

Achieving the Water and Sanitation MDGs in Bangladesh

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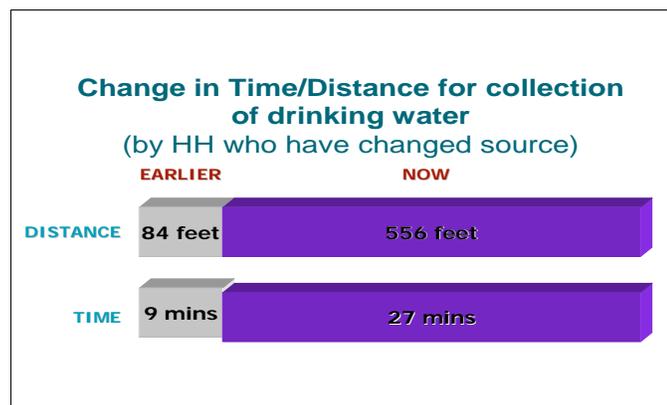
Introduction

1. Bangladesh has achieved significant coverage in water supply during the past decades primarily due to the availability of suitable ground water aquifers at shallow depth. This enabled private drillers to install hand pump tube wells at affordable cost and provided potable water to households based on demand. Nearly seven million hand pumps have been installed throughout the country of which about 1.2 million by the government agencies and the rest through private drillers, mostly in the rural, small towns, and peri-urban areas. The rural coverage in these areas reached 97% until the detection of arsenic in some areas. This has caused a decline in coverage to about 76%, and is likely to put Bangladesh off-track in achieving the MDG in water supply.
2. With over 1000 people per square kilometer Bangladesh has one of the highest population densities in the world. 50% of the population is categorized as poor and 20% as hardcore poor. In absolute numbers, therefore, about 71 million people are under the national poverty line. In spite of this serious challenge, the effort to achieve nearly universal water supply coverage has become an example of global best practice. A comparable miracle is taking place in rural sanitation since the first South Asian Ministerial Conference on Sanitation (SACOSAN) in 2003, where the Government declared a goal to achieve universal rural sanitation by 2010. From a meager 35% rural sanitation coverage, the country has reached a remarkable 70% coverage over a period of three years, through the adoption of a Community and Local Government Led Total Sanitation Campaign (CLTS).
3. The urban scenario, however, is more complex and challenging. Urban population is also increasing at one of the fastest rates across the world. The current urban population of 35 million is increasing at a rate of 3.5% per year and by the year 2050 nearly 50% of the people will reside in urban areas, of which over 30 million will be in the city of Dhaka, likely to be the second largest city in the world. A conservative projection indicates that nearly 30% of urban dwellings will live in slums and shanties. Although urban water and sanitation coverage figures appear impressive at 71%, only about 40% of the population receives intermittent water through piped systems, while the remainder does so through hand-pumps. Government figures generally claim that access to urban sanitation is around 70% to 75% in bigger towns. However, only Dhaka city has a sewer system which serves about 30% of the households, mostly high income groups, while the rest use different kinds of onsite systems from basic pit latrines to septic tanks.

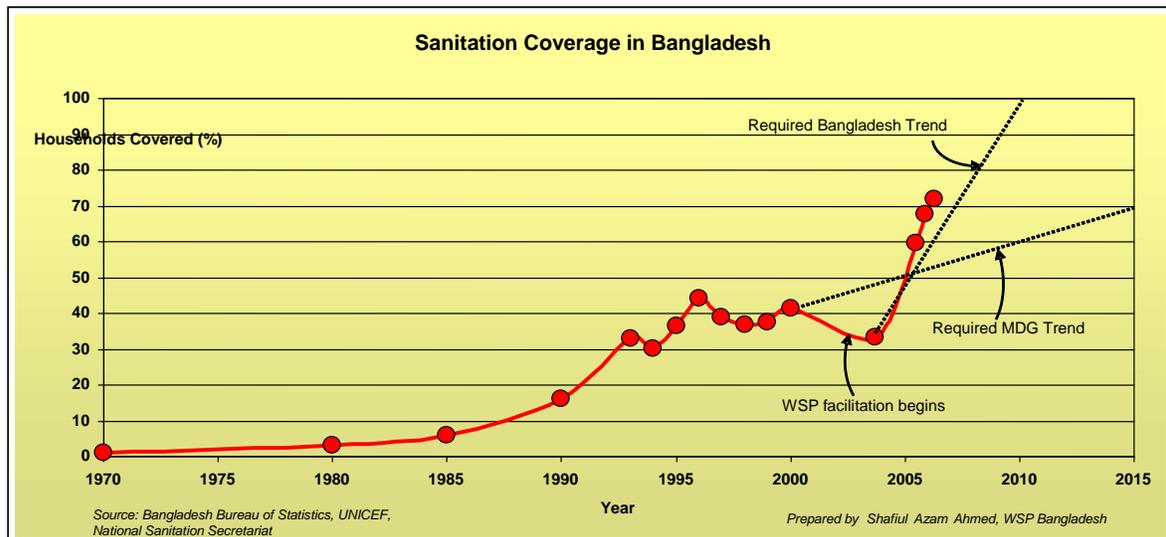
4. Population growth, commercial and industrial expansion, and the resulting pollution of urban watershed are all severely affecting the country's potable water sources. Overcrowding in slums, shanties and low income communities with little or no reliable water and sanitation service is probably the single greatest challenge for Bangladesh in its efforts to achieve the MDGs for the water and sanitation sector.
5. The inclusion of Water and Sanitation as one of the components of the Bangladesh Poverty Reduction Strategy is a significant recognition of the critical importance the Government has assigned to the sector as a means of poverty reduction. This has encouraged the main sector stakeholders and international development organizations to align with the Governments strategy and mobilize technical and financial assistance to support the MDGs for the water and sanitation sector.

Rural Water and Sanitation

6. Rural Water: Rural water through hand-pumps from shallow ground water aquifers, which is based on a service level where one hand pump serves on average 20 people, or roughly about 3 families, is a major success story for Bangladesh. However, where the groundwater table is below the suction limits, this ratio increases to over 100 persons per hand-pump in view of a change from suction mode to force lift. Other technical challenges include deeper aquifers and stony layers that drive up the cost of installation. People's preferences have now significantly shifted from a basic to higher level of service delivery, and one of the guiding factors is convenience in addition to safety.
7. Contamination of arsenic has affected nearly 29% of the shallow hand-pumps, thereby putting nearly 20 million people at risk. This has resulted in a decline of statistical coverage from 97% to 76%, and is now the major challenge to achievement of the MDG goals by 2015. Alternate options including safe hand-pumps and other water sources have been recommended by various implementing agencies as an emergency measure for drinking and cooking purposes, however this significantly increased the water collection distance and time. As a result, people tend to revert back to their own sources risking the ingestion of water with arsenic above permissible limits (50 micro-grams/ml). The figure below illustrates the change in collection time.



8. To address the convenience factor, Government and donors launched piped water supply in the rural areas, especially in the high density villages. This new model draws largely from the success of small scale private operators in mobilizing resources, and promotes NGOs and sponsors to plan, implement and manage rural piped water schemes with a 50% capital grant to ensure access to the poor households. While this will address at best 500 high density villages over the next five years, most of the arsenic affected villages will resort to deep tube wells as a second preference. There are other options based on surface water, including pond sand filters, dug wells and rain water harvesting. However, most of these are at risk of bacteriological contamination.
9. Rural Sanitation: Rural sanitation is likely to achieve the MDG goal even before the target date. It is expected that by 2010 there will be universal access to sanitation in rural areas. Following the SACOSAN 2003 Ministerial Conference, GOB has launched a massive campaign and, as of today, achieved over 70% coverage through pit latrines. The rate of increase in access has been a remarkable 14% per year. The figure below illustrates the progress of rural sanitation as reported by the Government.



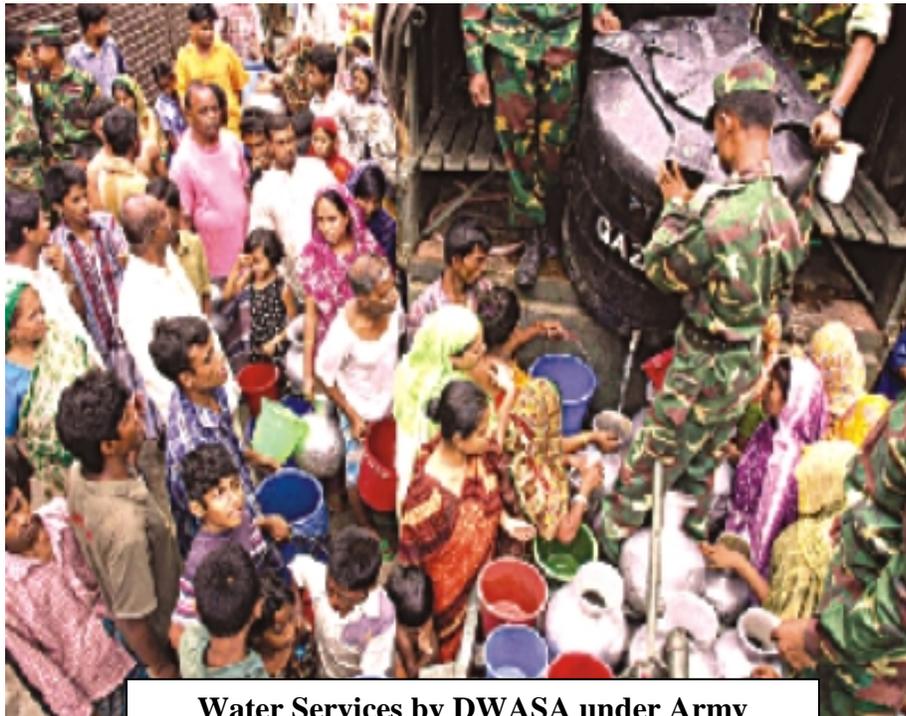
10. The challenge in rural sanitation is to ensure the sustainability of the movement and that the trend does not reverse, as has happened in the past. The other issue is the durability of the basic pit latrines, which may begin to render unsanitary services under improper maintenance and or natural disasters, especially flooding.

Urban Water and Sanitation

11. Water Supply: As was previously mentioned, the real challenge for Bangladesh in achieving the MDG goals is in urban areas. Already urban coverage is much lower than coverage in rural areas. Out of the 298 Pourashavas, only 102 have piped water, which serve about 36% of the population; the remainder is self-serving through hand-pumps. Where there is no piped water supply, the coverage through hand-pumps is on average 76%. Piped water supply is intermittent, varying between 2 hours to 12 hours, and the

quality of water is not satisfactory. Poor management, irrational tariff, inadequate cost recovery, high non-revenue water are some of the major challenges the urban utilities are facing. The Department of Public Health Engineering (DPHE) as the lead sector agency provides support to most of the pourashavas, however, a lack of clear institutional roles and responsibilities continues to affect the vicious cycle of poor and inefficient service delivery and consumer dissatisfaction.

12. The situation is alarming in the major cities, including the capital Dhaka, where a quasi-autonomous body (DWASA) is responsible for water supply, sewerage and storm water drainage. DWASA provides intermittent water supply to about 57% of the households in Dhaka (of a population of about 13 million, which makes Dhaka the 8th largest city in the world). Overcrowding, high industrial growth, unplanned development, and a complete lack of enforcement of industrial pollution control have combined to create the biggest environmental degradation problem of Bangladesh. The entire greater Dhaka watershed is highly polluted and all the rivers surrounding Dhaka city are sources of public health hazard unsuitable for any use. Water treatment plants installed in the bank of the rivers Buriganga and Sitalakhya are unable to treat raw water, especially during the low flows, as the water is basically septic. Ground water extraction in Dhaka has reached to the extent of
13. water mining, as the water table is depleting at an alarming rate. Recent water riots in the peripheries of Dhaka are an indication of the gravity of the situation. The key challenge for DWASA is to ensure adequate water supply and to provide water to a growing low income community, especially slum dwellers, which represent about 30% of the total population.



**Water Services by DWASA under Army
Supervision
(Courtesy The Daily Star)**

14. **Urban Sanitation:** Urban sanitation is the single biggest challenge to meeting the MDGs on sanitation in Bangladesh. Although sanitation coverage in urban areas has been historically much higher than in rural areas, the situation is now reversing itself. Access to improved sanitation in rural areas has increased from 11 per cent in 1990 to 69 per cent in 2005. During that same period, urban coverage improved at a much slower pace, increasing from only 71 to 76 percent. Furthermore, there are huge geographical disparities within urban areas, as much of the progress has been achieved in municipal areas, while sanitation coverage in metropolitan areas has remained stagnant. In fact, the proportion of the population with access to improved sanitation in municipalities has risen from 53 percent in 1990 to 77 percent now. This level is higher now than that for metropolitan areas, where coverage has increased to only 75 percent from a level of 70 percent in 1990.
15. This huge gap between rural, municipal, and metropolitan areas is driven by the precarious situation observed in low-income communities—access to improved sanitation facilities within slum areas is particularly deficient. National data for Bangladesh¹ suggests that only 35 percent of slum households have access to hygienic facilities, while 60 percent use some kind of unhygienic facilities, and almost 5 per cent practice open defecation. Considering that over a third of the metropolitan population of Bangladesh live in such unhealthy environments², coverage rates in metropolitan areas will not improve unless the situation in slum areas is addressed.
16. Although low-income communities can be observed all over the country, the majority of slums and slum dwellers are concentrated in the biggest cities, particularly in Dhaka. In fact, Dhaka alone accounts for 63 percent of slum dwellers living in all metro areas, followed by Chittagong with 27 percent. Thus, urban sanitation in metropolitan areas nationwide will be largely determined by outcomes in those two city corporations. A recent LGED study shows that half of the households living in slums of Dhaka have access to unhygienic toilets only (hanging latrines, open latrines, broken pit latrines, etc). Although the other half have access to some kind of improved sanitation facilities, only one fourth of Dhaka slum dwellers benefit from the ideal situation in which there is also an absence of unhygienic latrines in their neighborhoods.

Slum households with only given type of latrine in the neighborhood				
Locality	Only hygienic latrines	Only unhygienic latrines	Combination of Hygienic and unhygienic	No Fixed Place
Dhaka CC	26.00%	50.38%	23.29%	0.33%

Source: Author's calculations using data from LGED 2005

¹ 'Census of Slum Areas and Floating Population', Bangladesh Bureau of Statistics, 1997.

² 'Slums of Urban Bangladesh Mapping and Census 2005' published by the Centre of Urban Studies in May 2006 suggests that 35% of total population live in slum areas.

17. Increasing access to improved sanitation in metropolitan areas requires urgent measures that address the specific situation of slum dwellers. Providing hygienic facilities and sustainable solutions in terms of maintenance and human waste removal is a priority that calls for partnerships among stakeholders, which involve government, public utilities, NGOs and the donor community. However, attempting to deliver sanitation services to those communities will encounter a number of specific challenges. The lack of an adequate policy framework, the lack of secure tenure and the consequent threat of evictions, technical difficulties of slum location and characteristics³, the pervasive role of mastaans, the limited capacity of service providers, etc., may all serve to undermine interventions. Accordingly, it is crucial to focus attention on identifying successful models that have already been implemented, and to work together in a coordinated manner to scale up such approaches.

Conclusion

18. Bangladesh is surely going to achieve the MDG targets for rural sanitation before 2015, the issue is sustainability and continuation of collective hygienic behavior by the entire community. In rural water it is likely that the country will be off track primarily in arsenic affected areas, unless a concerted and demand responsive effort is taken through the Local Governments, the community and private sector.

19. The key challenge is urban water and sanitation service, especially for the growing low income community including the slum dwellers. The problem is more serious in the mega city of Dhaka and the City Corporations. Institutional issues are a major challenge, rather than finance and or technical issues. With highly centralized and top down service delivery, there is little downward accountability among the service providers, specially the centralized agency responsible for the sector. Unbundling policy/regulatory functions and service delivery is the key to a sustained and accelerated service delivery. The most important impediment remains as a lack of any policy for the slums and shanties, in absence of which these communities will remain out of any service provisions, and put Bangladesh off-track in achieving MDG targets in urban water and sanitation.

³ Slums are often situated on undesirable, risky, and unreachable location, such as flood-risk areas, over water bodies, by the sides of the railways, which will complicate or even impede entirely the provision of sanitation services.