Sanitation in Bangladesh: Past Learning and Future Opportunities

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It is an honour to speak on this important occasion. We thank UNICEF Bangladesh and the conference organisers for the opportunity to share our thoughts with you today. I have been observing the progress of several Bangladesh water and sanitation programs, government services, and organisations for 15 years now. Numerous approaches have been tested and replicated. It has been a fascinating journey. But in some ways, it has only begun. Sanitation experts world-wide can learn from the Bangladesh experience.

History of sanitation promotion

Bangladesh is a hub of sanitation experimentation and model-building. It is internationally recognised as the place where Community-Led Total Sanitation (CLTS) first succeeded in eliminating open defecation from whole villages. Since that time latrine use has risen dramatically. This achievement rests on a broad foundation. Intensive sanitation promotion in Bangladesh has a long and complicated history dating back to the 1960s.

The Department of Public Health Engineering (DPHE), part of the Ministry of Local Government, started water supply and sanitation projects in the early 1960s. The initial

emphasis was on tube wells. By the 1990s, over 10 million tube wells dotted all parts of the country.

In comparison, sanitary latrine coverage lagged far behind. Open defecation was rampant, particularly in rural areas. DPHE installed some high-quality and high-cost sanitary latrines free of charge as demonstration models. The premise was that this would attract people's attention, and they would install more such latrines on their own. However, the scheme did not work. Even pit latrines did not become popular because there was no social mobilisation drive. Low-cost latrine production centers were well established, but public demand still was lukewarm. Sector professionals recognised the need to integrate sanitation and hygiene promotion with their water supply programs.

During the 1990s several NGOs became interested in promoting hygienic latrine use. The internationally acclaimed CARE-SAFER program, for example, forged new ground in hygiene and sanitation promotion in both rural and urban areas.

Between 2003 and 2006 a National Sanitation Campaign was a remarkable event, one which set in motion a number of activities, many of which continue to this day. Led by a dedicated and detail-oriented government Minister,[ii] the Campaign deployed a combination of top-down and bottom-up strategies. The campaign gave the lowest level of government, the union *parishad* (council),[iii] responsibility for achieving '100%' household latrine coverage. Results were carefully monitored by subdistrict and district-level officers. Subdistrict administrators (*Upazila Nirbahi Officers*, or UNO's) reminded union chairmen of their sanitation-promotion responsibilities during the Campaign, and many continue to do so.

Union chairmen visited each other's places, to discuss ways and means of persuading people to give up open defecation. Chairmen who achieved the '100%' goal were publicly recognised. School sanitation programmes contributed to the progress, and they continue to do so. School Management Committees have shown good potential to support them.

There are some widely recognised milestones in the Bangladesh sanitation story. As this chart shows, there was a great deal of activity between 2003 and 2006. Innovative groups, policies, and national events have established a stable foundation for ongoing, positive change, collaborative problem-solving, and meeting new challenges as they arise.

In regular task force or other sector coordination meetings, dialogue between sector professionals and policy makers goes on. Examples are: the National Sanitation Task Force and SACOSAN conferences. During October, designated as National Sanitation Month, rallies and other events remind people of the importance of sanitation.

Policy documents such as the *Pro-poor Strategy*, the *Sector Development Plan*, the *National Strategy for Water and Sanitation in Hard to Reach Areas Bangladesh 2012*, and others provide common frameworks to support coordination among diverse organisations and governmental agencies. A Policy Support Unit supports policy development and disseminates information among multiple organisations and agencies.

Since 2008 the elementary school curriculum for grades 3, 4, & 5 has taught children about the importance of sanitation.

Achievements in latrine coverage

All of this activity has been successful in terms of persuading the majority of the Bangladesh population to start and continue using household latrines, although there has been some inevitable back-sliding in places.

The Government of Bangladesh did a baseline survey in October 2003, before the Sanitation Campaign started. This study found **33 percent** of all households using what the Government defines as "hygienic latrines" (latrines with water-seals or other secure covers used by no more than two households). Twenty-five percent were using "unhygienic" types, and **42 percent** had the habit of open defecation. (Government of Bangladesh 2005a) There was no national, follow-up survey after the campaign finished, but improvements are visible in most areas of the country.

This diagram presents JMP data from 1990 to the present, showing the dramatic progress in the use of latrines and an impressive reduction in open defecation.

Mind-set changes

Most importantly, the general mind-set of the rural and urban Bangladesh populations changed to the point where most people in most parts of the country consider open defecation to be a socially unacceptable practice. Five years after the National Campaign ended, we heard many comments about the "revolutionary" nature of changes in defecation practice. Asking whether it would be possible to return to defecation in our 3000-household survey in 2010, we found the great majority of respondents saying that it would be impossible.

Visitors to rural areas will find changes such as this: gardens and wooded areas formerly used for open defecation now have latrines in them.

Some child health trends

Child health has improved since the days of the Sanitation Campaign. Positive trends have several reasons, but improved sanitation is sure to be among them. Stunting, which is associated with diarrhea-related malnutrition and poor general health, has declined, although child stunting in Bangladesh still is at a "high prevalence" level, by World Health Organization standards.

Under-five mortality, frequently associated with water-borne diseases, shows a positive downward trend nationally, but the rate is not good in urban slums, where sanitation tends to be very poor.

Reviewing the Bangladesh sanitation experience

During the past year we have spoken with 40 sector professionals -- staff of 23 different governmental, non-governmental, U.N., and donor organisations -- about the history and current status of sanitation in Bangladesh[iv]. We also interviewed ten union council chairmen about sanitation issues in their communities.

The reasons for rapid and sustained progress

The sector professionals we talked with emphasised a number of reasons why sanitation has progressed rapidly in Bangladesh.

Political will supports sanitation improvement. Local government institutions (union- or municipal-level) continue to be at the forefront of local-level sanitation change. For example, the Dhaka Water and Sewerage Authority (DWASA) is providing piped water to urban squatter settlements. Union chairmen and pourashava officials are working with numerous agencies and organisations to improve sanitation in their regions.

A reliable group of donors – especially Danida, DFID, the British aid agency, Netherland's DGIS, the Swiss Development Corporation, and UNICEF – have provided consistent bilateral and multi-lateral support for innovative programming and public outreach.

Media campaigns have reached the general public with messages about the health, environmental, and social benefits of improved sanitation.

Technological innovations are urgently needed, to cope with challenges of different environments, seasons, and ways of life.

Almost all of the sector professionals we met with remarked that **the national context has changed**. They generally agree that sanitation programming needs to be adjusted to the new situation. There is less poverty. Bangladesh people want to use some of their increased income to improve their local environments. They want more latrine options and more information about what is available.

Girls' education is getting more attention, and girls' rights are being considered to an increasing extent. So the formerly taboo subject of menstrual hygiene is now receiving attention in schools and among education policy makers.

The Bangladesh situation has benefitted from the long-term commitment of several organisations and agencies managing large-scale sanitation promotion programs. Early projects laid the foundation for intense activity and innovative programming that ensued after the year 2000.

Several different approaches have been used, but all are to some degree "participatory" in nature and focused on community-led strategies. They strive to engage people (house owners, schools, adults, children, men and women, religious institutions, local leaders, municipal agencies) in planning and paying for their own sanitation changes. They strive to establish a sense of "ownership" and pride in sanitation improvements and the clean, nice-smelling environments that result.

These projects are (or were) very, very large, all reaching tens of thousands of rural and urban communities. Many have involved multiple collaborating organisations, some as many as 20 or more. Thousands of staff members have reached millions of individuals with their messages in villages, urban squatter settlements, schools, mosques, and other community locations.

Present challenges and opportunities

All of the professionals we met are eager to move forward and take a new look at sanitation in the changed Bangladesh national context – to explore new approaches, to tackle

some of the thorniest problems. Now, most agree, we are in a “post-ODF” phase. While some pockets remain, the majority of the population seems to have abandoned open defecation. But the story is far from over.

The professionals we spoke with emphasised a number of sanitation challenges still confronting Bangladesh.

Suiting latrine technology to different environmental, geological, and social conditions is a widely recognised challenge. River islands, such as *chars,* for example, are prone to frequent erosion damage, suddenly displacing whole villages. Geological depressions, known as *haors,* are deeply flooded for half of every year.

Almost half of all household latrines now in use need to be upgraded, if they are to meet minimum Government or JMP standards.

There is a continuing need to devise new ways to sustain effective sanitation practice during natural disasters, such as cyclones, tornadoes, flash floods, and unusually deep floods.

There still are neglected pockets where open defecation persists: remote hilly areas, congested “colonies,” marginalised ethnic populations, nomads, and other “Hard-to-Reach” places.

There is not enough statistical monitoring of the current sanitation situation. New, national-scale statistics are needed to guide decision-making.

We will return to three other critical issues in a moment.

Such challenges are not limited to Bangladesh. They are common to any country that is serious about promoting hygienic latrine use.

Like the sector professionals, the ten union chairmen we interviewed also expressed concern about some of the same sanitation challenges. Most of the chairmen -- including those whose unions reached ‘100%’ without any subsidies -- are helping poor households to upgrade, repair, or replace their latrines.

Some technology basics

Many general pointers about latrine technology were mentioned by sector professionals. A few basic ones are these:

Provision for water should be required whenever a new latrine is constructed.

Considering the importance of weather and natural hazards in Bangladesh, elevating the latrine platform is usually recommended.

A twin-pit latrine postpones the pit-emptying chore, often by years, if the pit is deep enough.

After human waste decomposes for one or two years in an unused pit, it can be used as fertiliser for vegetables or other food crops. This is a culturally controversial practice, but some organisations have found farmers surprisingly receptive to using such compost.

Light-weight, portable latrine pans, such as the Sato-pan, are very useful to populations that are displaced by emergencies, or who move around a lot.

Issues of special concern in the Bangladesh context:

Today we wish to highlight three particularly important sanitation challenges that came to light in our recent discussions and field visits: hygiene, urban squatter settlements, and fecal sludge management. Each of these matters has a technical side and a social side. And all three demand re-thinking of some governmental and policy approaches to sanitation.

Hygiene

One critical challenge is hygiene. A recent national hygiene survey found only 34 percent of household latrines to be both improved and clean. Less than half had soap and water available for hand washing. (In our World Bank study, we also found more than half of all rural household latrines to be unclean. They had exposed feces lying about, or the pit contents leaked out onto open ground.)

The public needs to be persuaded to keep latrines free of openly exposed feces, if the public health advantages of latrine use are to be sustained.

Another side of the hygiene issue is more complicated. It is the whole range of human behaviours that prevent spread of diarrhoeal disease and other hygiene-related illnesses: behaviors such as hand washing, protection of domestic water, and solid waste management.

Water availability is required, but addressing personal hygiene habits is *not* a job for engineers. It is a health-education task. Until now, the Ministry of Local Government has been in charge of sanitation programming. But the Ministry of Health and the Ministry of Education have manpower and expertise that is suited to tackling hygiene challenges. Are

Health and Education sufficiently engaged in the sanitation issue? Our discussions suggest, not yet. We urge government leaders to take this opportunity, to develop stronger inter-ministerial coordination, in order to confirm the public health benefits of the nation's sanitation successes.

Urban squatter settlements (*bastis*)

The second critical challenge we want to highlight today concerns sanitation in urban squatter settlements, or slums/*bastis*. (Some of the same problems also are found in crowded rural areas.)

The urban population of Bangladesh is increasing, as it is in other countries. Fed largely by migration from rural areas, the urban population is estimated to be increasing at a rate of almost three percent per year. In 2010 the urban population count was 52.2 million, and it is projected to increase to almost 100 million by 2030. (Zillur Rahman 2014)

The sanitation discussion thus far has emphasised rural issues, but the time has come to think about urban situations, especially the extremely crowded *basti* conditions. The urban slum context is different in important ways from the rural village context, and these differences affect sanitation possibilities. For one thing, populations come and go. Slum dwellers do not own their homes, whereas most villagers do own. They may or may not have the right to stay in their small huts, depending on the land tenure situation. Water resources may or may not be adequate for normal daily needs, such as clothes-washing, utensil washing, and (of course) latrines. They survive without the safety-net benefits -- such as old

age pensions, disabled support, or vulnerable group assistance -- that are available to rural populations.

The sanitation discussion thus far has focused on household latrines. The WHO-UNICEF Joint Monitoring Program counts as 'improved' only latrines used by single households. But the crowded conditions of urban (or rural) slums almost never have enough space for single-household latrines. There are some outstanding examples of well-managed community latrines in Bangladesh. So, sustainable group facilities deserve a place on the table of acceptable sanitation options.

Large-scale change in urban slums is unlikely to occur, unless Government steps up with a viable policy on sanitation and other aspects of life in these huge, congested, and often dirty settlements. Until now foreign aid has supported most initiatives, but this is not a viable approach in the long-run. The time is right to build on past achievements, use this opportunity to develop strong policies and databases for urban slums.

Fecal sludge management – is the third critical issue.

As the new Bangladesh focus on fecal sludge management has taught us, it would have been wise to think about the full stool-management chain at the beginning of the national programme, rather than trying to catch up later on. The steps are very well known by now. 1) Confinement and separation of human feces is the first step. But this must be followed with 2) a plan for clearing out the waste and transporting it, 3) treatment of the waste, and 4) final disposal.

Rural and urban sludge management methods differ. There may have been more progress in rural areas than in urban settlements, though there is no statistical data on sludge management in villages. We have seen sweepers carefully burying sludge that they draw up from pits, and we have seen them dump it into canals and on fields. Some poor people are known to clean out their own latrine pits. (They often do it secretly at night.) But again, we do not know how widespread this culturally controversial practice is.

We have already mentioned the possibilities opened up by twin-pit latrines and the benefits of using compost as fertiliser.

In urban areas septic systems, sewerage, and large waste treatment facilities are needed, though none of these yet appear to work adequately in any municipalities or city corporations. The sector professionals we met mostly agree that the public is blissfully ignorant of this gap in services. None of us, after all, thinks much about where our waste goes when we flush our apartment toilets. Nor do we like to think about that subject. So public awareness of the health value of good sewerage and waste treatment needs to be increased.

Once the public is made aware of the importance of these services, however, people who pay taxes may be willing to pay for them. There is no other way to sustain a full-scale urban sewerage system than to levy taxes on those who use and benefit from it. This is a politically difficult pill to swallow, but policy makers will need to face this reality sooner or later. This may be a political challenge, but it also is a sanitation opportunity.

Some learning points from the Bangladesh case

The Bangladesh case can help us to understand what long-term sanitation success means. The results so far are positive, but it would be unwise to ignore the remaining challenges. Some important learning points emerge from the experience thus far.

A Changed Sanitation Concept. "Sanitation" is much more than "latrinisation." It is a change in mind-set, resulting from public understanding of the public health benefits of hygienic management of fecal waste. It requires total-community behavior change to be fully effective. The new sanitation concept has been communicated in many ways to the Bangladesh public over a period of some 20-30 years now.

Social Mobilisation & Institutional Coordination. Top-down plus bottom-up approaches make a powerful combination. The Bangladesh sanitation history shows an unusually high degree of government-NGO collaboration. Different combinations of governmental and NGO efforts are found in different places. Involving women and children in the change process has been essential to success. Women and children have had genuine leadership roles in turning things around.

Technology. In this challenging physical environment – actually multiple type of challenging environments – latrine technology must adapt to hazards such as flooding and cyclones. Social environments vary too. Different ethnic groups, and even different types of families, prefer different arrangements. A flexible approach to technology definitely supports increased latrine-use rates. The quality issue deserves priority attention. High levels of breakage and leaking show that attention to quality of materials is very important.

Money. It is not expensive to stop open defecation in rural areas, but maintaining and upgrading latrines eventually do cost money. Flexible financing, credit, and cost-sharing are needed to support latrine use, especially by poor households. Latrine parts producers also need credit.

Conclusions

The ultimate purpose of improving sanitation is to improve public health. While the Bangladesh achievements are truly remarkable, the expected health outcomes are yet to be fully realised. This can happen if Bangladesh adopts an expanded, holistic programme integrating educational, health, nutrition, and technical approaches.

The most important learning point ten years after the Sanitation Campaign is this: **Sanitation improvement is a continual process**. It is never finished. New households are formed. Floods and cyclones come. Concrete breaks. Pits fill up. Migrant laborers and nomads come and go. There always will be new problems to solve, new leaders to educate. The Bangladesh experience has shown that declaring thousands of villages as ‘100 percent’ or ODF is just the beginning of this success story. Bangladesh has prepared a strong foundation for its sanitation programme, and future developments will offer many new action and learning opportunities.

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Endnotes

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[ii] Abdul Mannan Bhuiyan (1943-2010), Minister of of Local Government, Rural Development, and Cooperatives

[iii] A union parishad/council (UP) represents a population of 20,000-50,000. Each union is divided into nine wards, each of which has an elected representative. Three women additionally are elected to the council; each woman represents three of the nine wards. There is a separately elected UP chairman representing the whole union. A union has numerous distinct, named villages and neighbourhoods. In 2001 there were 4484 unions in Bangladesh.

[iv] We met in 2015 with the following sector professionals, who kindly shared their thoughts and insights with us. Their comments serve as the basis for this report. They are: Engr. Wali Ullah (Sanitation Secretariat), Dr. Dibalok Singha (DSK); Hasin Jahan and Dipok Chandra Roy (Practical Action); Milan Kanti Barua and Arif Md. Waliullah Bhuiyan (BRAC-WASH), Shah M. Anowar Kamal (UST & WSSCC), Md. Sayedur Rahman and Dr. Hamidul Haque (UST), Alok Majumder (Dutch WASH Alliance), Azahar Ali (SPACE), Yakub Hossain and Masud Hassan (VERC), Zillur Rahman and Khandker Zakir Hossain (Plan), Rokeya Ahmed (WSP), Shariful Alam (Government); Dr. Khairul Islam and Mujtaba Mahbub Morshed (WaterAid Bangladesh); Shirin Hossain, Md. Monirul Alam, Syed Adnan Ibna Hakim, and Shofiqul___ (UNICEF); Kader Chowdhury (DPHE/UNICEF), Afroza Ahmed (ex-UNICEF); Rozina Haque, Md. Abdullahil Baquee, Sagarika Indu, and Arunava Saha (BRAC-Targeting Ultra-Poor/TUP); Nurul Osman (HYSAWA Fund), Dr. Md. Mujibur Rahman (ITN-BUET); Md. Mohsin and Md. Abdur Rauf (Policy Support Unit); Kathrin Tegenfeldt and Md. Faruqe Hussain (WASHPlus/FHI360), Zobair Hasan (DORP), Joseph Halder (NGO Forum for Drinking Water and Sanitation), and Shehlina Ahmed (DFID), Anowarul Haq (CARE Bangladesh), and Alauddin Ahmed (WHO).

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