problems in the sector are wide ranging and relate both to the institutional and financing arrangements. The results of this are evident in terms of poor quality of services and persistent inefficiencies in the system. Radical reform is needed if adequate and safe water and sanitation services are to be provided in urban India.

5.3 The emphasis in the recommended strategy is on improving the system of incentives, through institutional reforms to create democratic governance, and efficient ownership and management structures for UWSS service providers, and through developing market-oriented financing systems. This will lead to improved incentives for individuals within the delivery agencies, which will permit and encourage operational efficiency and effectiveness. It is the poor incentives in the current systems which underlie the paradox that the deficiencies of the UWSS sector are well known, but the problems nevertheless persist.

### Summary

5.4 The key elements of the strategy are: *democratic decentralization* through municipalization of responsibility for UWSS service, including promoting inter-municipal coordination and an enhanced role for civil society associations; *commercialization and private participation* in service provision, both for municipal and multi-municipal schemes; and *market oriented financial systems*, including developing of direct access to capital markets through bond issues, new forms of financial intermediation and leveraging public resources. The necessary reforms are grouped under three categories: municipal reform agenda; state institutional restructuring; and financial.

### Municipal reform agenda

5.5 The cornerstone of institutional reform is decentralization of responsibility for UWSS provision to municipalities, in line with the 74th Constitutional Amendment. Decisions over UWSS provision should be made locally and democratically, making municipalities the logical agent for UWSS customers.

5.6 Democratic decentralization must be accompanied with reforms to boost municipal capacity, and to ensure municipalities act in their citizens' best interests. These will include: devolution of resources and decision-making powers to municipalities, as

envisaged by the 74<sup>th</sup> Amendment; development of good practice in municipalities, especially in the areas of accounting, auditing and procurement; and professionalizing municipal

management, through appointment of specialized managers with requisite skills, who should not be frequently rotated.

5.7 Further reforms will be necessary to ensure responsiveness to customers, encourage the development and involvement of civil society, and improve service to disadvantaged groups. These should include: first, requiring municipalities to consult with customers, including providing relevant information in an easy to understand format, and taking the results of consultation into account in planning; second, promoting the involvement of civil society and consumer organizations through providing them with information, involving them in planning, and providing other support where appropriate; and third, a variety of measures to ensure good service to disadvantaged groups, especially those living in slums. The latter will include explicit duties to provide universal service within defined areas (concession zones), consultation and involvement of disadvantaged groups in planning service provision, integrating planning for slum areas into planning for the rest of the city, rationalizing tariff structures, and providing for explicit and transparent subsidies.

5.8 The link between customer demands and UWSS providers will be created through democratic decentralization and customer consultation. UWSS providers then need the incentive, the freedom and the resources to respond effectively and efficiently to these demands. The following reforms will be needed: commercialization of existing state- and municipal-owned UWSS providers—managers should be given the freedom to manage, be required to achieve financial viability, and to have proper accounting systems; municipalities should generally discharge their UWSS responsibility by contracting with a specialist, commercialized UWSS provider; and progressive involvement of the private sector, through contracting out services, having the private sector build and operate new infrastructure, and selling shares in state-owned UWSS providers.

### **State-level institutional restructuring**

5.9 Implementing this strategy will require radical reform of existing state-owned UWSS entities. The reforms will vary from state to state, but will include unbundling the state entity into separate functions (such as bulk supply, distribution operations and technical services), and separating policy and regulatory responsibilities from service provision. The disaggregated entities should be corporatized. In time, the private sector should be involved, for example through management contracts and sale of shares.

5.10 The reforms should also require municipalities to cooperate, where this will promote efficiency. This is especially likely to be necessary where UWSS services are most efficiently supplied by a single scheme serving several municipalities. For this purpose, states governments should foster development of District and Metropolitan Area Planning Committees as required by the 74<sup>th</sup> Amendment.

5.11 Regulation may be carried out by various levels of government. Democratic decentralization requires that municipalities be the primary locus of decisions on tariffs and service standards. However, given the complexity and need for specialist skills in making such regulatory decisions, state governments may choose to create a state regulatory agency which

could supervise and assist municipal decisions. States should certainly create a comparative competition facility. This facility would gather and disseminate information comparing the performance of various UWSS providers in the state and elsewhere.

5.12 Finally, the reforms need to be implemented flexibly, to accommodate local conditions and the differences between municipalities of different sizes and capacity. In general, large and competent cities should develop their own reform programs in line with this strategy, and in consultation with their state government. Medium cities will need assistance from state governments, but this assistance should be aimed at developing their ability to act independently and discharge their new responsibilities for UWSS. However small municipalities and those lacking in capacity will need considerably more guidance and assistance from state governments. Possible state government initiatives include requiring the state UWSS entity to offer all smaller municipalities a fair contract for supply of UWSS services, or requiring small municipalities to combine with their neighbors for UWSS purposes.

### **Financial reform**

5.13 The sector's investment needs far exceed the financial resources available from central and state governments, traditionally the sector's financiers. Filling this gap will require major reforms on both the demand side, to increase the financial viability and bankability of the sector, and on the supply side to greatly extend the range of financing options. Financing reforms must be market-oriented. This is not just because the capital markets are the only possible source for the volume of investment funds required, but also because more market-oriented financing will increase the efficiency with which capital is used, and provide incentives for UWSS operators to improve their performance overall.

5.14 Tariff rationalization is a pre-requisite to sector financial viability and to enabling increased financial flows to the sector. Tariffs should reflect costs, and any subsidies should be well-targeted and explicit. Tariff increases should be undertaken periodically, and be indexed to inflation. At the same time, improvements in operating efficiency are essential and should result from the institutional reforms outlined above. UWSS providers should not simply be allowed to pass on their inefficiencies to consumers in the form of higher tariffs.

5.15 If the sector is to access new finance, project preparation and appraisal skills need to improve. The institutional reforms to boost municipal capacity, commercialize UWSS providers, and involve the private sector will assist here. Further efforts are likely to be needed from state governments, and financial intermediaries involved in the sector.

5.16 UWSS entities will be able to access new capital either directly from the financial market, through issuing bonds, or through financial intermediaries such as banks, and specialist institutions. In many ways, direct market access is the preferable route in the long term. Direct access cuts the costs of intermediation, and also provides the most direct market discipline on the borrower. The international experience shows that the development of a municipal bond market for financing municipal infrastructure is one of the most promising routes to increasing capital availability to the sector. Already, several Indian municipalities have acquired credit-ratings for the purpose of issuing such bonds.

5.17 Development of an effective municipal bond market will be assisted by: establishing clear and independent regulation of the market by a body such as SEBI. The regulations should limit the risk of municipal over-exposure and default. At the same time, it should be clear that the bonds are not guaranteed by central or state government; developing credit-enhancement mechanisms, such as bond insurance, bond guarantees, pooling of municipalities, over-collateralization, etc.; and granting tax exemptions to bonds issued to finance water and sanitation infrastructure.

5.18 Many municipalities and UWSS providers will not be able to access capital markets directly for some time. New forms of market-oriented financial intermediation are needed to serve these borrowers. Given the sector's poor image, this may need to start with provision of finance by existing urban sector institutions (such as HUDCO), development finance institutions (e.g., IDBI, ICICI and IFCI), and new special purpose institutions such as the Tamil Nadu Urban Development Fund. To promote the transition toward greater market orientation, it will be essential for these intermediaries to appraise projects on a fully commercial basis and for the private sector to participate in the ownership and management of these institutions. In time, as the sector establishes a credit record, general financial institutions such as the commercial and co-operative banks and private finance funds can be expected to participate in lending.

5.19 Finally, the limited central and state government funds which are available to the sector need to be leveraged to achieve maximum benefit. Government financing should be progressively redirected into mechanisms such as: special grants or incentive funds to induce good municipal practice such as tariff reform, long range planning, consumer consultation and inter-municipal consultation; project development funds to support development of projects in a commercial format; and market oriented financial intermediaries and credit enhancement institutions.

## A. IMPLEMENTING THE STRATEGY

5.20 Given the wide range of local requirements and opportunities in India, a standardized approach to implementation of the recommended strategy is not appropriate. A three-pronged approach is recommended to promote nation-wide reform while allowing and encouraging local flexibility. This involves: *systemic changes* - changes which are essential to operationalize the incentive-based approach; *innovations through windows of opportunity*—these are locally led incremental and opportunistic innovations which will need to be induced and supported where conditions are suitable; and *demand-led capacity building*.

### **Systemic changes for an incentive based strategy**

5.21 Five systemic changes are identified to set the new structure for the sector. These changes will liberate local initiative, while also ensuring that local incentives stay aligned with the common good. These five changes are:

- devolution of responsibilities to municipal authorities, along with ensuring key good practices such as accounting separation, long term plans and customer consultation, are mandated by law;

- reform of the state utility boards by separating the policy and regulatory functions from operations, disaggregation of operations into functional areas and commercialization of disaggregated entities;
- rationalization of tariff structures through necessary legislative changes, and developing a system of incentives and sanctions at state level to encourage reform;
- reform of the financing systems with a greater market orientation by enabling direct market access for local authorities and enterprises within a market regulatory framework, and encouraging new forms of financial intermediation, supported by reorienting the use of public resources for greater leverage; and
- introduction of a comparative competition facility to enable assessment of utility performance. This will be useful both as a management tool and as an accountability mechanism.

### **Innovations through windows of opportunity**

5.22 The second aspect of the strategy is promotion and support to incremental and opportunistic innovations within the framework of systemic changes. This may begin with smaller and more doable improvements. It will depend on local enthusiasm, commitment and capacity. The impetus may come from any level: a state government, a local authority, other local stakeholders and community groups, a market-oriented financial intermediary, or private sector participants. The type of innovations which need to be supported include:

- private sector participation - including service and management contracts, BOT contracts and concessions in selected high potential areas;
- new ways of providing and improving access for disadvantaged groups; and
- operational changes linked to enhancing the efficiency and financial viability of UWSS entities, especially for reduction of unaccounted for water, improving billing and collection efficiency, etc.

5.23 The role of central and state governments will be both to induce such innovations by disseminating information of international best practices, and to support the emerging efforts through positive support and appropriate incentives to non-governmental and private sector actors.

### **Demand led capacity building**

5.24 As the reform process unfolds, technical assistance will be required to develop local capacity for a variety of activities, especially to manage or contract out UWSS services, and to professionalize municipal management. This assistance should respond to local demand which, in turn, will be developed by the opportunities created by the systemic changes and from the greater awareness generated by dissemination of best practices.

## B. GETTING STARTED

5.25 Table 5.1 (detailed matrix of recommendations) at the end of this section outlines the proposed action plan. Part I of the Table sets out the core agenda; Part II details the implementation plan for municipal reforms, state reforms and regulation, and financial reforms. Certain actions, as indicated in the Table, need to be implemented urgently, and others over the short to medium term, but all actions will require participation of a wide range of institutions. This section focuses on the essential actions of the various public and non-public organizations which will be required to get the strategy started.

### Central Government

5.26 The role of central government will largely be to provide an enabling environment for reforms at lower levels, and provide leadership and encouragement in the reform process. Specific high priority actions include:

#### *Institutional*

- encouraging state governments to initiate strategies as per the systemic changes outlined above;
- developing models for state legislation and UWSS provision contracts - this may be best done in collaboration with a select group of states and municipalities;
- facilitating the professionalization of municipal management, including reform of civil service procedures to allow municipalities to engage municipal/UWSS specialists on longer term contracts;
- creating a comparative competition facility, to start the process of collecting comparable data on Indian and overseas municipalities, and sharing innovations and best practice; and
- encouraging and assisting select states and large municipalities to start the reform process, as demonstration projects. These demonstration projects should focus on private sector participation, customer consultation, and innovative ways to ensure service to disadvantaged groups.

#### *Financial*

- encouraging the development of a municipal and infrastructure bond market, through creation of an independent regulatory framework (enforced by SEBI or a similar institution), and providing tax benefits to such bonds;
- reorienting national financial intermediaries toward market oriented lending to the UWSS sector. This should include private participation in the ownership and management of the institutions, and commercial project appraisal; and
- leveraging plan funds to the sector by progressively re-directing them toward mechanisms such as: incentive funds to induce reform; project development funds to support development of projects in a commercial format; and market oriented financial institutions.

5.27 It may be useful to make a single agency in the central government responsible for developing and coordinating these reforms. Such an agency could in time evolve into the central comparative competition facility envisaged in the strategy.

### **State governments**

5.28 Water is a state subject under the Constitution. The task of initiating reform will fall largely to state governments. Specific and high priority actions include:

- reforming state laws governing water and municipal government in the state, to implement the 74<sup>th</sup> Amendment, devolving UWSS responsibility to municipalities, and requiring municipalities to discharge these responsibilities, where this has not already been done;
- implementing the above legal reforms, in particular by devolving resources to municipalities, assisting the development of District Planning committees, creating the capacity to monitor and assist municipalities in their new duties where necessary, and setting up a state comparative competition facility, which may also be a state UWSS regulator; and
- reforming existing state UWSS providers such as the water boards and PHEDs by disaggregating them by function, separating service provision from regulatory and policy responsibilities, commercializing the service provision entities, and involving the private sector in management of the new commercialized entities.

5.29 In addition, like central government, state governments should reorient Plan financing and existing state financial intermediaries toward leveraging reform and developing market-based lending to the sector. State governments also need to work with selected municipalities to encourage demonstration projects in the state.

5.30 States will need to develop a consensus on integrated UWSS reform strategies, similar to the power sector reforms developed and now being implemented in many states. These strategies will ensure coordination between related reforms such as commercialization of existing state providers, devolution of responsibilities to municipalities, tariff rationalization in line with achieving financial viability, reorienting Plan financing and state financial intermediaries, and creation of regulatory and supervisory structures.

5.31 State strategies will need to address how municipalities of varying size and capacity should be treated. Generally for larger cities and those with higher capacity, states should encourage them to develop their own reforms. However, small and low capacity municipalities will need continued state involvement for some time to come. Options include assisting these smaller authorities to develop contracts with private contractors or the state UWSS provider. The reform of state water boards should be accompanied by careful identification of multi-municipal (or integrated) schemes. State governments will also need to assist in coordinating such schemes.

## **Municipal government**

5.32 Municipalities with existing administrative capacity will be able to take the lead in reform. For these municipalities, specific high priority actions include:

- working with state and central governments to ensure that the necessary reforms are implemented quickly, and in a way which reflects municipal needs;
- professionalizing municipal management through employing specialists on fixed or long-term contract;
- developing best practice procedures in areas such as accounting, auditing, procurement, tariff rationalization, customer consultation, and integrating service to disadvantaged groups with the mainstream of service delivery;
- putting UWSS service provision on a business-like footing through commercialization of any existing municipal UWSS provider, and developing an explicit contract with a UWSS provider for UWSS services within a defined concession zone; and
- involving the private sector in management of UWSS facilities or services.

## **Civil Society and other bodies**

5.33 Many other organizations will also contribute to the strategy. The following contributions will be particularly important:

- consumer and citizens groups need to be involved in the development of customer consultation mechanisms, and in the development of reforms at the municipal level;
- NGOs need to contribute to the development of new mechanisms and pilot projects to involve and serve disadvantaged groups;
- professional associations such as ICAI can contribute in developing and supporting good municipal practice, and training and certification programs for municipal and UWSS sector professionals;
- national and state-level financial intermediaries will be important in developing new financial products suitable to the urban infrastructure sector as well as inducing good municipal and utility practice by rigorous appraisal. They may also be asked to provide technical assistance to municipal authorities through special grant funds;
- international development institutions (such as the World Bank, DFID-UK and USAID, etc.) can contribute by supporting and financing:
  - demonstration projects, particularly in areas such as private sector participation, assistance to municipal water agencies and states implementing major reform programs, developing or refocusing sector financing institutions, and mainstreaming service to disadvantaged groups; and
  - technical assistance in areas such as development of model laws and contracts, improved municipal procedures, and comparative competition and regulation facilities; and

- participation of the private sector will be essential, both in developing policy (to ensure that it is investor friendly), and in initiating the involvement of private finance and management in the sector by working with municipalities and state UWSS providers.

The government at all levels needs to communicate its strategy to these groups, and encourage their involvement.

**Table 5.1. Detailed Matrix of Recommendations**

**Part I. Core Agenda**

<i>Recommendation</i>	<i>Responsibility</i>	<i>Time Frame</i>
<p><b>Objective:</b> The strategy is to change incentive structures so that organizations and people in the sector will deliver sustained, efficient service improvements to customers. To do this we propose that new rules for the game be set; the new framework allow and encourage local level innovations; and fostering a demand-led response for assistance, which will emerge once players have the motivation to improve performance.</p>		
<ul style="list-style-type: none"> <li>• <b>Devolve UWSS responsibilities to municipal authorities.</b> Mandate key good practices such as accounting separation, long term plans and consumer consultation</li> </ul>	State governments	short term
<ul style="list-style-type: none"> <li>• <b>Reform the state UWSS providers:</b> separate policy and regulatory functions from operations; disaggregate operations into functional areas; and commercialize/privatize entities</li> </ul>	State governments	short to medium term
<ul style="list-style-type: none"> <li>• <b>Rationalize tariff structures and tariff-setting procedures</b> through legislative changes and a system of incentives and sanctions</li> </ul>	State governments	urgent
<ul style="list-style-type: none"> <li>• <b>Reform financing systems</b> to enable direct financial market access for local authorities and enterprises, and new forms of financial intermediation; supported by leveraging local resources</li> </ul>	Central and state governments	short to medium term
<ul style="list-style-type: none"> <li>• <b>Create a comparative competition facility</b> to collect and share performance data of Indian and foreign UWSS agencies/utilities to enable assessment of UWSS agency performance and provide benchmarks for improvement.</li> </ul>	Central and state governments	medium term
<ul style="list-style-type: none"> <li>• <b>Implement local innovations,</b> including: involve the private sector in a variety of ways; develop new approaches to serving and involving disadvantaged groups; reform tariffs; increase efficiency, improve technical and operational practices; and access new sources of finance</li> </ul>	Municipalities, private sector, state governments, utilities, central governments, development agencies, community groups	medium term and continuous
<ul style="list-style-type: none"> <li>• <b>Demand led capacity building.</b> Provide technical assistance, in response to municipal and utility requests</li> </ul>	Private sector, state & central governments, development agencies	medium term and continuous

**Table 5.1 (cont.). Detailed Matrix of Recommendations  
Part II (cont.). Implementation Plan**

<i>Recommendation</i>	<i>Responsibility</i>	<i>Time Frame</i>
<p><b>A. Municipal Reform Agenda</b> <i>Objective:</i> Create legal and institutional structures which will encourage good practice at the local level. Allow for incremental opportunistic improvements within a framework which aligns organizational and individual incentives with the public interest</p>		
<p><b>A.1. Enabling Policies</b></p>		
<ul style="list-style-type: none"> <li>• Develop consensus on state water reform strategies</li> <li>• Prepare model laws and procedures for devolution</li> <li>• Pass state laws which devolve power over UWSS to municipalities, in line with 74<sup>th</sup> Amendment, (where this has not already been done) and implement institutions envisaged by the 74<sup>th</sup> Amendment, including financial reforms. Develop a state level strategy outlining measures for achieving this.</li> <li>• Reorienting the use of public resources for greater leveraging:</li> <li>• Develop plans for a project development fund</li> <li>• Develop a system of incentives and sanctions to induce good municipal practice</li> </ul>	<p>State governments</p> <p>Central government</p> <p>State governments</p> <p>State government</p> <p>State government, financial intermediary</p> <p>State government, financial intermediary</p>	<p>short term</p> <p>short term</p> <p>short to medium term</p> <p>urgent</p> <p>medium term</p> <p>urgent to short term</p>
<p><b>A.2. Democratic decentralization and municipal professionalization</b></p>		
<ul style="list-style-type: none"> <li>• Institute integrated municipal development planning, including capital investment plan</li> <li>• Reform procedures for accounting, auditing, procurement, etc.</li> <li>• Create cadre of skilled, specialist urban managers who will not be frequently rotated</li> <li>• Develop sample methods and procedures for all of above</li> </ul>	<p>Municipalities</p> <p>Municipalities</p> <p>Central, state and municipal governments</p> <p>Central and state governments</p>	<p>short to medium term</p> <p>urgent</p> <p>urgent to short term</p> <p>short to medium term</p>

**Table 5.1 (cont.). Detailed Matrix of Recommendations  
Part II (cont.). Implementation Plan**

<i>Recommendation</i>	<i>Responsibility</i>	<i>Time Frame</i>
<b>A.3. Commercialization and private sector participation</b>		
Assist municipalities to adopt an incremental, opportunistic strategy, starting with: <ul style="list-style-type: none"> <li>• corporatization of existing providers, and contracting out of UWSS responsibilities by municipalities; and</li> <li>• private participation in: financially viable areas; progressive municipalities - state governments and development agencies work with them to develop best practice; and easier types of PSP, such as, service and management contracts, and BOTs</li> </ul>	Central and State government, Municipalities, business and civic groups	short to medium term
Develop models - for example, procurement guidelines, model contracts, toolkits to help municipalities in a range of situations	Central and state government	short term
Pass enabling laws	Central and state governments	short term
<b>A.4. Customer responsiveness and role of civil society</b>		
Require customer consultation by state law - consultation means an active duty to seek views, and to take those views into account, not a passive duty to publish.	State government	urgent
Institute consultation through ward systems and other mechanisms, over customer priorities, and service level/tariff trade-offs	Municipalities	urgent
Develop and publish citizens' charters for water and sewerage services	State governments and municipal authorities	short to medium term
Support development and strengthening of civic-community groups	Central government, State government	short term

**Table 5.1 (cont.). Detailed Matrix of Recommendations  
Part II (cont.). Implementation Plan**

<i>Recommendation</i>	<i>Responsibility</i>	<i>Time Frame</i>
<p><b>B. State Level Reform and Regulation Agenda</b> <i>Objective:</i> Create legal and institutional structures which will encourage good practice at the local level. Allow for incremental opportunistic improvements within a framework which aligns organizational and individual incentives with the public interest</p>		
<p><b>B.1. State-level institutional restructuring and regulation</b></p>		
<p>Implement reforms of state water boards, public health engineering departments, and other entities, including disaggregation into discrete functional units, commercialization and partial or full privatization</p>	State governments	short to medium term
<p><b>B.2. Multi municipal schemes</b></p>		
<p>Implement institutions and procedures to develop and manage multi-municipality bulk schemes, such as Planning Committees and integrated competitive procurement</p>	State governments & municipalities	medium to long term
<p>Implement multi-municipal schemes that address the needs of small, medium, and large towns</p>	State governments & municipalities	medium to long term
<p><b>B.3. Better service for disadvantaged groups</b></p>		
<ul style="list-style-type: none"> <li>• Develop effective universal service obligation, and requirement to consult with disadvantaged groups</li> <li>• Implement participatory approaches to assess community preferences and willingness to pay. Provide services and explicit, transparent subsidies in line with consultations</li> <li>• Integrate planning for slum areas into mainstream of UWSS planning</li> <li>• Include provision for disadvantaged in PSP contracts</li> <li>• Assist in financing connections in disadvantaged areas, through development of community credit facilities and installment payments</li> </ul>	<p>State governments</p> <p>Municipalities</p> <p>Municipalities</p> <p>Municipalities</p> <p>Municipalities</p>	<p>urgent</p> <p>urgent to short term</p> <p>short term</p> <p>short to medium term</p> <p>short to medium term</p>

**Table 5.1 (cont.). Detailed Matrix of Recommendations  
Part II (cont.). Implementation Plan**

<i>Recommendation</i>	<i>Responsibility</i>	<i>Time Frame</i>
<b>B.4. Regulation and comparative competition</b>		
<ul style="list-style-type: none"> <li>• Develop models for regulation and comparative competition, including data definitions, analytic techniques</li> <li>• Supervise municipalities. Consider whether to establish a state UWSS regulator, to supplement regulation of UWSS providers by municipalities. Set up institution to collect and disseminate comparative information</li> <li>• Through consultation, establish desired package of service standards and tariff levels. Implement through contract with UWSS provider. Develop approaches which will inform the public and citizens groups, such as 'report cards' on service standards, and league tables</li> </ul>	<p>Central government</p> <p>State governments</p> <p>Municipalities</p>	<p>short to medium term</p> <p>medium term</p> <p>medium term</p>
<p><b>C. Financial reforms</b></p> <p><i>Objective:</i> Promote financial viability through tariff reforms and efficiency gains. Promote market-oriented financing systems to enhance the incentives for efficiency and financial viability as well as increase the capital available to financially viable entities in the sector.</p>		
<b>C.1. Tariff reforms</b>		
<ul style="list-style-type: none"> <li>• Develop models of rational tariff structures and procedures for Indian cities, and assist selected municipalities to reform</li> <li>• Develop state guidelines to move towards rational tariff structures as developed above.</li> <li>• Develop and implement a system of incentives and sanctions, for the state government as well as market oriented financial intermediaries to encourage municipalities to reform</li> <li>• Identify potential extra-budgetary sources for support to disadvantaged groups at the city level</li> <li>• Support urban NGOs and other interested financial intermediaries to develop community funds and savings and credit groups among low income communities</li> </ul>	<p>Selected state government, external agencies</p> <p>Selected state governments</p> <p>State government, Market financial intermediaries</p> <p>Municipal government, business</p> <p>State, Municipal govts. NGOs, Community groups, FIs</p>	<p>urgent</p> <p>urgent</p> <p>urgent to short term</p> <p>short term</p> <p>short term</p>

**Table 5.1 (cont.). Detailed Matrix of Recommendations  
Part II (cont.). Implementation Plan**

<i>Recommendation</i>	<i>Responsibility</i>	<i>Time Frame</i>
<b>C.2. Develop direct market access for finance</b>		
<ul style="list-style-type: none"> <li>• Set legal requirements for direct market access by municipal authorities or enterprises, including: a cap on total borrowing, credit rating and long term plans for market borrowing</li> </ul>	State governments, central government	medium term
<ul style="list-style-type: none"> <li>• Develop and implement a monitoring system for municipal debt</li> </ul>	State governments	medium term
<ul style="list-style-type: none"> <li>• Identify an appropriate authority to regulate market borrowing by municipal authorities and enterprises and develop detailed disclosure requirements</li> </ul>	Central government, SEBI	medium term
<ul style="list-style-type: none"> <li>• Develop structured municipal bond issues with willing and able local authorities</li> </ul>	Investment bankers, Financial intermediaries, External agencies	medium to long term
<ul style="list-style-type: none"> <li>• Support project development in a commercial format for municipalities and utilities to raise finance in the debt market directly</li> </ul>	Municipalities and utilities	short to medium term
<b>C.3. Developing sustainable credit enhancement and insurance opportunities</b>		
<ul style="list-style-type: none"> <li>• Explore the possibility of a commercial credit guarantee facility, either new or through an existing financial intermediary</li> </ul>	Central and state governments, IDFC, other national financial intermediaries	medium to long term
<ul style="list-style-type: none"> <li>• Develop state-level debt service reserve fund facility on a commercial basis</li> </ul>	State governments, financial intermediaries	medium to long term
<ul style="list-style-type: none"> <li>• Support financial institutions to develop new financial products for credit enhancement</li> </ul>	Financial intermediaries	medium term

**Table 5.1 (cont.). Detailed Matrix of Recommendations**

**Part II (cont.). Implementation Plan**

<i>Recommendation</i>	<i>Responsibility</i>	<i>Time Frame</i>
<b>C.4. Promoting market oriented financial intermediaries</b>		
<ul style="list-style-type: none"> <li>• Reorienting existing urban sector development finance intermediaries toward the market. Where necessary, consolidate state-level financial intermediaries.</li> <li>• Develop and implement policies to facilitate interest of all-India development finance intermediaries and other market players in urban infrastructure</li> <li>• Develop new urban sector financial intermediaries with private control and management</li> </ul>	<p>Central government, State governments</p> <p>Financial intermediaries, External agencies, central government</p> <p>State governments, other financial institutions, external agencies</p>	<p>urgent</p> <p>short to medium term</p> <p>medium term</p>

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