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Towards a Public-Private Partnership Regime: An Analysis of Water-supply Systems in Urban India

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Summary
The institutional arrangements for supplying water to people living in urban conurbations in India is gradually being transformed from a conventional departmental arrangement to a new, rather fragmented structure of public-private partnerships with regulatory set-ups in a few cases. This article tracks the course of this development. It also identifies the prevailing patterns of public-private institutional settings that exist in specific urban areas. The study uses a comparative framework to identify the transition that occurred in the management structure of the states/cities over a specific period. The results suggest that despite efforts made to introduce private elements to operate water-supply systems in most of the urban conglomerations in India, the effects have actually been minimal, confined only to the top end of the supply chain, viz. operation and management (O & M). Instead, the old structure continues to be the dominant arrangement.

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1 Introduction

Water scarcity is increasingly being posed as a development challenge for many countries, particularly in urban areas (Saleth and Dinar, 2004). It is forecast that by 2050, the urban population of India will constitute 50 per cent of the country's entire population and will be confronted with serious water problems exacerbated by the effects of climate change (Singh, 2000). Consequently, planners and policy-makers are increasingly coming under pressure to optimise the current use of water and to develop innovative solutions for sustainable water augmentation and management in the long term. One of the solutions that has been proposed but only partially adopted is a public-private partnership arrangement regarding the administration and management of water resources. This article explores the changing situation in India's urban water-management system and identifies some weaknesses in the current structure, including a lack of coordination and cooperation between the public and private actors as well as between the central, state and municipal levels in regulating urban water systems.

The paper is structured as follows. Section two gives a description of the key considerations involved in the water-delivery systems in urban India, section three speaks about the legal and regulatory set-ups governing the system, and the fourth section elaborates the changes happening in the institutional structure responsible for managing India's urban water systems. The fifth section discusses the heterogeneity and multiplicity aspects of this institutional arrangement.

2 Improving urban water-management systems in India – the assets and drawbacks of involving private firms

In addition to the factors driving water scarcity mentioned above, the changing structure of the urban economies also intensifies the challenges surrounding urban water-management systems in India. Rapid growth of urban areas, patterns of increasing water usage and, moreover, growing financial stress on the local urban bodies necessitate a renewed focus on the management of urban water systems (Singhal and Johri, 2002; Kundu and Thakur, 2006). The challenges that exist include excess groundwater discharge and the effect of rising pollution levels on water quality. The worsening of water quality in urban areas is very much associated with mass industrialisation, inefficient water-treatment facilities, growing building densities, the undiminished migration of parts of the population from rural to urban areas of the country, and decelerating local eco-systems (NIUA, 1999; PAA, 2004). The introduction of private elements in the operation of the urban water systems may exacerbate this deterioration in urban water quality. Even though there is no clear evidence showing such a correlation between water quality in the urban conurbations and the involvement of private entities in the water-service system in urban areas, the lack of an effective regulatory mechanism regulating the behaviour of the private bodies poses a potential threat for urban areas (Koppenjan and Enserink, 2009).

Water-management systems, and in particular their institutional settings, need to take both demand- and supply-related concerns into consideration for the urban water-management regimes. Demand-management tools not only have the potential to bring down the required cost of supplying water (Shipton et al., 2002), but they also have the ability to optimise the use of scarce water resources. Similarly, innovative technological solutions, the identification of new sources of supply, and the emerging notion of water-sensitive urban designs are considered options available to urban water managers to address supply concerns.

Urban water-supply management regimes are experiencing change in India as well as in other countries around the world. They are moving from integrated publicly owned systems to new institutional structures and are being unbundled into various components of production, transmission and distribution. These changes are taking place in order to create space for private players to get involved in the provision of this service. Deteriorating water infrastructures, unfunded federal and state

environmental mandates, costly capital improvements and the desire to enhance efficiency are the main driving forces behind the emergence of these arrangements (Mays, 2002).

Public-private partnerships (PPP), which have emerged as a trend in managing urban water systems in many cities of the world, have their assets and drawbacks. They are viewed as innovating water management, although they should not be considered a panacea for the problems of urban water systems.

The involvement of private actors is favourably weighed in the context of the budgetary hardships recently encountered by several local urban bodies. These funding problems result in the resource bases of the urban bodies drying up, driving them to search for other alternatives to meet their obligation of providing basic needs like water to the populace. In cases where centralised set-ups are more empowered to mobilise resources and leave little room for local bodies to arrange the necessary financial resources, this kind of hardship is more pronounced and obvious. On the other hand, it is beset with a number of difficulties (Mehta, 2000). It is contended that privatisation of water resources in India has grave implications for the poor (Reddy and Dev, 2006). In general, the inherent economic problem of information asymmetry associated with private entities managing public utilities is one of the major threats in such a framework (Venkatachalam, 2007).

In an international comparison, there have been many instances of PPPs failing to achieve their desired goals. Critics argue that the failure of PPPs in many developing countries is related to these nations adopting a model that did not fit their domestic institutional settings (Venkatachalam, 2007). The desirability and efficacy of market-based solutions have been debated widely and voices of dissent have been raised on many platforms, particularly regarding the transformation of management regimes from a publicly owned arrangement to a quasi-private structure.

Nevertheless, PPP arrangements are felt to have the potential to innovate water management (Koppenjan and Enserink, 2009), contributing to reshaping the institutional and behavioural mode of supplying water in urban conurbations (Venkatachalam, 2007). In PPP frameworks, private participation does not often lead to a complete takeover by a private entity or a private company. Rather, it indicates that a private party will receive a part or a segment of an operational function, while the rest of the functions are managed by the old government departments or by municipal bodies.

Despite the questions raised about the appropriateness of the public-private partnership arrangements in the production and distribution of water in urban set-ups, these arrangements are perceived by many bilateral and multilateral organisations as more fitting for managing the urban water system in most of the countries in the world. The traditional centralised management edifices are being dismantled and are giving way to new arrangements. In these arrangements, decentralised innovation systems

operate with private entities as an alternative for supplying water to the urban locations (Ruet, 2006).

In the following section, we shall assess some recent trends of institutional change in the urban water-management system in India. We are interested in the question of whether or not these trends converge and spawn improved conditions for a more effective interplay between different levels of water governance. We look at the interactions between the local and Union levels, horizontal departmental collaboration and whether or not the conditions for public and private problem-solving in the Indian water sector have improved overall.

3 Enabling a legal and regulatory framework

The public good-character and economies-of-scale issues involved in the water-production process justifies water being publicly owned, treated and distributed. This feature of water as a publicly owned product was considered in a context and time where water was available in plenty. But with the economic approach to managing the water sector changing and with water becoming increasing scarce as a resource, growing inefficiency in the public water-management system coupled with the drying up of budgetary resources to support this sector (David, 1994) have led to people rethinking its management structure and encouraged states to gradually move away from their role as a service provider and grant some scope to private parties to venture into this field.

Arguing on the lines of institutional development theory, this movement cannot be a sudden departure from state-owned functions to a privately run service. Rather, it would be a gradual transformation qualifying the *path-dependency approach* to institutions, which argues that the latter are the 'carriers of history' and that strong linkages exist among institutions in a temporal sense (Saleth and Dinar, 2004).

The 1935 Government of India Act brought local governments within the purview of the state or provincial government and specific powers were assigned. In 1992, however, another major step was taken towards the decentralisation and empowerment of local governments in India with the enactment of the 74th Constitutional Amendment Act. The 74th Amendment to the Indian constitution empowered local urban bodies to function as institutions of self-government. One of the obligatory functions of local bodies, made constitutional with the new Amendment, is to provide water to urban residents.

The 74th Constitutional Amendment enacted in 1992 also requires state governments to delegate powers to local urban bodies to manage the urban water systems and paved the way for urban water-system reforms in India (Mathur, 2007). Water being a state subject, the prime responsibility for it falls on the individual states, while the central government provides broad policy guidelines and road maps for managing India's water resources. The responsibility for the development of the country's water resources, however, lies with both the central government and the sub-national

states. To put it concisely, the central government is empowered to regulate and develop the inter-state rivers and river valleys to the extent declared by law to be expedient in the public interest. The central government's role consists largely in providing policy guidelines to states and making the provision of financial arrangements for developing the resources. At the national level, there have been policy shifts in terms of changing priorities and foci. This is reflected in various policy documents. For instance, while the National Water Policy of 1987 considers planning to be done on the basis of hydrological units, the National Water Policy of 2002 establishes systems based on the river basins and use of an improved information base for resource planning. It also speaks of sustainable water projects and the development of groundwater resources. The policy specifically mentions the role of private participation in water-resource management in various ways.

There is also a set of laws at the state level which govern the water sector on a state-specific mandate. In many states, water policies have been drafted to design the road maps for the development and optimal use of the state's water resources. This creates a very difficult regulatory situation as there are a number of overlapping laws, authorities and jurisdictions. Huge differences exist between state laws (Cullet, 2006). However, no comprehensive and clear legal framework exists at the central level that could address some of these conflicting state laws and govern the water resources of the country.

An interesting dimension of this complex web of legal structure governing the urban water system in India is the recent appearance of regulatory set-ups in several states in India, albeit in a very uncoordinated, sporadic and patchy manner. A few states in India have enacted regulatory laws on water distribution; in some cases, water regulators have been established with mandates including effective management of urban water-supply systems. Maharashtra has taken the lead in this direction by setting up a regulatory body for developing the state's water resources, viz. the Maharashtra Water Resources Regulatory Authority. The authority has the mandate to accelerate the reform process in the water sector to regulate the allocation, management and use of states' limited resources. States like Andhra Pradesh, Gujarat and Uttar Pradesh are also in the process of setting up regulatory authorities to ensure the optimal use of their water resources in line with Maharashtra. Given the increasing trend of private participation in providing water services to urban people, effective regulation needs to be put in place to achieve better results.

4 Institutional change in urban water management and its practical impact

Adherence to the Dublin Principle and the need for a paradigm shift in the water-management regimes in the urban conurbations has led to the role of government being redefined. The Dublin Principle is the first concerted international effort to categorically state the key issues of water and thrust of water-management systems.

A consensus was reached by a group of experts and organisations in 1992 for adoption of new approaches to the assessment, development and management of freshwater resources. The Principle also recognised the need for cooperation to reverse the present trends of overconsumption, pollution and rising threats from drought and floods. Four guiding principles involving the environment, economics, social needs and the role of women were emphasised for the sustainable development of water resources (Solanes and Villarreal, 1999). It has also offered more scope to private and quasi-private agencies to become part of urban water-management regimes. The movement away from the command and control regime of the state and increasing reliance on the market forces have redefined the management regimes and calls for the re-evaluation of the role of a state. So far, this shift from public to public-private has had mixed results in Indian water management, as will be outlined in the following sections.

Table 1: Institutional arrangements for supplying urban areas with water in major states (1998-99)

State	Capital works	O & M	Revenue functions
Andhra Pradesh	PHED	Municipal body	Municipal body
Bihar	PHED & municipal body	PHED & municipal body	Municipal body
Gujarat	Municipal body & GWS&SB	Municipal body	Municipal body
Haryana	PHD	PHD	PHD
Karnataka	KUWS&DB	Municipal body	Municipal body
Kerala	KWA	KWA	KWA
Madhya Pradesh	Municipal body & PHED	Municipal body & PHED	Municipal body
Maharashtra	MJP & Corporation	Municipal body	Municipal body
Orissa	PHED, Rural Water Supply and Sanitation Department, Housing and Urban Development Dept.	PHED, Rural Water Supply and Sanitation Department	PHED, Rural Water Supply and Sanitation Department
Punjab	PWS&SB	Municipal body & PWS&SB	Municipal body
Rajasthan	PHED	PHED	PHED
Tamil Nadu	TWAD Board	Municipal body & TWAD Board	Municipal body
Uttar Pradesh	Jal Nigam & municipal body	Jal Sansthan & municipal body	Jal Sansthan & municipal body
West Bengal	PHED & municipal body	PHED & municipal body	Municipal body

Source: NIUA Survey, 1999

In order to make the local control of urban water systems operational, the functions of water-supply systems in urban set-ups are split up into two main parts. One is the capital component of it, which is mostly confined to developing the water infrastructure in the city/town. The other important functional division is operation and maintenance of the function (also just known as “O & M”). Traditionally, the former aspect of service provision was conducted by state-level agencies like the Public Health Engineering Department (PHED) and local governments were responsible for operating and maintaining the system.

The performance of this integrated framework governing the system was unsatisfactory, which is often attributed to the weak and vulnerable institutions, a weak incentive structure and the lack of competitive forces and rules (Tiwari, 2007). Public-sector agencies are found to be plagued with problems due to inefficient operations, lack of adequate investment capacity and poor financial balance sheets. These problems associated with the public water supply systems in urban centres put indirect pressure on the urban poor communities and make it difficult for the poor urban masses to meet their water requirements. The current arrangements for providing water to the urban masses are highly fragmented and disjointed. The presence of multiple agencies while discharging similar duties has compounded the problem of service provisioning. Although each of the agencies in question has a clear demarcation with respect to service delivery in specific locations, with PHED supplying drinking water to state-government installations, for example, there have also been cases where efforts have been duplicated.

The problem is compounded with respect to consumers, who have to deal with a number of agencies for redress and service delivery. Besides, there are an array of tiny, unregulated private entities involved in the process, making the management structure more complex and imposing high transaction costs on the urban dwellers. Inter-jurisdictional and inter-institutional conflicts between public-service planners and providers are common in many cities in India (Jain, 2010). Heads of departments, heads of parastatals, and elected and non-elected officials of local bodies are required to coordinate their works on a day-to-day basis. The large number of departments, institutions, local authorities, agencies and officers undertaking similar, related or overlapping functions or functions that are not clearly defined lead to conflicts in operation (NIUA, 1999). Moreover, the various agencies operate over the same or overlapping jurisdictions and are not in a position to fully understand or evaluate the backward and forward linkages associated with these functions. Inter-institutional externalities, which occur abundantly in economies, account for most problems of city management. They call for effective coordination and mitigation mechanisms to be put in place.

Table 2: Institutional arrangements for supplying water to urban areas in smaller states and Union territories (1998-99)

S.N.	State/ U.T.	City/town	Capital works	O & M	Revenue functions
State					
1	Arunachal Pradesh	Itanagar	PHED	PHED	PHED
2	Delhi	Delhi	Delhi Jal Board	Delhi Jal Board	Delhi Jal Board
3	Goa	Panjim	PWD	PWD	PWD
4	Jammu & Kashmir	Jammu	PHED	PHED	PHED
5	Himachal Pradesh	Shimla	H.P. Irrigation Dept. & PHD	Municipal body & PHD	Municipal body
6	Manipur	Imphal	PHED	PHED	PHED
7	Meghalaya	Shillong	PHED	PHED & municipal body	Municipal body
8	Mizoram	Aizwal	PHED	PHED	PHED
9	Nagaland	Kohima	PHED	PHED	PHED
10	Sikkim	Gangtok	n.a.	n.a.	n.a.
11	Tripura	Agartala	PHED	PHED	Municipal body
Union territory					
1	Andaman and Nicobar Islands	Port Blair	PWD	PWD & municipal body	Municipal body
2	Chandigarh	Chandigarh	Municipal body	Municipal body	Municipal body
3	Dadra & Nagar Haveli	Silvassa	PWD	PWD	PWD
4	Daman and Diu	Daman	PWD	PWD	PWD
5	Lakshadweep	Kavarathi	PWD	PWD	PWD
6	Pondicherry	Pondicherry	PWD	PWD	PWD

Source: NIUA Survey, 1999

Table 3: Institutional arrangements for supplying water to urban areas in specific cities (2007-08)

Service Providers and their Functional Domain (Water Supply)				
Sl.	**City**	**Planning, Design**	**Construction**	**Operation and Maintenance**
1	Ahmedabad	Ahmedabad Municipal Corporation		
2	Mumbai	Municipal Corporation of Greater Mumbai		
3	Nashik	Nashik Municipal Corporation (NMC) (MJP assists NMC in planning and designing of projects)		
4	Pune	Pune Municipal Corporation		
5	Rajkot	Rajkot Municipal Corporation		
6	Shimla	Shimla Municipal Corporation		
7	Vadodara	Vadodara Municipal Corporation		
8	Vijayawada	Vijayawada Municipal Corporation		
9	Agartala	PHED	PHED	PHED/Agartala Municipal Corporation (MC)
10	Bhopal	PHED	PHED	PHED/Bhopal MC
11	Guwahati	PHED/AUWSSD/GMC	PHED/AUWSSD/GMC	PHED/AUWSSD/GMC
12	Indore	PHED	PHED	PHED/Indore MC
13	Patna	PMC/PWD	BRJP/PHED	PMC/BRJP/PHED
14	Jaipur	JDA/PHED/JMC/RUIDP/RHB	JDA/PHED/JMC/RUIDP/RHB	JDA/PHED/JMC/RHB
15	Raipur	PHED	PHED	Raipur MC
16	Ranchi	DWS & SD	DWS & SD/PHED	PHED/Ranchi MC
17	Shillong	PHED	PHED	Shillong MBd/Shillong Cantonment Bd
18	Ujjain	PHED	PHED	PHED/Ujjain MC

19	Bodhgaya	PHED		
20	Gangtok	PHED		
21	Imphal	PHED		
22	Itanagar	PHED		
23	Jabalpur	PHED		
24	Jammu	PHED		
25	Panaji	PHED		
26	Puducherry	PWD		
27	Srinagar	PHED		
28	Nagpur	Nagpur Municipal Corporation		
29	Faridabad	Municipal Corporation of Faridabad		
30	Visakhapatnam	Greater Visakhapatnam Municipal Corporation		
31	Cochin	Kerala Water Authority		
32	Thiruvananthapuram	Kerala Water Authority		
33	Kohima	PHED		
34	Ajmer-Pushkar	PHED/RUIDP/UIT/RHB	PHED/RUIDP/UIT/RHB	PHED/UIT/RHB
35	Delhi	DJ	DJ	DJB/DJWSB
36	Bangalore	BWSSB/ULB	BWSSB/ULB	BWSSB/ULB
37	Agra	UPJN	UPJN	Agra Jal Sansthan
38	Allahabad	UPJN	UPJN	Allahabad Jal Sansthan
39	Kanpur	UPJN/KDA/UPHB for colonies developed by them and DUDA for slum area	A/UPHB for colonies developed by them and DUDA for slum area	Kanpur Jal Sansthan/UPJN
40	Varanasi	UPJN	UPJN	Varanasi Jal Sansthan
41	Nainital	UPJN/UJS (for small projects)	UPJN/UJS (for small projects)	Uttarakhand Jal Sansthan
42	Dehradun	UPJN/UJS (for small projects)	UPJN/UJS (for small projects)	Uttarakhand Jal Sansthan
43	Lucknow	UPJN/LDA/UPAVP	UPJN/LDA/UPAVP	LJS, UPAVP
44	Mathura	UP Jal Nigam	UP Jal Nigam	NPP/Mathura/UP Jal Nigam
45	Meerut	UP Jal Nigam	UP Jal Nigam	Meerut Nagar Nigam
46	Haridwar	UPJN/UJS (for small projects)	UPJN/UJS (for small projects)	Uttarakhand Jal Sansthan (UJS)
47	Jamshedpur	JUSCO	JUSCO	JUSCO
48	Chennai	CMWSSB	CMWSSB	CMWSSB
49	Dhanbad	MADA/DMC/WS & SD/FCI	MADA/DMC/WS & SD/FCI	MADA/DMC/WS & SD/FCI
50	Asansol	PHE/MC/M/ADDA/HC	PHE/MC/M/ADDA/HC	PHE/MC/M/ADDA/HC
51	Surat	SMC and SUDA (for newly developed areas)		
52	Madurai	Madurai Municipal Corp./TWAD	Madurai Municipal Corp./TWAD	Madurai Corp./ULB
53	Mysore	KUWSDB	KUWSDB	MC
54	Coimbatore	TWAD (an apex body of the state, responsible agency for creation of infrastructure), CMC (O & M)		
55	Nanded	MJP/NWCMC	MJP/NWCMC	NWCMC
56	Amritsar	PWSSB	PWSSB	MC of Amritsar
57	Ludhiana	PWSSB	PWSSB	MC of Ludhiana
58	Chandigarh	MCC/EDCA	MCC/EDCA	MC of Chandigarh
59	Hyderabad	HMWSSB	HMWSSB	HMWSSB
60	Bhubaneswar		PHEO/OWSSB	PHEO
61	Puri	PHEO/OWSSB	PHEO/OWSSB	PHEO

Source: compiled by the author

Table 4: Private-sector participation in areas of water management (2007-08)

Sl. no.	City	Private-sector participation and involvement
1	Agra	Private participation is envisaged, but has not happened yet.
2	Ajmer-Pushkar	Partial involvement of private developers in all of the functional domains of the water-supply industry.
3	Bangalore	Private involvement is restricted to certain activities such as the maintenance of water-treatment plants.
4	Chandigarh	Private-sector involvement is restricted to work such as billing, collection, leak repair and maintenance.
5	Dhanbad	It is proposed that several activities like water treatment and pumping machinery and O & M activities should be let out to private contractors.
6	Faridabad	The private sector is only involved in certain O & M activities.
7	Hyderabad	Private-sector involvement in billing, collection, leak repair, maintenance, etc.
8	Kohima	Private-sector involvement is restricted only in few components of the entire supply chain of water supply system (e.g. operation and management).
9	Lucknow	Thinking is underway to introduce a public-private partnership (PPP) in structuring water-supply projects and in billing and collecting charges.
10	Meerut	Private players are restricted to providing an informal, unorganised supply of water by means of water tankers.
11	Nagpur	Private contractors are responsible for running and maintaining specific water-treatment facilities (to ensure that water has a minimum quality), for the operation and maintenance of valves at reservoirs and for computerisation and preparation of water bills.
12	Surat	O & M activities are outsourced to private contractors.
13	Visakhapatnam	O & M, leak-repair and bore-well maintenance activities are outsourced to private parties.

Source: compiled by the author

Tables 1 and 2 show the institutional arrangements that existed ten years ago in most of the states in India, as surveyed by NIUA. It appears from the tables that there is a clear delineation of responsibilities, among different authorities across functions, with a slight variation in some of the states. It is interesting to note that Table 3, which documents the institutional arrangements prevailing in specific cities, suggests that functional separation is a growing reality and new actors are being engaged in various functions of the urban water-management system. Table 4 presents the role of private-sector participation operating with limited functions. This implies that – barring some organisation and management activities – most of the activities are undertaken either by government agencies or by parastatal bodies. Interestingly, the private sector is increasingly being assigned more and more tasks previously operated either by government or parastatal entities. Most of the private activities are confined to the operation and maintenance of the pipelines, tube wells and pumping stations. The privatisation mode mostly involves contracting services out to private parties.

5 Institutional multiplicity and heterogeneity – a false paradigm?

The municipalities' long-standing commitment to providing water to their residents has been challenged and a gradual shift is taking place towards a decentralised mode

of management. The decentralisation process in India is being undertaken with the understanding that the private sector has the potential to enhance the effectiveness of water-supply systems in urban areas and strengthen their poor financial health by introducing the private discipline and management principles they require. The pattern of institutional arrangement in India does not reflect any sign of convergence to a defined management structure. The existing version of privatisation is very much fragmented and only confined to contracting out certain operations to private contractors (i.e. O & M functions; see Table 4). It appears from the existing trend that participation by private entities is not intended to enhance the efficiency and effectiveness of the way in which the urban water systems work; rather, it is guided by external reasons (NIUA, 1999). There has been no attempt to evaluate the effectiveness of these private entities in performing the activities assigned to them. At best, attempts have been made by certain local urban bodies to carry out an *ex post* comparison of financial benefits achieved by engaging these private bodies.

Therefore the apparent multiplicity in the institutional structure does not give a true picture of the existing institutional arrangement on the basis of the functional division of the urban water system in India. The functional classification continues to be the same despite attempts to involve private players in specific aspects of operations. It has been argued that the strength of the institutional structure acts as a major determinant for the performance of the sector (Saleth and Dinar, 2004; Reddy and Dev, 2006). In the context of India, where institutional arrangements governing the water systems in urban sprawls appear to be very much distorted and fragmented, it is obvious that it may not achieve the desired goals of the sector. With water scarcity no longer a myth, it is now a necessity to give some thrust to issues related to water allocation and management.

6 Conclusion

The water resources of any nation can act as an engine to promote sustainable growth and the alleviation of poverty. Social and economic stability is closely connected to the provision of water (Boberg, 2005). The water systems in urban India are plagued by problems of inadequate distribution system, unreliable service, deteriorating water quality, increasing user fees for water and inadequate funds for operation and management. The United Nations World Water Report (2006) suggests that the global water crisis is actually a crisis of governance (UNESCO-WWAP, 2006). This observation is certainly reflected in the water-management systems in urban India. Sub-national governments have their state-specific rules and regulations, which are inhibiting the sound and sustainable growth of the urban water systems. Additionally, the water-management system is gradually disintegrating, changing from an integrated structure into more of a decentralised framework with multiple institutions and organisations. The existing structure reflects such a trend of institutional multiplicity, but functional classification remains almost the

same, save for a few private elements in specific operational areas. The functional separation is a blurred one: in most of the cities in India, the management regime is in the hands of a government department, local government bodies or parastatal agencies. Although transitions have been experienced in some states and cities, these are very limited and are not in line with the requirements of the operational separation and functional division of the activities. Currently, there is an urgent need to give a renewed focus to this transition and redesign the structure to allow private entities to turn the sector into a more efficient and financially viable system.

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