



**Workshop on
Preparing for the Urban Challenges
of the 21st Century
Bhopal**

Summary of Proceedings

17 February 2014

Session I

Challenges of Urbanisation in India

Chair: Dr. Isher Judge Ahluwalia

Project Leader and Chairperson, ICRIER (New Delhi)

Highlights of Discussion on the HPEC Report

The main points put forth by Dr. Isher Judge Ahluwalia following the presentation on the HPEC Report were:

- It is necessary for the engineers and authorities from the water sector to work on improving the estimates for the investments required in the water sector, since the estimates from the HPEC (prepared in 2011) are no longer valid now. Water and sanitation may constitute only 20% of the total urban investment requirement that the HPEC recommended, but this sector must be made the priority since water is a basic need. Urban roads take up a large share of the investment, but it is important to focus on water, because laying roads repeatedly before laying water pipes underground will make the process involved in installing infrastructure for service delivery of water more difficult.
- The committee recommended that a 20 lakh rupees investment is made for infrastructure assets. Operation and maintenance of existing and new assets necessitates the implementation of user charge practices. At present, user charges for service delivery are lesser than the operating costs, which exerts pressure on the ULB's ability to bear these subsidies, which in turn affects operation and maintenance and asset life.
- Following this was a brief discussion on financing investment in urban infrastructure, where one message ran clear: the real achievement in this field is not in the actual funding, but in the encouragement to cities to leverage their own funds for infrastructure investment through improved tax revenues and user charges.
- Some of the suggestions which came up for ways in which funds for urban infrastructure can be raised are by ensuring self-sufficiency of urban local bodies (ULBs) and municipal bodies, which can be achieved through instituting goods and services tax at the local government level, introduction of municipal cadres, institution of a municipal finance list, and public private partnerships aided by proper governance.
- If the country has to grow at an average rate of 7% per annum, cities have to be the main catalysts behind this growth, since they are the powerhouses of growth and investment.
- Another important point that was highlighted was that it is necessary to change people's perceptions of water as a free entity or as "God's gift". Untreated waste

water, for example, does not indicate the fact that water is a pure element. Treated water that is used every day is, for example, not without costs. To change people's perceptions, a water regulator is essential for maintaining good standards in service delivery and for regulation of water pricing.

Session II

Scaling Up of Reforms in Water Supply

Chair: Mr. Nabaroon Bhattacharjee

Team Leader, PMU, CBUD, MoUD (New Delhi)

Highlights of Presentation by Mr. J.B. Ravinder

Deputy Advisor, MoUD, Government of India (New Delhi)

- The presentation outlined the need to improve the Urban Water Supply and Sanitation Services (UWSS) as envisaged by the Ministry of Urban Development, Government of India.
- He also briefly discussed the MoUD Advisory on Improving UWSS, which identifies the policies and principles for the following:
 - i) Clarifying the Mandates of Water Supply and Sanitation Service Providers
 - ii) Improving the Governance of Water Supply and Sanitation Service Providers
 - iii) Financing Water Supply and Sanitation Operations and Infrastructure Development
 - iv) Regulating the Urban Water Supply and Sanitation Service
 - v) Building Capacity, Developing Procedures and Professionalising Actors of the Water Supply and Sanitation Sector
 - vi) Developing Procedures for Community Participation
- He also highlighted other challenges in providing good quality water services in Urbanisation and UWSS, including unplanned growth and informal settlements, unsustainable urban services (because user charges are not levied, and hence costs not recovered), and weak financial and technical capacity of ULBs.

Highlights of Presentation by Mr. Bibhas Mahapatra

OP&HS Consultants (Bhubhaneshwar, Odisha)

- Mr. Mahapatra highlighted the poor scenario of water supply in Odisha, which is reflected in the fact that only 25% of the population of the state receives direct water supply, and 50% of the cities receive less than 70 litres per capita per day. Non-

revenue water is 50%, which means that only half of the water produced reaches the people.

- The vision of the Odisha water policy is to achieve 24*7 water supply at affordable prices in an equitable, sustainable and eco-friendly manner.
- The objectives of the water policy are optimal resource allocation, management efficiency, improvement in service levels, demographic and geographic equity, ground water conservation, monitoring and surveillance of services, transparency and accountability in service delivery, and higher employee satisfaction.
- The current issues in the water sector include low cost recovery, low citizen participation, and contamination because of poor operation and maintenance of the pipe network.
- Given the challenges faced by the state, a few strategies which could be implemented to achieve the vision set forth are as follows: outcome oriented project development, focus on operational efficiency, a robust monitoring mechanism, institutional restructuring, and social accountability.
- Some of the expected reforms are 100% operational cost recovery, focus on operational efficiency instead of asset creation, ground water conservation, and adoption of e-governance.

Highlights of Presentation by Mr. S.D. Mande,

Proprietor, S. D. Mande and Associates (Mumbai, Maharashtra)

- This presentation was about the Maharashtra Sujal and Nirmal Abhayan (MSNA). This policy proposed reforms in the cities of Maharashtra in the areas of water supply, sewerage and sullage, toilet management, and waste management.
- Under the MSNA, 24*7 water supply is in two towns and in some wards in two cities. The positive impact of MSNA was evident in the fact that Badlapur achieved 24*7 water supply in eight wards. Coverage of water supply in this city has increased from 88% to 92%. MSNA had been successful enough in Badlapur to lead to profits in its operations – the cost recovery is 142%.
- Reforms in the areas of consumer surveys, water audits, energy audits, installation of bulk meters, hydraulic modelling, pressure management, GIS mapping and computerised billing were proposed as a part of this project.
- Difficulties in the form of inabilities in identifying illegal connections cropped up – only 4 out of 17 cities have regularised most of their illegal connections. It is in these areas where the above-stated reforms played an important role in overcoming such difficulties.

Session III

Public-Private Partnerships (PPPs in Urban Water)

Chair: Dr. Meenu Tewari

*Associate Professor, University of North Carolina, USA and HUDCO Visiting Professor,
ICRIER (New Delhi)*

Introductory Remarks by the Chair:

International evidence shows that PPPs aid improvements in the water sector. The question is whether the same model can be applied to India, as well, given the financial management system, politics, incentive system and community engagement in this country.

Highlights of Presentation by Ms. Suneetha Dassapa Kacker

Water and Sanitation Specialist, Water and Sanitation Program, World Bank (New Delhi)

This presentation discussed the case of Algiers where PPPs in the water sector have impacted service delivery in a positive manner.

- In 2006, only 8% of the people in Algiers had 24*7 water supply. To extend coverage, the country entered into a PPP with the Suez Environment to ensure 24*7 supply by September 2009. 80% of the population had 24*7 water supply by 2009.
- A huge improvement in the situation was noted in December 2008 itself, and the treatment capacity was augmented from 6% in 2006 to 53% in 2011.
- The keys to success for the Algiers model were a relationship of trust and transparency between the client and the service provider, and focus of the contract on management rather capital investment. India needs a similar approach to water sector reforms at the national level.
- The speaker then provided a brief background on the state PPPs in India. PPPs in urban water in India were conceptualised as early as 1990, but the focus has shifted only gradually to distribution from large bulk water augmentation. Recently (since 2005), the KUWASIP has managed to demonstrate the 24*7 water supply model through a management contract (which focuses on management over capital investment). The major achievements in this field have been shifting focus to 24*7 water supply, service delivery and private sector efficiency.
- But, challenges remain in the need to achieve cost effectiveness and financial sustainability, bring out well-designed PPPs, and construct a proper institutional structure to ensure that contracts are honoured.

Highlights of Presentation by Mr. Arvind Shrivastava

Secretary to Government (Budget and Resources), Government of Karnataka (Bengaluru)

- The presentation started on the note that PPPs in India are not exactly new phenomena, since some form of private involvement has been present already. The issue with trying to introduce PPPs in India is to make clearly defined contracts where accountability is identified to strengthen the already existing collaborations between the public sector and the private sector.
- This was followed by a brief background on the water sector in India. The main issues here are:
 1. Thrust on asset building rather than service delivery
 2. Lack of capabilities to meet performance standards
 3. Lack of financial viability, since there is no clear distinction between willingness to pay and ability to pay of the consumers
 4. Reluctance to experiment with different models of service delivery due to lack of managerial confidence and political will.
- At this point, the presentation moved on to Karnataka's water policy and the keys to its success:
 1. Political and administrative acceptability
 2. Demand for such a policy in 22 cities in Karnataka
 3. The operator in this policy was allowed to perform well in terms of the amount of flexibility that was provided to them by the government, in spite of initial reluctance to do this. This translates to flexibility in the contract, as well.
 4. It was found that people are willing to pay for good quality water delivered 24*7. In this way, credibility of the policy was built among the people by convincing them that there were procurement costs involved in obtaining water for free. Several awareness programmes were conducted, and household-based communication by NGOs helped in convincing the people.
 5. People were aware of the fact that they would pay for the amount of water they would use: the consumption levels across the poor became more judicious. Thus, the entry-level problems that arose were solved by making the system more inclusive.
 6. Having the city government on board is an essential condition to ensure effective communication.

- Though the project has been a success to an extent, challenges remain in the form of the need to scale up to city level, and revising tariffs periodically. One more challenge is to align the incentive system with the PPP system.

Discussion following the presentation

- The most important question raised in the discussion following the presentation was: why was there no scaling up in cities even though wards and cities had been completed in 2011?
- Several points served to answer this question:
 - i. A lack of understanding of the scope of scaling up and management of existing assets was a major factor. Integration of these assets with the water project was not chalked out clearly – existing assets were to be scaled up while starting the new project, and this was not planned.
 - ii. Poor financing strength of the municipalities, which was a constraint to enter into a PPP arrangements with private parties
 - iii. Poor contract design

Session IV

Cost Recovery – Urban Water

Chair: Ms. Suneetha Dassapa Kacker

Water and Sanitation Specialist, Water and Sanitation Program, World Bank (New Delhi)

Highlights of Presentation by Mr. B.T. Raju and Mr. Madhusudhan

Additional Chief Engineers, Bangalore Water Supply and Sewerage Board, Government of Karnataka (Bengaluru)

- This presentation was a description was the revenue-based billing system of Bengaluru –Sajala.
- In Bengaluru, the water supply is 1260 MLD for a population of 9.5 million people as of 2013.
- The situation before computerisation of bill payments (which was in 2004) was characterised by long queues for bill payments, recording of each individual customer's meter reading in person and maintenance of manual ledgers.
- These methods led to limitations in this system such as errors in billing and lack of abilities to gauge accurate demand.
- This was followed by a detailed description of how the computerised revenue billing system turned the tables around for the BWSSB. Several advantages such as

transparency in the billing system, no errors or delays in billing, and improved efficiency followed. After computerisation, the number of meter connections increased from 3.51 lakh in 2003 to 7.81 lakh at present. Computerisation of billing has also brought along with a clear demarcation of connection types (commercial, residential, and industrial) which makes charging for units of water consumed according to slabs much easier.

Highlights of Presentation by Mr. Agam Mathur
Chief Engineer (Retd), PHED, Rajasthan (Jaipur)

Mr. Mathur stressed on rationalisation of tariff as an important component of urban water policy. The message that came across clearly was that “people are willing to pay, but there is unwillingness to charge”..

- There was also a brief description of the “Aapni Yojna” in Rajasthan, under which 24*7 water supply was provided in some villages, though at a higher rate than water for the urban population. Mr. Mathur supported this idea, while citing the fact that water cannot be delivered at the doorstep for free Even during the days when pitchers were delivered at homes, there was a small charge for this service. Moreover, inefficiencies in service delivery can also be prevented by charging tariffs for water.
- A model for tariff rationalisation was proposed, whereby full cost recovery in most cases would be made possible. This, in turn, would encourage private sector participation and attract external funding for projects.

Session V

Technology and Innovation for Water Supply

Chair: Mr. Kalyankar Venkat
Former President of India Water Works Association (Mumbai)

Highlights of Presentation by Dr. Sanjay Dahasahasra (copy from Pune)
Former Member Secretary, Maharashtra Jeevan Pradhikaran

- This presentation outlined the importance of geographic information system (GIS) in efficient designing of water distribution networks. In India, overall coverage of water supply is just 49%, the extent of metering is negligible, continuity of water supply is just 4 hours on an average, and cost recovery in water supply services is between 30-35%. All these numbers are far away from the standard required to achieve a 24*7 water supply scenario. According to Mr. Sanjay Dahasahasra, technologies bridge the gap between benchmark and reality.
- The current scenario of water supply in India is characterised by haphazard laying of pipes, frequent overflowing/empty tanks, and bribing. Mr. Dahasahasra proposed GIS as a solution to all these problems.

- GIS in the water sector is the process of creating a representation of an actual water supply system by using computer software. The rest of the presentation went on to outline a GIS-based hydraulic model which improves the water supply system of the city. This software records real time information about the flow and pressure of water, which helps in leakage identification, pressure management, rezoning of the disorganised distribution system, and hence leads towards 24*7 water supply.

Highlights of Presentation by Mr. M. Satyanarayana

Engineer-in-Chief and Director (Projects), Hyderabad Metropolitan Water Supply and Sewerage Board (HMWS&SB) (Hyderabad)

- This presentation was a description of SCADA (supervisory control and data acquisition), a tool to ensure better water management through identification of leakages. This technology helps in monitoring real time hydraulic information.
- This system also helped in maintaining proper water records, and ensured customer satisfaction. The situation with manual processes was much the same as the one described in the BMWSSB example above, with the lack of technology in billing, collection, and supply of water leading to low cost recovery. The introduction of smart cards for use by each tanker (which could be tracked online and carried information about the route of the tanker, and the amount of water carried by it, for example) ensured transparency in the delivery system. In addition, water audits at filling stations led to proper maintenance of records and accountability. This, in turn, led to timely delivery of services and subsequent customer satisfaction.

Session VI

Strengthening Institutions through Service Delivery

Chair: Dr. Sanjay Dahasahasra

Former Member Secretary, Maharashtra Jeevan Pradhikaran

Highlights of Presentation by Mr. J.V.R. Murty

Independent Consultant (Mumbai)

The institutional framework is based on three functions: policy setting, service delivery and oversight. There is a need to unbundle these functions and include citizens in this framework in order to create a proper institutional structure.

- The presentation then moved on to describe the categories of institutions. Policy institutions generally tend to be present at the central level, in the form of ministries and departments. Service delivery institutions are generally public institutions like Public Health and Engineering Departments (PHED), a unit within the urban local bodies (ULBs) and a city level board (BWSB). Regulatory institutions in India, in Mr. Murty's opinion, are close to non-existent.

- The key factors which determine the setting up of good service delivery institutions are legal structure and ownership, corporate governance, documented obligations and rights, and autonomy.
- The major issues in service delivery institutions are in the areas of financial management and accounting, procurement management, the use of data and transparency, skilled workers, human resource policies and practices, and the presence of a conducive working environment.
- The way forward is to focus on building institutions for efficient service delivery of water. Introducing benchmarking and setting up regulatory institutions are also necessary for seeing improvements in the water sector.

Highlights of the Presentation by Mr. Shashikant Hastak

Executive Engineer and Nodal Officer, CBUD Project (Nagpur)

This presentation was about the water supply status in Nagpur before and after the introduction of the JNNURM scheme, and also about the functions of the Nagpur Environmental Services Limited (NESL).

- Before the introduction of the JNNURM in Nagpur, annual losses in the water sector were approximately Rs. 56 crores, and the system efficiency was only 32%. Losses and low water tariffs subsequently led to inequitable water distribution.
- Once the JNNURM augmentation projects, including water and energy audits of the water supply system, were implemented, a marked improvement was noted in the system efficiency, which increased from 32% to 41%. Tariff revisions under these projects also led to reduction in financial losses, and water supply to distribution increased by 40 mld from previous levels.
- A pilot project for 24*7 water supply was also launched by the Nagpur Municipal Corporation, aiming at reduction of water losses, improvement in public health, and technical and financial sustainability of the water sector. A PPP was drawn up for this purpose, with 70% of the funding from JNNURM and 30% of the funding from the private operator.

The presentation then shifted focus to the description of the company called NESL, which was instituted as a fully owned company of the Nagpur Municipal Corporation in 2009. The main purpose of the company is to attract private investment for water projects and ensure accountability and functional autonomy of NMC's Water Works Department. The main strategy of the NESL is to establish and operate a dedicated organisation to support the monitoring of the performance of the private operator in accordance with PPP contract.

The workshop ended with a vote of thanks by the ICRIER urban team.

