



The Water and Sanitation Program is an international partnership for improving water and sanitation sector policies, practices, and capacities to serve poor people

Connecting the Slums

A Utility's Pro-Poor Approach in Bangalore

The Bangalore Water Supply and Sewerage Board began experimenting with service delivery in slums in 2000. Over the next five years, its newly created in-house Social Development Unit mobilized 46 poor communities, approximately 10 percent of the city's slums, of which more than half have successfully connected to the BWSSB network and continue to be served with water, receive bills, and make payments.



BWSSB managed to significantly increase access for the poor to piped water supply while committing to good management and cost recovery. Its slum program is slowly but surely being scaled up and provides an important model for pro-poor utility reform in other cities.

Executive Summary

Over a five-year period from 2000 to 2005, the Bangalore Water Supply and Sewerage Board (BWSSB) experimented with service delivery in slums, first through three pilot projects under a donor-funded program, and then through a newly created Social Development Unit (SDU). By early 2005, the SDU had mobilized 46 poor communities, approximately 10 percent of the city's slums, of which more than half had successfully connected to the BWSSB network and continue to be served with water, receive bills, and make payments. The Board's work in slums achieved important objectives by:

- increasing the number of slum households connected to the metered network;
- decreasing residents' dependency on 'free' water through public taps or illegal connections; and
- reducing non-revenue water.

The program has had significant impact despite the fact that it was launched without a set of specific objectives, operated in a rather ad hoc manner, and received variable support from the rest of the utility. It is, however, indigenous to the BWSSB, has provided an important model, and is slowly but surely being scaled up.

This field note summarizes the experience of the BWSSB. It examines the major external triggers – a successful pilot project, expansion of the water supply network and the end of external funding for public taps – that led to the utility embarking on a program to connect the poor and bring them onto the customer base. It also looks at the internal factors contributing to success, which included willingness to make internal policy changes, the establishment of a unit tasked with reaching out to the slums, and the unexpected impact of revenue targets on the incentives for frontline staff. It concludes that the BWSSB managed to significantly increase access for the poor within the context of a commitment to good management and cost recovery, and that there are valuable lessons for pro-poor utility reform in other cities.

Slums in Bangalore

Although the percentage of the population living in slums is certainly greater in Mumbai or Delhi, it is estimated that up to 20 percent of Bangalore's 6.5 million people live in slums with little or no access to basic services (see Boxes 1 and 2). The number of slums in Bangalore varies widely according to how they are defined, and figures are frequently inconsistent. This Field Note focuses on the area within greater metropolitan Bangalore under the jurisdiction of the Municipal Corporation. According to the Census of India, in 2001, this area had 4.3 million inhabitants and 733 'slum enumeration blocks' that housed 345,200 people. In contrast, the Karnataka Slum Clearance Board (KSCB), based on 2004 data, maintains there are only 367 slums in the same area, but with a much greater population of 592,000 people.

Thus, while contradictory, official figures put the proportion of the city's population residing in slums somewhere between 8 and 15 percent. Non Governmental Organizations (NGOs), however, consistently estimate an even larger figure, closer to 20 percent.

Water Supply in Slums

Until recently, most slum dwellers obtained their water from a combination of private boreholes, water vendors, government tankers, public taps and illegal tapping of BWSSB lines. Legal

household connections were rare in the slums, as BWSSB's policy stated that a connection would not be approved unless the resident could provide proof of tenure. Most slum dwellers were unable to do this, either because they did not have legal land tenure, or else had no paperwork to prove it. (For example, only 53 of all the slums in the city had formal tenure and very few residents of these slums actually paid any property tax.)

In addition, an estimated 250 slum settlements were in areas of the city far from the main network. This was because the municipal boundary revision to include 27 new wards and



In an unimproved slum, children collect puddle water and filter it through a cloth.

extend the borders of 28 older wards occurred as late as 1995. These new areas had yet to be provided with water distribution systems.

This did not mean that none of the slum dwellers were using BWSSB water – in fact a 2001 survey¹ reported that just over half of the slums had access to

Box 1: Bangalore's institutions

Greater Metropolitan Bangalore: Comprises the Bangalore City Municipal Corporation plus seven adjoining municipalities, one town municipal council, and parts of neighboring district areas; 2001 population 6.5 million; nearly 500 documented slums housing over one million people.

Bangalore Mahanagara Palike (BMP): The Municipal Corporation of Bangalore; strongly aligned with the state government (despite the recent 74th amendment to the Indian Constitution advocating decentralization); in charge of storm water drains, solid waste management, street lighting, and public foot paths; does not have a dedicated slum division so slum work is carried out by ward-level engineers alongside other routine works; 2001 population 4.3 million, including approximately 400 slums.

Bangalore Development Authority (BDA): Responsible for the preparation of city development plans, approval of building and housing plans, land acquisition, development and subdivision of agricultural land, provision of municipal services in newly developed land, including pockets of slums; after works are complete newly developed areas are handed over to the BMP; approximately 20 percent of city slums are on land owned by BDA; in some cases BDA regularizes slums under its jurisdiction and issues land tenure documents.

Karnataka Slum Clearance Board (KSCB): Nodal agency for slum improvement for the state of Karnataka; authorized to execute improvement works, demolish buildings, clear an entire slum or acquire the land a slum is situated on, and provide some security to slum dwellers; less than 4 percent of slums are on KSCB land.

Bangalore Water Supply and Sewerage Board (BWSSB): Parastatal water and sewerage utility, no obligation to supply water to slums, but directed by its governing Act to provide 'gratuitous water supply through public hydrants or other conveniences...subject to payment by the Corporation'.

¹AusAid Master Plan, *Baseline Socio-Economic Survey Report*, Aug 2001.

Public taps have never provided a particularly good level of service: there are up to 50 households per tap, water supply is for short periods on alternate days, and long queues are common.

Box 2: The process of slum 'declaration'

Slums in Bangalore are often classified in terms of their status in the process of 'declaration', a lengthy and byzantine mechanism to formalize the status of slums and make them eligible for development. Declared slums are entitled to land rights and certain benefits, including infrastructure services, so declared slum status is coveted by slum dwellers.

The first step in the process is for a slum to be 'identified', which means that it is merely known to exist by the KSCB. A 'notification' is then issued for the slum (for this reason declared slums are also sometimes referred to as notified slums), allowing anyone with a claim to the land to come forward. The status of the slum in the declaration process is related to the section of the Karnataka Slum Areas Improvement and Clearance Act that it falls under; and whether it is 'preliminary' (P) or 'final' (F). Most slums start out under the general section 3 of the Act, and are thus categorized as 3P. Slums on land deemed to be unsuitable for habitation may be notified under section 11 of the Act, which allows for them to be relocated ('cleared'), or section 17, through which the land they are on is acquired by the KSCB itself. Thus an 11F slum has been relocated, and a 17F slum is on land fully under the control of the KSCB.

Slum residents may be issued with what are called 'possession certificates', and land in slums is often informally bought and sold. However, there is controversy over the extent of official land title even fully-declared 17F slum dwellers actually have. In a few cases, BDA has issued slum dwellers with 'lease-cum-ownership' papers that provide full tenure after a 10-year lease period during which the recipient pays a regular nominal lease payment.

The completion of the declaration process can take years, if not decades. It is not a good indicator of the level of infrastructure and housing in a given slum; usually the process lags far behind the development of a slum. Moreover, there are cases in which undeclared slums have actually received more attention than declared ones because political influence was exerted in their favor.

In 2004, KSCB had 367 slums in its records, of which 209 had been declared. Estimates show that there are just under 600,000 people in the 367 officially-recorded slums, but there are slums in the city which are not in KSCB records at all. These remain marginalized in terms of official provision of network services other than what they can obtain through political patronage or the intermediation of NGOs.

BWSSB water, either through one of the thousands of public taps or through individual, mostly illegal, connections. An informal estimate by the state federation of slum dwellers – the Karnataka Kolegeri Nivasi Gana Samyuktha Sanghatane (KKNSS) – estimated the number of illegal slum connections in the city to be between 20,000 and 30,000.²

Public taps are an important part of this story. Until recently there were about

15,000 operational taps fed by the BWSSB network, and another 3,000 supplied from local boreholes. About half of these taps were in low-income areas and about a quarter in slums. Their installation was frequently politically motivated, usually in the run-up to an election. The public taps have never provided a particularly good level of service: there are up to 50 households per tap, water supply is for short periods on alternate days, and long queues are common.

While slum dwellers living in the center of the city were more likely to have access to BWSSB water, in the newly-added wards and areas of the city with poor network service water on-selling and self-supply were common. This was disadvantageous to the poor, resulting in high coping costs. The cost of installing a handpump can be more than the cost of a connection, and the cost of water from vendors has always been significantly higher than the per liter cost of water supplied by the

²Report by KKNSS (2005), *Water, Sanitation and Sewerage Systems*.

BWSSB; at Rs 2³ per 20 liter container, the volumetric price of this water is almost 17 times that provided at private taps at the lowest band of the tariff.

The Utility

BWSSB is a publicly-owned water utility created in 1964 by the state government of Karnataka. The Act that established it says that its primary tasks are providing water supply, sewerage networks and sewage disposal; ensuring the sufficiency of domestic water supply to the required standards; and levying and collecting water charges on a no loss-no profit basis. Although its current responsibility is to provide for the city of Bangalore, the Chairman of the Board is appointed by the Karnataka state government and reports directly to the state Urban Development Department.

BWSSB faces many challenges; like many Indian utilities, it is struggling to cope with insufficient funds, an aging distribution system, high unaccounted-for water, explosive population growth, expanding urban boundaries, hiring and promotion constraints, high bulk water costs, and political interference, primarily in tariff setting. One of its major sources of bulk water, the Cauvery River, is 100 km away and water must be pumped to the city at great expense; as a result BWSSB's production costs, at close to Rs 20 per m³ supplied, are the highest of any major urban utility in India. However, BWSSB is one of the best-managed and most efficient utilities in the



Women queue at a public tap, waiting for the water to be turned on.

country. It boasts 100 percent metering, the lowest ratio of staff-to-connections in the country, an effective customer grievance redressal system; and an active program to reduce non-revenue water.

Organizationally, BWSSB is divided into six geographically discrete Maintenance Divisions. These six divisions are further divided into 20 sub-divisions, each with about three to four local 'service stations'. These service stations are staffed by the engineers, water inspectors, contractors, meter readers, linesmen and valvemmen who engage in the real frontline work with customers. It is important to differentiate this frontline staff from senior management in the Maintenance Division since their respective physical locations, customer interaction and responsibilities create different kinds of incentives for their performance.

Corporate planning, capital works, auditing, water source development and finance are dealt with at a central level, separately from maintenance. Unlike most utilities in India, BWSSB covers its expenditures on operations

and maintenance entirely from tariff revenues; these revenues are generated through a system of differing water tariffs for bulk, industrial, non-domestic and domestic consumption (with some of these users cross-subsidizing the others) as well as from fixed sanitary charges to offset the costs of running the sewerage system. However, the tariff does not cover debt servicing or capital expenditure. The utility receives loans for capital works from the state government and agencies such as the Housing and Urban Development Corporation (HUDCO) and the Karnataka Urban Infrastructure Development and Finance Corporation (KUIDFC).

BWSSB Service to the Poor

Historically, BWSSB had few incentives to work in slums. Other agencies were given the mandate to improve living conditions in slums, and BWSSB remained focused on its core task of supplying its existing customer base. An organizational culture, in which the staff was reluctant to work on tasks

³US\$ 1 = Rs 45 (February 2006).

Community participation was a central component of the project, and it showed that involvement with NGOs active in slum areas and with the residents themselves could rally slum communities to work with BWSSB engineers and other frontline staff, rather than against them.

perceived as either technically simple or politically sensitive, also prevailed. Until recently, BWSSB's service to slums consisted solely of supplying water, on behalf of the BMP, to the free public taps connected to the network, and maintaining some boreholes for public use in areas beyond. BWSSB policy regarding land tenure requirements was a barrier to residents of informal settlements obtaining connections, as was the cost. Thus, despite the fact that BWSSB supplied water to the poor, slum dwellers had no opportunity to become regular customers.

A critical point relevant to service to the poor is that BWSSB itself does not pay for capital investment in new distribution mains to connect previously unserved neighborhoods. The capital works division of BWSSB finances new infrastructure through direct 'deposit contribution' of funds from third parties, such as the BMP or KSCB. This means

BWSSB will never initiate an expansion program without the required funds in hand; this has in the past clearly proved to be a stumbling block to ensuring that the poor living in underserved wards, or on the periphery of this rapidly-expanding city, actually get service.

Given these obstacles, very few slum communities have, in the past, approached BWSSB directly for new connections. Instead, improving slum water supply was left to one of the many authorities responsible for the development of the city and improvement of the slums, such as the Bangalore Development Authority (BDA), BMP, or KSCB. These agencies could decide to use some of their own funds for water services; for instance, the Corporation could use its 18 percent budget allocation reserved for 'scheduled castes and scheduled tribes' to pay for the cost of extending water lines and putting in public taps in some of the slums under its jurisdiction.

If one of these agencies decided to undertake slum improvement in a particular area, or responded to a request from a community (or, more commonly, from a local politician), it was required to submit a proposal to BWSSB describing the requested intervention, obtain an estimate from BWSSB engineers, and then contribute the funds. Not surprisingly, this approach was piecemeal, prone to political interference, and resulted in very uneven levels of service for the poor.

Changes in the Relationship with the Poor

In recent years, BWSSB has made a concerted effort to become more accountable to its customers. It remains a state-owned public utility weighed down by bureaucratic hurdles, but the progress made in engaging with consumers, sharing information and addressing grievances has been both significant and substantive.

However, because of the financing mechanisms described above, obtaining access to water supply has involved direct communication between slum dwellers and practically all stakeholders except the utility. The scope for direct interaction between slum dwellers and BWSSB staff was truly minimal, and the utility did not consider them either existing or potential customers.

Three specific events prompted a change in BWSSB's overall approach to slums.



Community members gather to discuss whether to opt for shared or individual connections.

A Precedent is Set

Pilot projects implemented under an AusAID master planning project, designed to demonstrate how water and sanitation services could be delivered by a utility to slum households, set an important precedent.

These pilots addressed both the issue of whether slum households would pay for water from metered connections and the lack of land tenure in slums. At the suggestion of the AusAID project team, the Board of Directors of BWSSB adopted a resolution to accept government-issued 'lease-cum-ownership' documents provided to some slum dwellers rather than actual land titles as an adequate basis for granting connections.

This decision was later informally extended by the chief engineers to include ration cards, identity cards, election cards and even electricity bills, as admissible proof of occupation, because these documents state where the beneficiary lives. BWSSB was aware that this pragmatic resolution and its later extension was a courageous – and potentially controversial – break with previous practice. The tacit support of the state Urban Development Department was crucial; the Secretary of the Department was a member of the Board of Directors that adopted the initial resolution and did not object to later practice. Taking this administrative and bureaucratic route circumvented going to the State Legislative Assembly for approval, where the issue could have been bogged down in heated and



SDU staff and community leader visit each home to introduce the new BWSSB program.

lengthy debate on the overall status of slums and their regularization.

The three slums for the pilot projects were carefully selected to represent the different kinds of slums scattered across the city – one a small, dense slum in the city center, one a medium size slum without land title in a newly-added ward, and one a large partially-planned slum fully 'declared' by KSCB. Community participation was a central component of the project, and it showed that involvement with NGOs active in slum areas and with the residents themselves could rally slum communities to work with BWSSB engineers and other frontline staff, rather than against them.

The overall experience of the pilots was very positive. In total, more than 1,000 slum households, or almost 6,000 people, became new utility customers. A combination of shared and individual metered connections was installed, and on average 70 percent of households in the project slums opted to participate.

In addition to the new water network, AusAID paid private contractors to install sewerage networks, construct new drains, improve roads, and establish solid waste management systems. A local water and sanitation committee was established in each slum as the institutional focal point for community participation.

BWSSB began thinking about how to curb the loss of water and revenue, ideally transforming users of public taps to paying customers with domestic connections.

The pilots left an important legacy. They demonstrated that slum dwellers were willing to pay regular tariffs for utility water and that individual and group connections were a viable option in dense, insecure and poor slums. They also proved to BWSSB that local private contractors, usually reluctant to work in slums, would do so under good supervision and with adequate compensation.

The City Stops Paying for Public Taps

Subject to the 1964 Act, BWSSB had full responsibility for the management of public taps, but the BMP was supposed to pay for the water. This water was, in turn, provided free of charge to the users, and no charges were levied at the taps themselves. In 2002, there were approximately 15,000 of these public taps supplied by the BWSSB network. Of these, BWSSB billed for the water supplied at 7,000

(the others were unauthorized or deemed to be out of service, though in practice they still operated). In theory, the BMP paid the bill from its municipal revenues, using a pricing structure based on gauging the water flow, an exercise jointly undertaken by the utility and the Corporation every few years.

The last gauging exercise took place in 1997 when it was estimated that the average public tap supplied 22,000 liters of water per day, billed at a cost of Rs 3,000 per tap per month. This is equivalent to Rs 4.5 per m³, a very low rate equivalent to less than the lowest block of the domestic tariff, and well below BWSSB's cost for supplying the water. In actual fact, the Corporation paid these bills erratically, and by 2002 had accumulated arrears of nearly Rs 150 crore, equivalent to US\$ 30 million.

In 2002, BMP announced it would cut funding for public taps altogether. It seems that the decision was taken

because the city's revenues were simply insufficient to finance the payments. As part of its broader reform initiatives, in particular to clean house financially, BWSSB began to exert strong pressure on BMP to pay its debts. Certain of its inability to finance future payments and large arrears, the Corporation sought and obtained the approval of the Urban Development Department to cancel the arrangement for city funding of public taps and to finalize a debt repayment plan.

The decision was justified to the public on the basis that increasingly erratic water supply throughout the city altered the original terms of agreement, and that it was BWSSB that had the social responsibility to provide water for slum dwellers and to fund public taps through its own cross subsidies.

This development created a serious dilemma for BWSSB. It was estimated that water supplied by the utility to public taps amounted to a staggering 20 percent of all water going into the distribution system, and thus represented a very important loss of revenue if no one paid for it. Given BWSSB's mandate to operate on a no profit-no loss basis, and its ongoing struggles to reduce non-revenue water, it could not afford to continue the practice of supplying water free of cost. Initially, the Corporation gave tacit approval to BWSSB to disconnect the public taps over time, and it agreed to leave the matter to them. However, it was clear that a city-wide disconnection drive would incite large-scale opposition from the community, most likely with the support of the very councillors who had voted in favor



Household tasks are simplified after private connections increase water availability.

of ceasing municipal payment for public taps in the first place.

BWSSB began thinking about how to curb this loss of water and revenue, ideally transforming users of public taps to paying customers with domestic connections.

The Network is Extended to All Wards

Although 27 new wards had been added to the official Corporation roster in 1995, only the original 73 wards were supplied with mains and distribution network, and of these only 45 had systems that provided complete coverage.

In view of its responsibility to fund basic infrastructure within municipal boundaries, BMP decided to pay for the full extension of BWSSB's piped network to the new and partially-served wards. The Corporation agreed with the BWSSB's capital works division to divide the work



SDU staff and a BWSSB valveman debate how to improve water pressure.

into three major contracts, nine wards at a time, instead of through the usual proliferation of small contracts. This 'Package Program', as it came to be known, was completed in 2005.

The effect of this decision was significant in terms of potential future access for the urban poor. Whereas piecemeal projects to extend the pipes would have been slow and unlikely to reach slum areas of the city, under the Package Program distribution mains were to be installed in practically

every street in the city. Even if slum households could not afford to connect to the pipes through BWSSB's regular individual connections, their chances of securing access to water through other means increased exponentially.

Network extension thus mobilized BWSSB to consider working with slum dwellers to pre-empt a surge in illegal connections, informal connections obtained through political pressure, and unauthorized public taps.

Box 3: Connection cost and tariff adjustments to make water affordable

Connection Costs

Normal rate for a new domestic connection: Rs 1,800.

In slums

For plots less than 150 square feet only the water meter cost is covered: Rs 550.

For plots between 150 and 600 square feet a sanitary charge is added: Rs 800.

If slum dwellers coordinate and have their additional piping and taps installed by the same plumber the additional cost per household is between Rs 800 and 1,000.

Tariffs

The old tariff structure required all customers to pay a minimum charge equivalent to 15 m³ of water a month. Most slum dwellers consumed around half this amount, so essentially paid for water they did not use. The new tariff reduced the minimum charge to 8 m³. A family using this amount or less now pays Rs 73 per month, compared with Rs 115 under the old structure. For shared connections, the total volume consumed is divided by the number of families sharing a tap, after which the same tariff structure is applied to the amount consumed by each family.

A low risk approach, allowing BWSSB to 'try its hand' in slums, was crucial to ensuring that the program got off the ground. Rigid performance targets and time frames would have limited the SDU's freedom to experiment with methods and processes.

A New Direction

Together these events changed the nature of access to water for the urban poor by creating a kind of tipping point, after which internal policies had to change. Interestingly, these events were all prompted by decisions external to BWSSB, compelling the utility to start considering the unconnected – the poor – in a different light, as potential customers contributing to cost recovery.

First, BWSSB initiated a series of bold policy changes. These measures were approved at regular meetings of the Board of Directors, and approval for some of them was obtained

from the state Urban Development Department to which BWSSB reports.

- The requirement for formal tenure documents to be submitted with applications for new connections was replaced with a simple obligation to prove occupancy.
- The Board decided to innovate with service levels, allowing shared connections for groups of five to 10 families as an alternative option, particularly for the very poor or for slum dwellers living in dense and congested slums.
- Connection fees were reduced for slums to a rate that covered the cost of the meter only, with any additional costs associated with

new extensions being absorbed by the Maintenance Division, and the domestic tariff structure was modified to introduce a lower minimum monthly charge which considerably lowered the monthly bill for those using small volumes of water (see Box 3).

Second, BWSSB made changes to its own organizational structure by creating an in-house Social Development Unit (SDU). As there were no suitable personnel within the utility to head this unit, the officer who had been seconded from the state Women and Child Development Department to the AusAID pilot project was retained in the same position on a contract with BWSSB.

Box 4: The process of connecting slums

Selection of slums is based on good relationships with NGOs forged during the pilots and subsequent post-pilot operations, as well as on genuine need, client demands, engineer requests, state of network extension, and water availability. The SDU ensures that the local distribution network is either already in place through the Package Program or feasible through minor extension works from nearby mains.

Initial forays into communities consist of a preliminary assessment of the existing water and sanitation situation, meetings with local leaders and community groups, and door-to-door house visits. During these visits, the BWSSB slum program is explained, information on service levels (individual connections, private connections) and costs is disseminated, and willingness to connect to the network is assessed.

Site visits with the engineers from BWSSB's local service station are carried out in order to bring engineers on board, introduce them to the community, and discuss technical issues flagged during the initial visits. These visits also demonstrate to slum dwellers the visible presence and commitment of engineers.

Application forms are distributed, either directly to residents or community leaders, or through the NGO who will monitor and assist in compiling and collecting them. Applications are submitted for approval, with proof of occupancy and the connection fee, in batches of about 50 at a time.

Meters are issued and slums connected to the network after at least 50 percent of the slum has paid. The time lag between the submission of applications and the issuing of meters can be lengthy, as this step is often delayed if water is not available or the distribution network is not yet ready.

Distribution of water and billing commences as soon as meters are issued. Water is usually supplied on alternate days for two to six hours at a time. Monthly billing is carried out by meter readers and cash payments are collected at the service station.



Representatives of a water and sanitation committee discuss how to improve revenue collection.

Retaining a key staff member from the pilot project, particularly one with training in community mobilization, was an important signal of BWSSB's new willingness to continue working with slums, and the value it placed on the knowledge and capacity built up during the pilots. Although the SDU was strongly supported by some members of senior management, it faced several organizational challenges. It was not given a budget or support staff, and consisted essentially of the single officer heading it.

The capacity and character of this particular person proved to be a crucial factor in translating the new willingness to work with slums into

actual outcomes. Without the perseverance and drive of this 'champion' of pro-poor reform, all efforts at BWSSB to reach out to slums could easily have floundered.

Another obstacle was the fact that the SDU reported to the BWSSB's Corporate Planning Division – a legacy of the AusAID project which this division had overseen – despite the fact that the vast majority of the SDU's work was with field-level engineers from the Maintenance Division.

The small scale of the financial investment made by BWSSB in the slum program is noteworthy, and was a factor in the challenges the SDU

faced, but also, surprisingly, in its success. The capital costs of the new distribution network for unserved wards were paid for by BMP through the Package Program, and elsewhere in the city the network was largely already in place. Households wanting to connect were required to pay for the out-of-pocket costs associated with the purchase of the meter, materials to connect to the distribution network, and plumbing costs. BWSSB's financial obligations were thus limited to the salary of the head of the SDU.

This low-risk approach, allowing BWSSB to 'try its hand' in slums, was crucial to ensuring that the program got

Many engineers had never worked in a slum before and the SDU spent a lot of time sensitizing them and helping them innovate with solutions, for example, for late payments and arrears, as well as the conversion of illegal connections to legal, metered connections without penalty.

off the ground. More substantial financial investment would undoubtedly have come with strings attached, such as rigid performance targets and time frames, and would have limited the SDU's freedom to experiment with methods and process.

The Methodology

Over the three years between 2002 and 2005, the SDU initiated work in 46 slums, following a series of steps as detailed in Box 4.

Community Mobilization

The importance of community mobilization in the process of connecting slums cannot be overstated. Unlike households in middle class neighborhoods that the utility dealt with as individual clients, the slums in Bangalore had to be treated as a 'unit', at least in the initial stages of bringing them on to the network. For technical and management reasons, it did not make sense for BWSSB to extend household connections to only a few houses in an underserved area – at least half the households have to commit to connecting by registering their

applications and paying the initial connection fees. This strategy of dealing with slums as communities made the work particularly daunting for BWSSB engineers unaccustomed to mass connections and the dynamics of poor neighborhoods.

Community consultations developed organically and the SDU did not have a systematic method of eliciting community preferences and ascertaining local demand. Initial forays into a given slum consisted largely of informal meetings with residents and community leaders, followed by a lane-by-lane assessment based on visual observation and casual discussions. The head of the SDU deliberately chose specific people to act as liaisons and representatives of the community in later negotiations with engineers and NGOs.

The choice of contact persons was usually based on a record of community leadership, an expressed interest in the work of the SDU on the part of volunteers, and interpersonal dynamics with the SDU and the NGO. Community leaders who were deeply engaged in party politics were avoided and, in most

cases, expressed no interest anyway. The vast majority of community liaisons chosen in this way were women and members of local community-based organizations (CBOs).

Although gender-balanced water and sanitation committees had been established during the pilots, this institutional focal point was not replicated in other slums, mostly because the SDU did not have the time, manpower or sway over communities to develop such institutions in the same way the pilots had been able to.

The Role of the NGOs

It was key that a degree of cohesion was achieved within the community through intense fieldwork by the SDU beforehand. The SDU was greatly assisted in this by forming partnerships with local NGOs. These NGOs were well-established development organizations that both commanded respect from the community and could capture the attention of engineers in ways unorganized community members and local community groups could not. The NGOs introduced the SDU to key community leaders, aided in mobilizing

Box 5: Differing NGO styles

Each NGO brought its own philosophy and style to the program, and the quality of their work had a strong impact on outcomes. They did not work closely together or form a united policy front, and the greatest hurdle was convincing some NGOs that charging slum dwellers for reliable network water was beneficial. Some NGOs, in particular KKNSS which lobbies for slum dwellers' rights and organizes communities throughout the state, were wary of the approaches used by BWSSB in slums. In May 2003, KKNSS organized a demonstration outside the BWSSB premises to protest the closure of public taps and to advocate for free water for slums. In contrast, AVAS campaigned directly and personally with the SDU and the Chairman of BWSSB to ensure network extension in their slums and to lobby for a rationalized tariff that made water affordable for slum dwellers.

the community, assisted slum dwellers in filling out applications, collected connection fees, and generally acted as liaisons between the community and BWSSB. They also assisted with savings for households unable to pay the connection fee upfront, holding cash on behalf of individuals until a family was ready to submit its application. NGOs were also effective advocates and applied pressure when engineers delayed new connections or stalled in other ways.

Although these roles can be (and have been) filled by smaller and more local CBOs, the SDU found good NGOs to be strong and effective partners.

NGOs had also played a role during the pilot project, although at the time their relationship with BWSSB was governed by formal contracts and they were remunerated for their services. As the new SDU had no budget, it was obliged to rely on the NGOs' commitment to their general mission of helping slum communities (see Box 5). Two of the NGOs the SDU had worked with during the pilot projects, AVAS and Mythri Sarva Seva Samiti, were willing to continue engaging with BWSSB without remuneration.

They went on to broker deals with BWSSB in five other slums, most of them locations where they had a long history of involvement. The SDU was able to engage with eight additional NGOs, many of which coordinated women's groups and thrift and credit societies which were also tapped to enhance community mobilization. This brought the total number of NGO partners for the 46 slums to 10.



SDU staff meets with BWSSB engineers and contractors to discuss technical options for laying pipes in slums.

The Role of the Engineers

In addition to community and NGO mobilization, the SDU had to engage the sub-divisional and service station engineers. Most engineers stayed out of the early stages of community mobilization, becoming involved only when a slum was 'ready', and technical and management inputs were needed. These inputs consisted of determining how slums could be connected to the nearest network, deciding the hours and timing of supply depending on distribution cycles for the entire service station, and issuing monthly bills once meters were installed. Many engineers had never worked in a slum before, and those that had often recalled bad experiences when poor services led to tension.

The SDU spent a lot of time sensitizing them to the nature of the program, how it worked, and what was required of them. For example, the SDU helped the

engineers innovate with solutions for late payments and arrears, as well as the conversion of illegal connections to legal, metered connections without penalty.

Working with the engineers was challenging. Although senior management approved of the work of the SDU, they stayed out of practical matters entirely. While the SDU was technically part of BWSSB, the head of the unit still found she had 'outsider' status from the point of view of many of the staff. In most instances, BWSSB staff, from the engineers down to the valvemans, needed to be convinced of the merits of the program and the reason they should spend their time working with the SDU to broker complex neighborhood agreements. An additional reason for this may be that the new approach disrupted the well-established system of petty rent-seeking associated with erratic supply to slums.

Although BWSSB still has a long way to go to roll out the program to every one of the nearly 400 slums in the city, progress is real and many lessons have been learnt. The slum program has developed successfully from a discrete pilot project to a city-wide program.

The Outcomes of the Slum Program

Of the 46 slums in which the SDU started working, 26 had been connected to the network by early 2005. In these communities, 4,300 households, or 65 percent of the total, chose to take a connection and were being provided with water on alternate days. The record on bill delivery by meter readers and payment by slum dwellers has been mixed but it is estimated that, overall, well over half of the newly-connected slum dwellers do receive and pay their bills regularly. BWSSB has thus targeted approximately 10 percent of the slums in the BMP area, and rolled out the program successfully in over half of these slums. When the 1,000 households connected during the AusAID pilot program are included, BWSSB has brought just over 5 percent of the slum households in the city onto their customer base.

Although BWSSB still has a long way to go to roll out the program to every one of the nearly 400 slums in the city, progress is real and many lessons have been learnt. The SDU and the utility have

gone through an important learning period and the slum program has transitioned successfully from a discrete pilot project to a city-wide program. Moreover, as the SDU and engineers have developed their approach and learnt from their own mistakes, the pace of new slum connections has increased.

Factors in Success: Incentives, Disincentives, and Constraints

The success of BWSSB's slum program has been extremely varied across the organization. One reason for this is that engineers and frontline staff in the field offices were not required to respond to overtures from the SDU, and compliance with the new slum program was not a factor in their monthly performance assessments. As a result, in the initial stages, the SDU had to rely on a great deal of goodwill from BWSSB staff to get responses to its requests for technical and management support. Even when engineers and their field staff were willing

to engage in slum work and supply water, their ability to do so was not guaranteed. Several specific factors led to engineers' willingness to engage and increased the probability of a success in a given slum.

In general, whether the SDU received positive responses to their requests for assistance depended both on personal factors, such as staff members' empathy with the urban poor and local political alliances, and on professional environments, such as performance incentives given by superiors and the characteristics of the local service stations. Targeting the 46 slums involved working with 19 different Assistant Executive Engineers, each in charge of a service station, of which only 11 successfully connected at least one slum.

There were no direct incentives for engineers to work in slums, or organizational targets associated with the slum program. When asked, the successful engineers sometimes stated that they worked in slums because of "humanity considerations" or "social justice". But in fact this does not seem to have been a particularly powerful impetus – after all, BWSSB's previous

Box 6: The impact of revenue targets

The most successful service station in the slum program, Machalibetta in the East Division, has connected 12 slums to the network and is in the process of mobilizing another two. Over three years, the engineer in charge added about 2,500 connections from the slums, which represents 32 percent of his total customer base of 7,730 domestic connections. Approximately 5 percent of his total domestic revenue collection comes from this new slum customer segment. This figure is likely to range between 2 and 15 percent for an average service station. Although a high proportion of revenue in Machalibetta comes from high-tariff non-domestic and industrial connections, the engineer has still used slums to meet and surpass his monthly targets, achieving a collection efficiency relative to a target of 106 percent.

record was one of large-scale indifference to slums. And although external factors triggered a change in policy and approach by senior management, this new attention to the urban poor was not communicated to frontline engineers in any explicit way. They were merely informed that they could now, in theory, connect slums to the network through individual connections.

In practice, engineers responded to the SDU according to a set of indirect incentives and disincentives, which did not apply equally to the entire organization.

First, slums provided an untapped market for engineers when they needed to increase revenue. Around the same time that the SDU was rolling out the slum program, senior management started increasing monthly revenue targets for service stations and demanded they be met either by



SDU staff distributes meters to households who have paid connection fees.



Community leader collects BWSSB application forms from residents.

increasing the number of connections or improving collection efficiencies.

When the gap between projected collection and revenue targets for a given service station was large, slums presented a new customer segment.

However, when the gap was small or revenue targets could more easily be met through high-tariff-paying industrial connections, the incentive was much lower for engineers to engage in laborious slum work.

High revenue targets thus motivated engineers to consider connecting slums, even though this was not their original purpose (see Box 6).

Second, in addition to increasing monthly revenue targets, senior management emphasized the regularization of illegal connections. Service station engineers made greater efforts to work in slums with the SDU when sub-division and division superiors proactively sought to decrease the illegal connections.

Senior management stressed the regularization of illegal connections and high revenue targets motivated engineers to consider slums as untapped markets.



A newly-installed meter and outside tap locked by the household for private use.

Third, service stations in areas with small pockets of slum households had a higher rate of servicing the poor. Engineers, particularly those encountering slums for the first time, were more willing to try their hand in a small slum than a large one.

Fourth, engineers working either in areas with acute water scarcity or problems of 'tail-end supply', or in the 27 newly-added wards where the network was incomplete, were more reluctant to work with slums.

This was because once new connections were sanctioned, meters were issued, and customers were 'on the books', engineers were made accountable and had to provide water and collect payment. If not, they risked the wrath of a local politician, visits by slum dwellers en masse to register complaints, and a future pattern of low collections from a dissatisfied customer base. Engineers in wards or

neighborhoods lacking either water or pipes feared being held accountable for customers they could not serve adequately and thereby resisted extending service to slums.

Fifth, engineers and frontline staff responded, or failed to respond, to the SDU based on their own perceptions of the nature of slum work. These were sometimes based on facts and prior experience of working with the urban poor, and sometimes on personal convictions, some inaccurate, about what slum dwellers and their environments were like. For example, many of them were convinced that slum dwellers were neither able nor willing to pay for water, that local leaders and elected officials would interfere and cause trouble, or that communities would 'gang up' on frontline staff.

If engineers and their staff did respond positively to the SDU, their ability to supply a slum with pipes, water, and

ongoing operations and maintenance depended in turn on characteristics of the particular slum community and the quality of negotiation between the slum and the utility. Three of the most important characteristics of a community which affected success were:

The presence of active, reputable, and well-networked NGOs and CBOs: In the most successful cases, local CBOs and NGOs introduced the community to the SDU, provided extensive inputs, and acted as ongoing liaison. NGOs with the longest presence in communities and the most charismatic and pro-active extension workers achieved the best results.

The extent of investment in the existing supply arrangements: Engineers encountered the most resistance in slums where residents already had access to either illegal BWSSB supply or good quality groundwater. Water obtained through illegal connections was free, and in some cases provided a relatively high level of service.

Slum dwellers were unlikely to suddenly agree to pay for the same level of service, though the promise of reliable legal service delivery combined with the threat of disconnection carried some weight. The greatest success was in those areas that had been newly networked, and in slums with no access to groundwater.

Involvement in slum affairs by elected officials: The active participation of elected officials in slum affairs could have either a positive or a negative impact. Not all political

intervention was bad and, in many cases, elected members of the BMP and the state legislative assembly acted as champions, calling for accountability and putting pressure on engineers to complete works on time.

However, the political imperative to secure votes by appearing to be the sole provider of a new service was sometimes an obstacle. Engineers often had to delay new connections in order to appease political ambition, particularly in 2004 which was an important election year.

Once a slum was connected to the network, detrimental political interference diminished. At this point, politicians were more likely to engage in demanding better operation and maintenance from BWSSB when it lapsed into poor service delivery.

The quality of negotiation between BWSSB and slum dwellers was also a critical factor in increasing the probability of successful connection of the slum. When meetings were rushed and communities did not feel genuinely consulted, slum dwellers increased their levels of resistance to the program. High quality negotiations required:

- Frequent, visible and direct involvement of BWSSB engineers and the SDU from the beginning;
- Unbiased attention to all the areas in a slum;
- Committed champions within the community; and
- Substantial time commitments from the NGO.

Strengths and Weaknesses

BWSSB's program to serve the poor has several strengths from which we can derive useful lessons. From the perspective of the utility, the initiative is entirely consistent with effective utility management – increasing both the consumer and revenue base, regularizing illegal connections, and reducing non-revenue water. From the perspective of the slum dwellers, the program provided a better quality water supply, enabled direct communication with service providers, and recognized residents as legitimate urban citizens and valid customers of the utility.

Perhaps one of the more interesting aspects of this program is the slow speed at which it developed. Once external triggers made finding new ways to serve the poor a necessity, BWSSB developed a program to do this in halting and piecemeal ways. However, the very fact that the initiative was somewhat 'fuzzy' offers some interesting strengths. For example, because the objectives of the program were never clearly defined, the SDU was able to focus on mobilizing stakeholders rather than on meeting output-oriented targets set by senior management. This unwittingly enabled innovation and close engagement with stakeholders, by enabling the SDU to experiment with methods to mobilize slum communities and, even more critically, ways to engage field-level engineers.

The slow start enabled intense involvement of frontline staff with the SDU, which convinced these engineers

of the merits of the approach and gradually brought them on board as reformers themselves. Of the 11 engineers who successfully completed a program in at least one slum, four went on to connect a second slum and one connected a total of 12 slums.

However, the BWSSB program also continues to suffer from several weaknesses:

- The SDU remains severely under-staffed and under-funded. Achieving city-wide scale will require significant changes to the SDU as an organization.
- Incentives for BWSSB staff to engage with the poor are still weak. Apart from the unintentional effects of revenue targets, there have been no direct incentives for engineers to work in slums.
- There is an almost total reliance on NGOs as voluntary, unremunerated partners. Communities without links to suitable NGOs are likely to be bypassed.
- Initial beneficiaries have not been consulted as to the success of the program so far and whether their demands are being met. There has been no monitoring of outputs or periodic assessment of the program to date.
- Although slum dwellers are consulted and they can opt out, they are under intense pressure to regularize illegal connections, and the choice of service levels offered to them remains limited. This means that although some form of

After a period of learning and experimentation, BWSSB has accumulated valuable lessons. It has achieved a great deal, and changed the attitudes and perception of services to the urban poor within the organization.

participation by slum dwellers exists, it is limited, unsystemized, and not always genuine.

- BWSSB's efforts to date have been almost entirely confined to water. Apart from a few individual connections to the sewerage network and the installation of individual latrines, there has been no concerted effort on the part of the utility to address sanitation or hygiene in slums, either through private sewer connections or community toilets.

Finally, and perhaps most notably, BWSSB continues to operate without an explicit poverty policy. The pro-poor program is really no more than a series of experiments and decisions that have, over time, developed into a meaningful whole.

Although there were benefits from the absence of a defined policy during the period that the slum program was being consolidated and developed, a policy is now clearly needed to formalize the program, form the foundation of a roll-out strategy, and ensure organization-wide compliance from senior managers and frontline staff.

Lessons and Recommendations

After a period of learning and experimentation, BWSSB has accumulated valuable lessons. It has achieved a great deal, and changed the attitudes and perception of services to the urban poor within the organization. BWSSB has become a

model for other utilities trying to improve slum water supply.

BWSSB now recognizes that it must ensure that both the impact and scale of the program increase. Not only does the utility want to increase coverage in the area of the city of Bangalore for which it is already responsible, it is now being asked to implement network extensions in the greater metropolitan area. As efforts to scale up gain momentum, BWSSB recognizes that the ad hoc nature of the program to date cannot continue, and that the utility must act to systematize the approach. Most importantly, BWSSB must address the problems of a lack of explicit policy, the absence of incentives for its staff to participate in the program, and an under-resourced SDU.

The challenges that BWSSB has overcome, and those it still faces, allow for a number of recommendations for pro-poor utility reform in general:

A well-documented, explicit policy on slums and a **publicized roll-out strategy** are crucial.

- The approach specified in the policy needs to be systematic, without leaving slums at the mercy of local circumstances. The policy must pay equal attention to water and sanitation, including a hygiene component.
- The kinds of connections being made available, for instance shared or individual connections, should be described in this policy, with a set of clear eligibility rules. These rules must be easily applied according to

a set of external factors, such as type of settlement, water availability, and proximity to the network. A slum community should have the final say in which level of service they wish to adopt, given a choice of kinds of connections they are eligible for.

- The focus of the policy should be on outputs rather than inputs, for example on working connections rather than on rigid levels of service, or on customer care rather than rules-based minimum obligations. The overall thrust of the policy must be to develop and institutionalize incentives within the utility to serve the poor as customers, and not just to connect them.
- A roll-out strategy is required which includes clear plans for adding new slums within a time frame and linked to the utility's overall infrastructure development plans.
- Both the policy and the roll-out strategy should be the subject of public information releases and consultation. Consultations are important both with knowledgeable CBOs who are actively engaged in poverty alleviation in slums, and with the poor themselves. In order to participate in consultation, the poor will need intermediaries and support – this can be provided through suitable federations, NGOs or other organizations.

Utilities should undertake planning from a position of knowledge. Where possible, **research should be undertaken** to determine the extent of

slum settlements and their existing service characteristics, as well as their future expectations and demand.

- Research should combine analysis of existing data from many research, policy and NGO sources, with the collection of new data at the field level.
- NGOs and CBOs can assist with compiling and collecting these data.
- The results should be used in identifying coverage gaps, determining levels of service, setting priorities, and planning new investments.
- Research should include careful attention to the expectations of slum dwellers. Demand studies should be used to ascertain their demand for improved water and sanitation in the future, and the extent to which existing reform initiatives have satisfied the demands of those ostensibly already served.

An adequately funded, suitably staffed, and respected Poverty Outreach Unit or Social

Development Unit is a powerful way to operationalize pro-poor reform.

To be effective:

- The unit should have suitable profile within the utility.
- The unit should liaise closely with senior management from the division most closely associated with provision of new connections, either through direct reporting or a designated point person.



A BWSSB service station where slum dwellers pay bills, register complaints, and interact with frontline staff.

- The unit must have the right mix of skills. This may require bringing on new staff trained in community development from outside the utility, even if under parallel reform activities staff hiring has been frozen or reduced.

There must be clear incentives for staff to support the aims of the program.

- Staff members who implement connections, such as the service station engineers in BWSSB, should have clear targets for improving slum water supply, either through outcome measurements such as number of new connections in slums or process obligations such as number of community meetings held.
- These targets should be considered during the monthly performance review of individual engineers.

- Staff should be incentivized to achieve these targets through credible rewards and penalties.

Staff must be informed of the approaches to serving the poor, including new policies, expectations, outcomes and changes as the program evolves.

- Information dissemination is important and engineers should be encouraged to share knowledge among each other, either through collaborative field visits, panel discussions, or a professional newsletter.

The extension of network mains to unserved areas of a city is costly. **A source of funding must be identified** to ensure resources are available to install the infrastructure required.

- The amounts required must be determined during investment



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ABOUT THE SERIES

WSP Field Notes describe and analyze projects and activities in water and sanitation that provide lessons for sector leaders, administrators, and individuals tackling the water and sanitation challenges in urban and rural areas. The criteria for selection of stories included in this series are large-scale impact, demonstrable sustainability, good cost recovery, replicable conditions, and leadership.

planning, and clearly allocated ('ring-fenced') to improved services to the poor, so they cannot be absorbed into other activities of the utility.

- Funding arrangements for sanitation will differ and appropriate financial and institutional strategies must be developed accordingly.
- The costs may be borne by a third party, such as a government agency or a donor.

These grants may be in the form of output-based subsidies, whereupon fund disbursement is linked to working connections

(usually defined as connections offering some minimum consumption and in use by slum dwellers).

- Slum households can and will pay the cost of household connections, meters and plumbing charges themselves, but they must be made as affordable as possible.

It is generally better to channel available subsidies towards the initial connection costs, rather than to ongoing consumption.

Without a 'broker', negotiations between the utility and the community are likely to stall or fall apart. **Reputable NGOs or community groups are vital partners.**

- These NGOs or CBOs must have the capacity and commitment to act as organizers, leaders, and champions of reform.
- The utility must have a clear policy for interacting with them, for instance in terms of what they are expected to do, and whether their costs will be covered.
- These expectations should be documented in contracts or memoranda of understanding between the NGO and the utility, particularly if NGO costs are to be reimbursed.

February 2006

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To help the poor gain sustained access to improved water and sanitation services.

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The Governments of Australia, Belgium, Canada, Denmark, Germany, Italy, Japan, Luxembourg, the Netherlands, Norway, Sweden, Switzerland, and the United Kingdom, the United Nations Development Programme, and the World Bank.

AusAID provides WSP-SA programmatic support.

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ACKNOWLEDGMENTS

The authors would like to acknowledge the valuable peer review provided by:
Barbara Evans
Alain Locussol
Smita Misra
Dennis D. Mwanza
Catherine Revels
Salma Sadikha

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Connecting the Slums:
A Utility's Pro-Poor Approach in Bangalore
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