

Piped Water Supply to Greater Bangalore: Putting the Cart before the Horse?

MALINI RANGANATHAN, LALITHA KAMATH, VINAY BAINDUR

Cities in India are moving towards commercially viable models of urban water and sanitation delivery to fill the widening gap between demand and supply. Cost recovery through upfront beneficiary contributions is increasingly becoming a key consideration in the provision of piped water and sewerage. This paper examines the Greater Bangalore Water and Sanitation Project, a project that aims to extend piped water from the Cauvery to over two million residents in peri-urban Bangalore. The paper critically evaluates the project and makes four interlinked arguments: (1) Upfront payments from citizens have not guaranteed timely and satisfactory service. (2) The project's financial model is disconnected from actually existing settlement and urbanisation patterns, thus delaying water delivery and undermining accountability. (3) The project's highly centralised decision-making process has resulted in low political buy-in and public acceptance. (4) Modifications to the original financial model have been crucial in sustaining credibility and getting the project off the ground.

We would like to acknowledge the helpful comments and input provided by Priya Sangameshwaran, Narasimha Rao, Sharadini Rath, Isha Ray and Ananya Roy. We are also indebted to B S Vinodha, H V L Prasanna, P Rajan, Rohan D'Souza and Manjunath for research assistance. Finally, this project was made possible with the financial support of the American Institute of Indian Studies and CIVIC Bangalore.

Malini Ranganathan (malini@berkeley.edu) is a research scholar at the University of California, Berkeley, US; Lalitha Kamath is an independent consultant; and Vinay Baidur an activist and independent researcher based in Bangalore.

It is estimated that approximately one billion people in the world lack access to safe drinking water sources; some put this figure closer to two billion if growing numbers of urban poor are to be included. The largest increase in unserved populations is expected to be in rapidly expanding peri-urban areas of sub-Saharan Africa and south Asia (UNDP 2006). In India, although official statistics state that approximately 91% of urban households have access to drinking water (MOUD 2006), a recent study finds that only 71% of households surveyed across major cities consider the quantity of water supply to be adequate (Shaban and Sharma 2007). Even if the millennium development goal of halving the population without access to water and sanitation by 2015 is met, nearly 100 million urban dwellers will still lack access to improved water sources for domestic use in India (WaterAid 2005).

India's Eleventh Five-Year Plan (2007-12) estimates that approximately Rs 54,000 crore¹ will be required to meet universal water supply coverage targets in urban areas (MOUD 2006). However, given a funding deficit of more than 60% in the previous plan period, several alternative sources are being considered, including private sector participation (PSP), debt through municipal bonds, loans from international financial institutions (IFIs), and contributions from users themselves. By mandating reforms in municipal governments in conjunction with new funding support, the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) aims to make cities more "investor-friendly" in order to leverage additional funds for infrastructure and basic services (GOI 2005).

Karnataka has been one of the most active proponents of urban sector investments and reforms since the mid-1990s. One reason for this is that a gradual reduction in central government budgetary allocations and guarantees for public investments have placed the burden of urban infrastructure investments squarely on states. In Karnataka, deteriorating state finances coupled with low capacity of municipalities to invest in infrastructure have in turn propelled interest in cost recovery, external funding, and PSP (Kundu 2000).² In particular, urban water supply and sanitation have witnessed a surge of interest from reform proponents such as the World Bank, the United States Agency for International Development (USAID) and the Asian Development Bank. A key indicator of support for reforms at the state level is Karnataka's Urban Drinking Water and Sanitation Policy (2003). The policy argues for full cost pricing of water and the introduction of PSP in the longer term, and encourages "preparatory work" for PSP – such as fostering a culture of commercialisation – in the shorter term.

Today, cost recovery, and in some cases, the PSP have become core conditionalities in international loans. For example, in 2005, the twin cities of Hubli-Dharwad in northern Karnataka signed a management contract on a pilot basis with the French multinational Compagnie Générale des Eaux (known worldwide as Veolia/Vivendi) as mandated by the World Bank's Karnataka Urban Water Sector Improvement Project (KUWASIP) loan, despite resistance from local groups. Several critiques have been levied against the project, including the technical feasibility of the round-the-clock "24x7" water supply standard, competence of the foreign private operator, and validity of the willingness to pay studies, among others (Sangameswaran et al 2008).

The Greater Bangalore Water and Sanitation Project (GBWASP) – an ambitious project to connect people living on the outskirts of Bangalore to piped water and sanitation – must be viewed against the backdrop of these broader trends and debates around market-based reforms in the water sector in Karnataka. By "market-based reforms", we mean a mode of management that relies on the market to meet economic and resource/environmental sustainability goals. Although the term "market-based" often encompasses a basket of concepts such as privatisation, commodification and commercialisation, we concur with Bakker (2005) that each of them is distinct and should not be conflated. With respect to GBWASP, we use the term "market-based reforms" to refer specifically to a policy move away from a reliance on public investment in the water sector to financing by users, municipal bonds, and various forms of debt. Our use of the term "market-based" in this paper is most closely aligned with the term "commercialisation", which entails institutional and financial changes in the management of water.

GBWASP was initiated in 1998 to distribute Cauvery River water (already transported to Bangalore across a distance of approximately 100 km and an uphill gradient of 500 m) by laying new distribution pipelines in the periphery. By the end of the millennium, industrial and real estate expansion was placing a heavy burden on groundwater resources, creating the need for surface water supply. Since current and future population growth is expected in the periphery, assured water supply to meet new demand was considered vital. The project aims to be "bankable" (i.e., commercially viable) in that it leverages state loans, grants and debt raised through municipal bonds. However, one major difference between GBWASP and preceding reform-oriented projects in the water sector is that it demands beneficiary capital contributions (BCC) from citizens/customers. More than 35% of the project's total capital expenditure (which is Rs 447 crore) is being sourced from future customers through upfront payments, starting from 2003-04.

Based on fieldwork in several peri-urban zones in Bangalore (Bommanahalli, K R Puram, Byataranapura, Mahadevapura and Kengeri), this paper critically discusses the project's financing model and its implementation over the period 1998-2008. In light of growing enthusiasm for market-based financing and beneficiary contributions for infrastructure in India (e.g., Moud 2006), the goal of the paper is to shed light on the actual workings of these models at the ground level and the risks entailed when they are disconnected from the social, political and planning realities of

urban settlements. Our methods involved over 200 interviews with bureaucrats, engineers, residents and politicians in the peri-urban zones identified as well as secondary data collection from municipal and utility offices. We also facilitated meetings and focus group discussions in neighbourhoods and consistently shared our findings with, and elicited feedback from, affected communities. Our findings lead us to make four arguments in this paper: (1) Upfront payments from beneficiaries – frequently termed "stakeholders" by project proponents – have not guaranteed timely and satisfactory service nor enhanced customer entitlements, much to the contrary of the project's rhetoric and endorsements by international development agencies. (2) By treating the periphery as a relatively homogeneous expanse of willing customers, the project's financial model is disconnected from actually existing urbanisation patterns, such as the presence of difficult-to-connect slums, villages, and tenuously legal subdivisions that have proliferated since the mid-1990s. This oversight has, in turn, delayed water delivery and undermined accountability in the project. (3) The project's highly centralised decision-making process has resulted in low political buy-in and public acceptance of the upfront contribution system. (4) Modifications to the original financial model and beneficiary contribution policies have been crucial in sustaining credibility and getting the project off the ground.

The rest of the paper is divided as follows: in Section 1, we describe the existing scenario of water access in peri-urban areas of Bangalore. In Section 2, we discuss the specifics of the financing model and the institutions and agencies involved. Section 3 discusses our findings and our main claims. Here we show how certain modifications to the original design – based on decisions taken by Bangalore's water board and pressure by citizen groups and resident welfare associations (RWAs) – were crucial in getting the project off the ground and sustaining its legitimacy. We end with overarching conclusions that are relevant to similar water projects and strategies that are in the works or are anticipated throughout the developing world.

1 Settlement Patterns and Water Situation

As Bangalore's population (over six million people) grows at the rate of 3% per year, the city continues to expand its urban boundaries. In January 2007, the Bruhat Bangalore Mahanagara Palike (BBMP), or the Greater Bangalore City Corporation, was created by merging the existing corporation with seven city municipal councils (CMCs) one town municipal council (TMC), and 110 villages surrounding the city, bringing the total area up from 225 sq km to 740 sq km. The eight newly added urban local bodies (ULBs)³ exhibit uneven patterns of growth and infrastructure availability. Alongside technology parks and real estate developments, quasi-legal subdivisions known as "revenue layouts" have also proliferated. As Schenk (2001) finds in his study of Bangalore's urban fringe, revenue layouts developed from the mid-1990s onwards with the transfer of agricultural land to real estate developers who subsequently subdivided the land and sold it to buyers without necessarily getting the legal approvals. That is, unless the layouts were formally converted to non-agricultural land (through payment of a conversion fee), they maintained an

illegal status. Several residents we interviewed admitted that they did not possess documents proving legal ownership of their properties (*khata*) nor proof of conversion to non-agricultural use, since these documents are only needed to avail of a bank loan.

In this environment, developers usually failed to secure the necessary planning permissions that ensure basic standards with regard to the width of access roads, connection to main roads and sewer lines. Kamath et al (2008) describe how in older and unplanned peri-urban areas like villages, slums and revenue sites, investments in infrastructure are made in response to residents' demands and are channelled via local politicians, local leaders and associations. Infrastructure provisioning in these areas does not depend necessarily on being "authorised"; minimal services are often provided either through efforts by RWAs or by local governments on payment of property tax and betterment charges with the understanding that they will be regularised over time. By contrast, master planned layouts and industrial estates in the periphery that typically cater to the corporate, middle class, and high-end residential sectors are equipped with water, electricity, road connectivity and other services. Master planned areas are the product of deliberate intervention by parastatal agencies like the Bangalore Development Authority (BDA), most typically through notification, land acquisition (of village land for an industrial estate, for instance), development and resale, and the provision of up-front infrastructure (*ibid*).

How do residents negotiate access to water and basic services in this environment? Based on household surveys, interviews with residents and administrators and secondary data, our research further categorised and quantified the modes and strategies of accessing water in this environment. Table 1 lists various modes of access, users, and providers in ascending order of socio-economic status. Residents living in revenue sites and slums rely almost completely on groundwater for their drinking and domestic needs. Poorer groups rely exclusively on municipal sources of groundwater provided through borewells and mini water tanks, and wealthier groups rely on private tankers or personal

borewells. Since groundwater is practically free and unregulated, those with land and the proper documents can indiscriminately sink borewells, obtain electricity connections and pump water either for their own consumption or for sale.⁴ However, due to unregulated growth, the water table has been receding at an alarming rate in recent years. In the heart of the IT belt, an area spanning the north-east to the south-east of the city, it is not unusual to dig to 1,000 ft before encountering groundwater. It is important to note that until GBWASP, revenue sites did not have access to piped water and sanitation at all.

Planned layouts approved by BDA, on the other hand, often (but not always) are supplied with piped water provided by the Bangalore Water Supply and Sewerage Board (BWSSB). Sourcing the majority of its supply from the Cauvery River, BWSSB provides approximately 5,00,000 connections in the Bangalore core area and a small proportion (less than 10%) of connections in the periphery with approximately 840 million litres per day (MLD).

Our research revealed several aspects of water access at the periphery. First, as Table 1 shows, ways of accessing water in this environment are variable, and differ according to land tenure, settlement type, socio-economic conditions, and provider. This means that there is considerable heterogeneity in the periphery's pattern of urban development. This also means that residents have varying levels of willingness and ability to pay upfront contributions even within a particular income category. Second, because there is heavy dependence on depleting groundwater resources, residents face daily coping costs as shown in the last column of Table 1. These include paying for private tankers, sinking borewells, time spent in complaining to zonal offices and gathering water, and on-the-side payments for enhancing access to and release of water. For instance in Bommanahalli, it was found that lower middle class households can spend between Rs 1,000 and 2,000 per month on tankers and supplemental bottled drinking water. The argument often put forth by proponents of cost recovery reforms is that rational utility charges eliminate these multiple coping costs. However, as Section 3 shows the time

Table 1: Different Modes of Access in Greater Bangalore in Order of Ascending Socio-economic Status

Mode of Access	Who Accesses	Provider	Price/Cost
Handpumps (very few functioning)	Poor groups living in urban villages and revenue layouts	Public (ULB)	Free
Borewell water (ranging from 500-800 ft in depth) stored in mini water tanks with attached public taps	Poor groups living in urban villages, slums, and revenue layouts	Public (ULB)	Rs 44/month (very few pay)
Piped borewell water	Lower-middle income groups in revenue layouts	Public (ULB)	Rs 44/month (very few pay)
Tankers (sourced from private borewells belonging to large landowners)	Middle class households	Private	~Rs 50-70/kL (Rs 200-300 per 3-4 kL tanker load) and up to Rs 1,200/month
Individual borewells (ranging from 800-1,200 ft in depth)	Wealthier middle class households. Sufficient land and documents are needed to get a power connection to pump water up	Private	Water is free, but costs a one-time amount of Rs 2 lakh to sink a borewell + recurring electricity costs
Bottled drinking water	Purchased by wealthier middle class households to supplement tanker and bore water	Private	~Rs 6,000/kL (Rs 30 per 5 L bottle), and up to Rs 300/month
Piped Cauvery water (2-4 hours per day every other day)	Only 10% of the periphery and in BDA-approved areas only. Areas include Kengeri Satellite Township, Yehalanka, technology parks like the Information Technology Park Ltd, a few large apartment complexes, etc	Public (BWSSB)	Connection charge of Rs 1,600-2,000 + prorata charges Domestic tariffs are variable. In some CMCs, BWSSB charges Rs 25/kL. In others, the domestic block tariffs are: 0-8 kL; Rs 6/kL 8-25 kL; Rs 9/kL 25-50 kL; Rs 30/kL Above 50 kL; Rs 36/kL Industrial tariffs vary from Rs 60-70/kL

Source: Fieldwork carried out by the authors in 2007-08 and <http://www.bwssb.org>

lag in water delivery in GBWASP has meant that beneficiaries are paying for capital investments for piped water well in advance of delivery while *continuing* to pay daily coping costs. Third, because parts of the periphery have been built up in a haphazard non-grid like fashion, laying new pipelines and obtaining right of way approvals are costly and time-consuming in certain neighbourhoods. We find that the financing model of GBWASP discussed next is highly disconnected from these realities.

2 The Case of the GBWASP

2.1 Rationale and Institutional Architecture

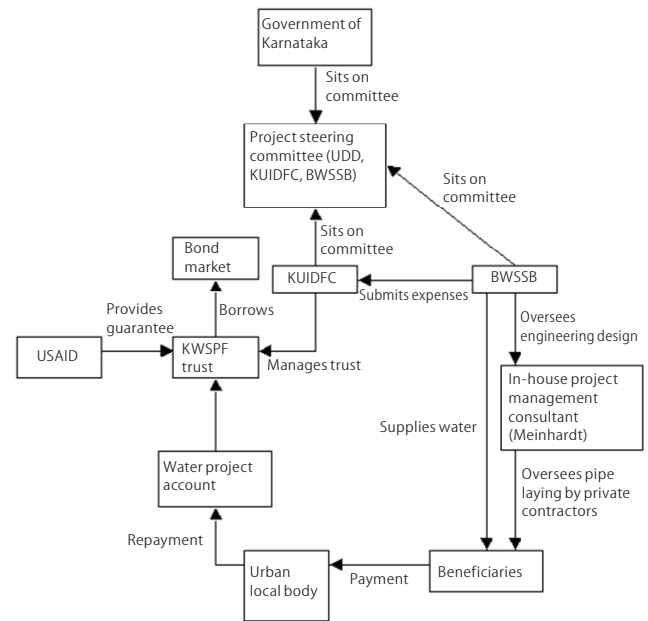
GBWASP was first discussed in 1998 when the then chief minister directed the BWSSB to prepare proposals for the supply of piped water and sanitation to the eight ULBs surrounding Bangalore. In 1999, BWSSB hired Kirloskar Consultants and Water and Power Consultancy Organisation (WAPCO) to prepare a detailed project report based on population projections for the next 20 years. A year later, the government of Karnataka abandoned the project on account of high costs and lack of resources to finance the project.

In 2003, the project was resurrected when the state government recruited the Indo-USAID's Financial Institutions Reform and Expansion-Debt (FIRE-D) Component Project to develop a market-based financing framework for GBWASP. The stated goals of FIRE-D are to develop and manage bankable urban infrastructure, mobilise finance, expand the role of the private sector, and build the capacity of urban sector professionals in India (USAID 2006). FIRE-D develops "pooled financing" models for infrastructure delivery in smaller Indian cities (Section 2.2 discusses this in further detail). The government of Karnataka selected USAID's financing model despite an offer to provide a loan for both the water supply and sanitation component by the Housing and Urban Development Corporation (HUDCO) in 2004. The latter was rejected on grounds that this financial route required a larger government guarantee. Subsequently, a decision was also made to borrow from the World Bank through its Karnataka Municipal Reforms Project (KMRP) to fund the sanitation component of GBWASP.

By early 2004, a project steering committee was formed consisting of representatives from the department for municipal administration (DMA), the Karnataka Urban Infrastructure Development and Finance Corporation (KUIDFC) (a public sector company created to channel loans), the Urban Development Department (UDD), the BWSSB, and commissioners of the eight ULBs. Later, a decision was taken to form a subcommittee consisting of five senior IAS officers from the five departments listed above (GOK 2004). Thus, several important decisions concerning the project largely involved the input of only a core group of senior bureaucrats (Figure 1).

Two additional players entered the project from 2004 to 2006 on the request of the state government to explore the feasibility of a private sector contract: the water and sanitation programme of the World Bank and the International Finance Corporation (IFC), a branch of the World Bank which funds the private sector. IFC's proposal for a delegated private management contract,

Figure 1: Financial and Institutional Arrangements in GBWASP



however, faced sharp criticism from the employees union as well as the management of the BWSSB on the grounds that the privatisation proposal was financially unviable (BWSSB 2006). In 2005, NGOs and slum-dweller organisations came together under the Campaign against Water Privatisation-Karnataka (CAWPKA) to protest privatisation.⁵ The privatisation agenda has currently been stalled although it is not unlikely that it will be pursued in the future.

2.2 The Pooled Financing Model and Beneficiary Capital Contributions

As introduced above, the main mechanism of FIRE-D projects is "pooled finance". Similar to the United States bond bank, by pooling finance, bonds are repaid by several local borrowers in order to diversify risk and lower interest rates (USAID 2006). Pooled finance has the advantage of being able to ensure that smaller less credit-worthy cities can gain a credit rating in order to borrow from the market. In GBWASP's case, only by pooling the revenues of all ULBs in a fund known as Karnataka Water and Sanitation Pooled Fund (KWSPPF) managed by KUIDFC was it possible to get an investment-grade credit rating in order to borrow from commercial markets. KWSPPF acts as a financial intermediary between municipalities and the capital market by borrowing from the market and on lending to the ULBs on its own terms. In June 2005, the KWSPPF floated 1,000 tax-free municipal bonds each valued at Rs 10 lakh (a total of Rs 100 crore), an annual interest rate of 5.95%, and a lifetime of 15 years (USAID 2006). This pooled fund is backed by a 50% guarantee on the principal amount from the US government to protect investors from defaults by ULBs and to reduce the cost of borrowing. Based on USAID's model, the budget for GBWASP was determined as given in Table 2 (p 57).

Although commonly deployed in the US, municipal bonds are relatively new in India. Ahmedabad was the first city in India to attempt bond financing in 1998 (again, through USAID support), and subsequently, FIRE-D designed a pooled financing mechanism

with municipal bonds for 14 smaller ULBs in Tamil Nadu via the Tamil Nadu Urban Development Fund (TNUDF). The Tamil Nadu experience with pooled finance reveals that the TNUDF's primary criterion for fund allocation and project success is financial. Vijayabaskar and Wyatt (2005) cite a senior member of the TNUDF saying, "We basically look for viability – whether the ULB has the capacity to absorb the resources and whether we will be ensured of our returns on our investment". This demonstrates that project implementation and improved water supply outcomes are not the primary focus of the project. The World Bank considered this pooled finance experience a success not because of effective project implementation or improved outcomes but because, "...TNUDF II significantly helped advance the agenda of demonstrating the possibility of *sustainable market-based finance for cities...*" (World Bank 2004a emphasis added).

This model of debt raises several important concerns. First, it is questionable whether the ULBs were in a position to assume the debt burden for such a capital-intensive project in the first place. A study by the Centre for Budget and Policy Studies, Bangalore, found that except for Byataranapura, no ULBs were capable of repaying the loan without being in the red given their expenditure histories (Rath and Rao nd). This finding is particularly troubling given that zero consideration was given to alternative, decentralised water supply solutions which may have been less expensive to shoulder. Second, the mechanisms ensuring debt repayment undercut the notion of "self-government": FIRE-D ensured that ULBs repay debt from the market (called "priority debt") before any other types of debt. This guarantees that investors are paid first, increases the creditworthiness of the borrower, and reduces the risk of default from the investor's perspective (ibid). In addition, the main security for debt is structured payments from the local government's property tax revenues that are tied to an escrow account. In other words, forced debt repayment for GBWASP could potentially squeeze funds for other needed investments. After the merger of the eight ULBs in early 2007, the responsibility of debt payment technically lies with the unified city corporation. It remains to be seen whether the debt will be transferred to BWSSB or remain with BBMP.

Table 2: GBWASP's Budget

	Amount (Rs crore)	Contribution (%)	Revised Contribution (%)
Beneficiary contribution	119.45	35	>35
Grants from GoK	74.28	22	17
Mega city loan from Gol	46.82	14	>14
Market borrowings through bonds	100	29	22
Total (2003 estimate)	340.55		
Cost escalation	106.51		
Revised total (2007 estimate)	447.06		
Additional amount sourced through JNNURM for 100 MLD augmentation	12.26		

As Table 2 shows, the total cost of the project was initially estimated at Rs 340.55 crore – an amount that is around 50% higher than the original feasibility report – with Rs 119.45 crore coming from citizens themselves (35%). This amount was determined based on the assumption that 50% of domestic properties would contribute to the project. After pipe laying began in the periphery,

however, it was realised that rapid and haphazard growth in the periphery had not been accounted for, necessitating a much larger amount of piping materials. This escalated the cost by Rs 106.51 crore or 31%. In order to cover this additional cost, KUIDFC announced that it would increase the amount of borrowings from the mega city loan in 2007. Later that year, the project sourced additional funds from JNNURM as can be seen from the last row of Table 2. The authors discovered that to date, approximately Rs 200 crore has been collected from residents, or over 35% of the project's revised costs. Although we were not able to ascertain the exact contribution to the project's costs, it is likely that up to 50% of this project will be borne by residents themselves. Understandably, capital contributions are a highly contentious aspect of this project. In the rest of this section, we analyse this policy as well as precedents in the literature.

In line with current thinking in development agencies (e.g., World Bank 2004b), GBWASP deploys a language of "citizen as stakeholder" and equates participation with financial contributions to new infrastructure investments. An information packet published by the UDD states:

The project has a very large capital expenditure with the primary benefits of this expenditure flowing to the households that take the connections. The burden has to be, therefore, shared by the beneficiary citizens to some extent. In this process, the status of citizens is elevated to that of stakeholders which will facilitate their participation in the management of the assets created under the project (GoK 2005a).

Around the world, anecdotal evidence suggests that it is becoming common for beneficiaries to be asked to contribute to project costs either through "cash or in kind". This is particularly true for small-scale and community-based projects in rural areas, where villagers may donate land, provide labour, or collect funds for water and sanitation infrastructure. In the urban context, the Orangi Pilot Project in Pakistan is a well-known example of communities raising their own funds for sanitation projects. In Tamil Nadu, under the *Namakku Naame* (self-sufficiency) scheme, citizens can request basic infrastructure such as streetlights, parks, etc, from the government by paying about 25% of the capital costs upfront. Sanitation infrastructure has also been provided in the town of Alandur in Tamil Nadu through capital contributions from citizens (WSP 2007). In most of these cases, the initiative has come from communities themselves and case studies note that there is active participation from local governments, elected representatives and RWAs.

GBWASP presents a rare example of large-scale, top-down sourcing of capital from beneficiaries themselves with priority being granted to financial closure rather than "stakeholder" (who, in this case, is also the consumer) protection. The sequence of implementation of GBWASP is stated as follows: (1) Collection of at least 60% of BCC across the city, (2) financial closure of the project, (3) award of the contract for distribution pipelines, (4) award of the contract for feeder mains, (5) commencement of work by contractor, and finally, (6) individual connections by BWSSB after completion of works (KUIDFC 2004). Thus, the collection of contributions from beneficiaries was demanded in advance of beginning the actual physical construction of the project, without making allowances for potential delays. Even without

delays, it is well known that the process of approval, financial closure and awarding contracts through tenders commonly takes 18-30 months; this fact was not sufficiently communicated to beneficiaries from the start.

The initial specified BCC in 2003 was a one-time flat rate of Rs 8,500 for domestic properties and Rs 17,000 for non-domestic users – amounts higher than are imaginable by the majority of

Table 3: Current Structure for Beneficiary Capital Contributions

	Charges Per Property Size (Rs)			
	< 600 sq ft	600-1,200 sq ft	1,200-2,400 sq ft	>2,400 sq ft
Residential	2,500 (now waived)	5,000	10,000	15,000
Commercial	5,000	10,000	20,000	Rs 8/sq ft
Penalty per month starting 1 August 2005	50 (now waived)	100	200	300

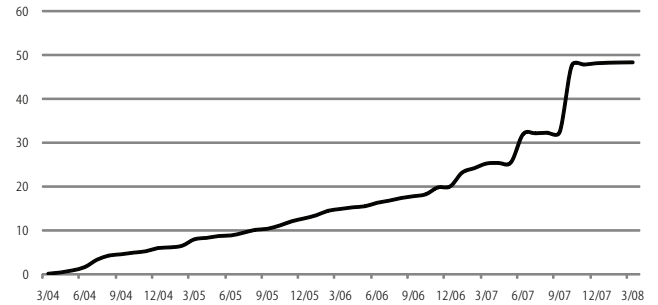
Source: (GoK 2005b).

peri-urban residents. This was later revised to a slab system of Rs 10,000 for the lowest slab for plots measuring up to 2,400 sq ft. However, after representations by citizen groups and recommendations from a visiting World Bank team, this slab system was revised again to include smaller property sizes (Table 3). The current scheme charges residents on the basis of plot size even though the diameter of the pipeline connecting each household is the same. In this scheme, the poor are those classified living in dwelling size of 600 sq ft or less, while the wealthy are those living in dwelling sizes of greater than 2,400 sq ft.⁶ Due to demands by the CAWPKA, the government of Karnataka also conceded a full waiver in the BCC for households living on dimensions of less than 600 sq ft.

Citizens were also required to pay a penalty in the event of delayed payment. A cut-off date of 31 July 2005 was set as per a revised government order, after which a monthly fine was demanded on the basis of property size (see last row of Table 3). This measure was taken in order to pressure beneficiaries to

contribute to the project. A local NGO, Janaagraha, was also contracted through funding from WSP-SA to launch its participatory local capital area expenditure (PLACE) programme – an institutional mechanism and citywide information campaign.

Figure 2: Cumulative Beneficiary Capital Contribution in Bommanahalli (2004-08, in Rs crore)



Source: Bommanahalli Zonal Office.

For several reasons, including Janaagraha’s own stated dissatisfaction with the lack of a pro-poor policy as well as opposition to the organisation’s involvement in the project by local groups, Janaagraha pulled out of GBWASP in early 2006.

3 Findings and Discussion

Primary data collected from Bommanahalli on beneficiary contributions revealed the following. In Bommanahalli alone, throughout the period 2004-08, approximately Rs 50 crore had been collected by April 2008 (Figure 2). The threat of late penalty fees was one reason why several people came forth with payments prior to 1 August 2005. But several households also contributed after the cut-off date, most notably in the months prior to December 2007 due to the Water Board’s announcement that water supply would commence shortly in a few wards (see jump

SAMEEKSHA TRUST BOOKS

1857

Essays from *Economic and Political Weekly*

A compilation of essays that were first published in the EPW in a special issue in May 2007. Held together with an introduction by Sekhar Bandyopadhyay, the essays – that range in theme and subject from historiography and military engagements, to the dalit *viranganas* idealised in traditional songs and the “unconventional protagonists” in mutiny novels – converge on one common goal: to enrich the existing national debates on the 1857 Uprising.

The volume has 18 essays by well known historians who include Biswamoy Pati, Dipesh Chakrabarty, Peter Robb and Michael Fisher. The articles are grouped under five sections: ‘Then and Now’, ‘Sepoys and Soldiers’, ‘The Margins’, ‘Fictional Representations’ and ‘The Arts and 1857’.

Pp viii + 364

2008

Rs 295

Available from

Orient Blackswan Pvt Ltd

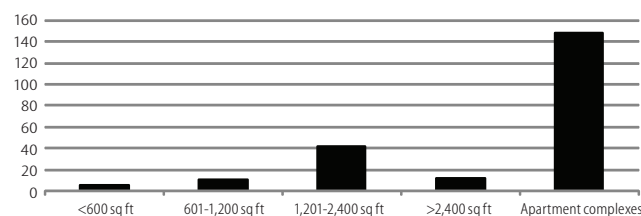
Mumbai Chennai New Delhi Kolkata Bangalore Bhubaneshwar Ernakulam Guwahati Jaipur Lucknow

Patna Chandigarh Hyderabad

Contact: info@orientblackswan.com

in contributions between September and December 2007 in Figure 2). This fact reveals that when beneficiaries found the promise of water delivery credible, they were willing to come forth with contributions. It also shows that several residents made investments well in advance for water delivery, but most are likely to receive water only in 2012, after the completion of bulk water supply works. Although it is true that the largest contributors to BCC overall are new apartment buildings that must pay for GBWASP prior to getting building plans approved (Figure 3), individual site owners falling in the 1,201-2,400 sq ft category are not insignificant contributors to the project. This group, in particular, continues to face daily coping costs of water, while receiving little information about the project.

Figure 3: Beneficiary Capital Contributions by Plot Area in Ward 27 of Bommanahalli
(April 2005–March 2008, in Rs lakh)



Source: Bommanahalli Zonal Office.

We argue that the GBWASP is a case of “cart before horse” syndrome. The market-based financial framework for the project – including the structure for BCC payments, credit rating of municipalities, selection of municipal bond issuers, etc – were all designed and executed with meticulous detail well in advance of one crucial missing ingredient: water supply. The delay in water supply has resulted in frustration, confrontation and a loss of credibility in the upfront payment system. We discuss the main arguments of this paper and the implications for lessons learned below.

(1) Payment Has Not Guaranteed Customer Entitlements: The implications of considering citizens as stakeholders in capital investments are very serious in terms of two issues: equity and entitlements. In the case of sub-Saharan Africa, Jaglin (2003) argues that equating participation with financial contributions raises many questions around equity; indeed, the majority of greenfield investments for water and sanitation are taking place on the fringes of cities, areas that concentrate the urban poor who are now expected to bear the financial burden of these new investments. In Greater Bangalore, several residents interviewed argued that although it is justified to charge consumers depending on the amount of water they consume, from an equity standpoint, it is difficult to justify charging peripheral customers for capital costs when core customers have not thus far been asked to contribute towards capital costs. It would have been more equitable had the costs for GBWASP been borne by all of Bangalore’s residents instead of just peripheral populations. After all, the nature of a networked infrastructure such as water is such that the system is interconnected. New feeder mains, pumps, overhead tanks, and bulk water supply to this network will benefit the core and the periphery alike. From an engineering standpoint, it makes little sense to single out peri-urban customers.

Still, if peri-urban customers must be singled out, there are serious repercussions to calling payees “stakeholders”, creating the impression that the utility and the citizens have equal “stake” in the infrastructure. One RWA even suggested that the use of the term “stakeholder” has no meaning in this project and is unwarranted, if not illegal. Most residents interviewed reacted to the fact that payment guaranteed neither improved responsiveness from the project implementers nor proactive information dissemination. Some RWAs collected capital contributions from all households and deposited the total amount with BWSSB in the hopes that this would convince authorities to prioritise water supply to their areas. We suggest that in the future, financial contributions by citizens should ensure certain minimal customer entitlements. In other words, if citizens are expected to behave like customers, they should be treated like customers because there is no doubt that they will demand to be treated as such. We also make the point that in this project, and increasingly in Indian cities, economic calculations of participation have overshadowed the agenda for more meaningful and democratic deliberation and debate by citizens in decision-making.

(2) GBWASP’s Model Is Disconnected from Urbanisation Patterns: As described in Section 2, the periphery is a heterogeneous and haphazardly developed expanse. The majority of development (revenue layouts and slums) is “unauthorised” which presented considerable difficulty to pipeline laying contractors. Field engineers describe that in these areas, local roads and sewers (where they exist) do not follow gridlines and do not link up with main road and sewer lines. There is also little adherence to legal norms regarding public ownership of space, seen, for instance, in private encroachments of public roads and sewers. This has necessitated greater time spent in negotiations and a far greater amount of distribution pipeline than originally envisaged, thus prolonging the schedule for laying pipelines across two phases. It also required a revision of earlier engineering plans designed by WAPCO/Kirloskar during the project’s second incarnation when a new project management consultant, Meinhardt, was brought in.

While delays by the project implementers are one result of the lack of attention to actual patterns of urban settlement, another problem relates to equity. Because some areas of the periphery are technically more difficult to connect and often far poorer (e.g., Bandepalya slum in Bommanahalli which is perched on an abandoned quarry), the result is that some areas will get connections and water in advance of others, and some areas may never get piped water supply. Even after the completion of the distribution pipelines, only approximately 1,00,000 connections have been provided as against a total estimated potential of 4,50,000 in the periphery.⁷ A preference to those areas that can be billed for water consumption is likely to be given as against those areas that are more impenetrable by utility employees who are tasked with raising revenue. Moreover, faced with a huge demand from new apartment buildings, there is doubt whether water will be supplied to all revenue pockets, even though several households living in these areas have paid the BCC.

The sheer population growth and demand in Bangalore have also made the supply projections under GBWASP unrealistic and reveal that they may have been technically unsound to start with. A report of the USAID FIRE-D, 2003 claims that with the completion of Cauvery Stage IV (Phase I), 135 MLD was to be allocated to peripheral areas (USAID 2003). In actual fact, by the end of 2005, this amount was largely absorbed by core city areas where demand continues to outstrip supply. In retrospect, setting aside 135 MLD for future customers in the periphery when water demand in pre-existing service areas is itself escalating daily, and, as described above, the system is interconnected, seems to be an unrealistic assumption. To make up for this "lost" water, the BWSSB is using JNNURM funds to supply an additional 100 MLD of Cauvery Water by installing booster pumps on the transmission mains. Over 70 wards that are aligned with the existing feeder mains were selected for commissioning under this scheme. Other wards (250 in total) will be commissioned as the rest of infrastructure is completed. Water will be shared among the core city and peripheral areas on a staggered basis (resulting in supply that could be as low as once a week), which will greatly lower the per capita "standard" of 125 lpcd originally envisaged in project documentation (USAID 2003). This, again, is a reflection of the project superimposing standards and calculations derived from models that are not appropriate for Bangalore's urban context.

Project authorities have argued that when Cauvery Stage IV (Phase II) is completed, water supply will be more regular and satisfactory. This argument tends to be difficult to digest for residents who have paid their BCC amounts (with penalty) and who continue to pay coping costs on a daily basis. The studies on the willingness to pay did not factor in the time delay between the amount paid today and the delivery of water seven years later. Had the studies done this, it is likely that willingness and

ability to pay in the periphery would have been considerably lower than reported. Settlement patterns and varying coping costs should be accounted for in the technical and financial design phase, i.e., prior to project execution.

(3) Lack of Political Buy-in and Community Acceptance and Participation: The lack of political buy-in at the local level and poor information dissemination have also hindered the project's success at collecting BCC. Our interviews revealed that faced with few answers, councillors urged their constituencies not to pay BCC and to wait for water supply first. Although Janaagraha conducted meetings in 2005 in some zones in Greater Bangalore (note that its liaison office was located in the core city and not on the outskirts), once it withdrew from the project, there was no concerted effort to channel information about the project from the top-down. RWAs had to rely on media reports and meetings with BWSSB's engineers to glean data on the project's progress. Very few RWAs were satisfied with the amount of information they received. Technical and financial details are being handled by the project management consultant housed in BWSSB and KUIDFC with insufficient communication to citizens themselves, let alone elected representatives and BWSSB field officials. Elected representatives have since been excluded all together from decision-making because of suspended elections since the end of 2006. In an era when Indian cities have been attempting decentralisation and the devolution of water supply and sanitation to ULBs – and given the fact that decentralisation is a mandatory reform under JNNURM – it is difficult to see how this project supports this overall agenda. It is important that elected representatives are engaged at every stage, and information to the public about the project's progress should be proactively provided, especially in the event of delays.

Economic & Political WEEKLY

REVIEW OF WOMEN'S STUDIES

April 25, 2009

Women's Citizenship and the Private-Public Dichotomy

– Maithreyi Krishnaraj

Gendered Citizenship and Women's Movement

– Anurekha Chari

Girl Abroad: The Private and the Public in *Jab We Met...*

– Shoba Venkatesh Ghosh

Exploring Gender, Hindutva and Seva

– Swati Dyahdroy

Maya Machhindra and *Amar Jyoti*: Reaffirmation of the Normative

– Vaishali Diwakar

Reading Devadasi Practice through Popular Marathi Literature

– Anagha Tambe

For copies write to:

Circulation Manager,

Economic and Political Weekly,

320-321, A to Z Industrial Estate, Ganpatrao Kadam Marg, Lower Parel,

Mumbai 400 013.

email: circulation@epw.in

One additional cause of poor political buy-in and community acceptance is the lack of coordination between BWSSB and KUIDFC on the one hand, and between BWSSB and BBMP on the other. This has resulted in further confusion among residents and has raised larger questions about what the entitlements of BCC are. For instance, in 2007 the BBMP announced the *Akrama Sakrama* scheme to regularise “illegal” commercial and residential buildings (mainly in the peripheries) that had violated planning norms on payment of a fee. Those who did not pay to be regularised were threatened by BBMP with disconnection of water supply. This caused concern among households that had paid BCC to BWSSB but not the Sakrama fee to BBMP and were consequently unsure whether their water supply could be stopped.

(4) Modifications Have Been Essential to Sustain Credibility:

Very recently, the water board has taken certain key decisions to sustain the legitimacy of the project as well ensure continued revenue generation. Four of these modifications are noteworthy. First, due to several representations being filed by RWAS – not the least of which is the critique that although residents have paid late penalties, the government has not been penalised for late water delivery – the BWSSB has come forth with an important decision to waive penalty payments after 31 December 2007. That is, a maximum of 30 months penalty payment (1 August 2005-31 December 2007) can be paid, and no more. Second, based on political pressure, the water board has decided to connect households regardless of BCC payment hoping that this will serve as a confidence building measure for residents. Third, a decision was taken to allow BCC payments in 20 instalments, thus easing the upfront burden. Fourth, it is no longer required that residents show formal proof of tenure or any other document in order to pay the BCC, unlike originally stipulated in project pamphlets. While the first two measures were taken in order to quell criticism of the project and to win public and political support, it can be argued that the second two measures were taken in order to ensure continued revenue through BCC by reducing barriers to payment. These modifications reveal the importance of strategic manoeuvres and project re-engineering by governing institutions faced with difficult on-the-ground-realities.

4 Conclusions

Market-based models like pooled finance are being widely adopted across the country. The Eleventh Five-Year Plan has articulated a need for PSP in water supply and sanitation in cities, but clearly stated that, “without aiming at full cost recovery, private sector participation cannot be a successful proposition” (MOUD 2006: 2). The government of India in November 2006 launched a Pooled Finance Development Fund (PFDF) with Rs 2,500 crore funding in the Eleventh Plan period that will support ULBs to access capital markets based on their creditworthiness through state-level pooled financing mechanisms (ibid). The Indo-US AID’s FIRE-D project supported the union ministry of urban development in formulating the PFDF guidelines (Vaidya and Vaidya 2008). These guidelines urge states to create their own pooled financing entities so as to benefit from central assistance.

Pooled financing has also been promoted in the 63 JNNURM cities.

Given the enthusiasm within India for market-based models, it is imperative that we closely examine their workings on the ground. This article takes the case of the GBWASP, a model that for the first time introduces the concept of capital cost recovery from customers. While GBWASP’s financial model also relied on municipal bonds based on credit ratings, government loans and guarantees, a substantial component of capital cost recovery was to come from customers themselves. If successful, this model will in all likelihood be replicated in other Indian cities.

There is no doubt that the GBWASP was greatly complicated by the creation of the BBMP at a late stage of the project. The eight ULBs that were covered under GBWASP are now part of five different zonal offices of BBMP making for considerable administrative confusion arising from unequal BCC payments (and thereby differing entitlements to water supply), maintenance of new and existing water infrastructure and responsibility for debt repayment. There are, however, many things that we can learn from this case.

Our research reveals the serious disconnects between the model and technical, social and economic realities on the ground. The lack of attention paid to the rapidity and heterogeneity with which the peripheries were developing resulted in severe delays in installing pipelines, miscalculations in length of pipeline needed, and a low ability to service technically difficult areas which typically are poorer, unauthorised, and less able to pay for an expensive piped water system. Both technical feasibility and the drive to generate revenue favoured the connection and supply of water to richer areas. The growing gap between demand and supply for water also sets up a dynamic of competition between core areas and peripheral areas with the BWSSB trying to balance these competing needs by staggering provision of water to these areas. This will mean lowering “standards” of per capita water provision in sharp contrast with original project goals.

The time lag between payment of BCC (with penalty) and supply of water has forced customers to pay daily coping costs, while they live with the uncertainty of not knowing when they will receive water. While their contestations have resulted in modifications to the BCC rates and manner of payment as well as removal of the penalty after 31 December 2007, their frustration and apathy toward government has not abated. The project has been marked by an overall lack of information. The non-inclusion of elected representatives in the GBWASP has had particularly serious consequences for the success of the market-based model being pioneered.

The research also highlights the serious implications of considering citizens as stakeholders in capital investments. What are the entitlements that come with BCC payments? Can the project agencies actually fulfil them? Can we justify burdening peripheral customers (who are generally poorer) with these costs, when those living in the core did not bear these costs and are not sharing them now? These are questions that citizens themselves are posing and that the BWSSB, let alone proponents of the market-based financing model, are hard-pressed to answer. GBWASP has revealed that customer responsiveness has not increased and participation has not gone beyond a narrow monetary understanding.

NOTES

- 1 This is approximately \$13 billion. Note that 1 crore = 10 million. 1 lakh = 1,00,000. \$1 is approximately Rs 40.
- 2 The 12th Finance Commission recommended that the central government stop providing guarantees to states making them directly borrow from IFIs or the market.
- 3 ULBs are considered autonomous urban local self-governments. There are 222 ULBs in Karnataka falling under four main classifications: corporations are the largest, followed by CMCs, TMCs, and town panchayats (TPs) or village governments.
- 4 While anybody can dig a borewell and gain access to groundwater, pumping water needs a power connection which cannot be obtained without proper land documents.
- 5 Subsequent to the demand, a committee with a representative from the BWSSB, USAID, WSP-SA prepared a pro-poor policy that was not made available in a draft stage to the elected representatives or slum-dwellers or others anywhere.
- 6 Our interviews found that this rationale is often challenged by poorer families living in the 1,200-2,400 sq ft slab.
- 7 The laying of distribution pipelines is nearly complete, and approximately, one-third of the construction of feeder mains remains. A few wards aligned with existing feeder mains have been commissioned and are likely to get water before the end of 2008.

REFERENCES

- Bakker, K (2005): "Neoliberalising Nature? Market Environmentalism in Water Supply in England and Wales", *Annals of the Association of American Geographers*, 95.
- BWSSB (2006): "Letter from the Chairman Dated February 2: Regarding Private Sector Participation in Operation and Maintenance of Water Supply and Sewerage (UGD) System in All 8 ULBs Located Around Bangalore City".
- Gol (2005): *Jawaharlal Nehru National Urban Renewal Mission: An Overview* (New Delhi: Government of India).
- GoK (2003): "Urban Drinking Water and Sanitation Policy Statement of the Government of Karnataka".
- (2004): "Proceedings of the Second Meeting of the Project Steering Committee on GBWASP Held on Tuesday the 16 March at 1:20 PM in the Board Room of KUIDFC, Bangalore".
 - (2005a): "Greater Bangalore Water and Sanitation Project, dated 5 May 2005".
 - (2005b): "Proceedings of the Government of Karnataka: Implementation of Water Supply Project in Seven City Municipal Councils and One Town Municipal Council in Bangalore Metropolitan Area with Pooled Finance Framework – Collection of Beneficiary Capital Contributions from Users, dated 28 February 2005".
- Jaglin, S (2003): "The Right to Water versus Cost Recovery: Participation, Urban Water Supply and the Poor in Sub-Saharan Africa", *Environment & Urbanisation*, 14.
- Kamath, Lalitha, Vinay Baindur and P Rajan (2008): "Urban Local Government, Infrastructure Planning and the Urban Poor" (Bangalore: CASUMM in collaboration with CIVIC).
- KUIDFC (2004): "Greater Bangalore Water Supply and Sewerage Project (GBWASP): Presentation Made by the Karnataka Urban Infrastructure Development Finance Corporation on October 16", Bangalore.
- Kundu, Amitabh (2000): *Urban Development, Infrastructure Financing and Emerging System of Governance in India: A Perspective* (Paris: NESCO).
- MoUD (2006): "Report of the Working Group on Urban Development (Excluding Urban Transport), Urban Water Supply and Sanitation (Including Low Cost Sanitation, Sewerage, and Solid Waste Management) and Urban Environment for Eleventh Five-Year Plan (2007-2012)".
- Rath, Sharadini and Madhusudhana Rao (nd): "The Greater Bangalore Water Supply Project" (Bangalore: Center for Budget and Policy Studies).
- Sangameswaran, Priya, Roopa Madhav and Clifton D'Rozario (2008): "24/7, 'Privatisation' and Water Reform: Insights from Hubli-Dharwad", *Economic & Political Weekly*.
- Schenk, Hans (2001): *Living in India's Slums: A Case Study of Bangalore* (New Delhi: IDPAD).
- Shaban, Abdul and R N Sharma (2007): "Water Consumption Patterns in Domestic Households in Major Cities", *Economic & Political Weekly*, Vol XLII: 2190-97.
- UNDP (2006): *Human Development Report* (New York: United Nations Development Programme).
- USAID (2003): "Pooled Finance Framework For Greater Bangalore Water Supply and Sewerage Project for Eight Cities in Bangalore Metropolitan Area" (Bangalore: Indo-USAID Financial Institutions Reform and Expansion Project).
- (2006): "Greater Bangalore Water and Sewerage Project", Indo-USAID FIRE D Project Note 35.
- Vaidya, Chetan and Hitesh Vaidya (2008): "Creative Financing of Urban Infrastructure in India through Market-based Financing and Public-Private Partnership Options" in 9th Metropolitan Congress, Sydney.
- Vijayabaskar, M and A Wyatt (2005): "The World Bank and the Governance of Development in India" in Annual Conference of the UK Political Studies Association, Leeds.
- WaterAid (2005): "Drinking Water and Sanitation Status in India".
- World Bank (2004a): "Project Information Document: Tamil Nadu Urban Development Project – III" (New Delhi: World Bank).
- (2004b): *World Development Report* (Washington DC: World Bank).
- WSP (2007): *Engaging with Citizens to Improve Services* (Washington DC: Water and Sanitation Program-South Asia, World Bank).

Economic & Political WEEKLY

SPECIAL ISSUE

INTER AND INTRA-STATE DISPARITIES

June 27, 2009

Implications of Regional Disparity for Finance Commission Devolutions

–Chirashree Das Gupta

Some Normatively Relevant Aspects of Inter-State and Intra-State Disparities

–Achin Chakraborty

Political Implications of Inter-State Disparity

–Prabhat Prasad Ghosh, Chirashree Das Gupta

Intra-State Economic Disparities: Karnataka and Maharashtra

–M H Suryanarayana

Intra-State Disparities in Gujarat, Haryana, Kerala, Orissa and Punjab

–Amaresh Dubey

Intra-State Disparity in Government Expenditure: An Analysis

–Govind Bhattacharya

An Investigation into the Inter-District Disparity in West Bengal, 1991-2005

–Ajitava Raychaudhuri, Sushil K R Halder

Intra-Regional Disparities, Inequality and Poverty in Uttar Pradesh

–D M Diwakar

Intra-Regional Inequality and the Role of Public Policy: Lessons Learnt from Kerala

–Pinaki Chakraborty

For copies write to:

Circulation Manager,

Economic and Political Weekly,

320-321, A to Z Industrial Estate, Ganpatrao Kadam Marg,

Lower Parel, Mumbai 400 013.

email: circulation@epw.in