

Sustainability of Sanitation in Rural Bangladesh

by

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Introduction

Bangladesh is well known for its significant innovations and achievements, as policy makers have given high priority to scaling-up sanitation programs over the past decade. Some public education approaches, such as “community-led total sanitation” (CLTS), are considered so successful, that they are being tried in other countries and world regions. The Bangladesh Government and development partners are planning new efforts to consolidate gains and fill in gaps. The World Bank’s Water and Sanitation Program, therefore, decided that it was a good time to see if the Bangladesh achievements were sustainable and conceptualized a study on the Bangladesh experience. The study was recently completed by The Manoff Group’s three-company team.

The Bangladesh National Sanitation Campaign (2003-2006)

In 2003 the Government of Bangladesh launched a National Sanitation Campaign and declared its intent to meet its sanitation-related Millenium Development Goal by 2010. (Recently the target date was changed to 2013.) This was an inclusive, broad-based effort. All of the national-level organizations involved in promoting sanitation improvements contributed to planning the campaign. Good ideas were shared widely among governmental and non-

governmental agencies. Principal responsibility for achieving the national goal of “100%” sanitation was assigned to the union chairmen, who got gold plaques and cash rewards for union development when their unions were officially declared as “100%.” (The union is the lowest tier of government in Bangladesh.)

This was not the first sanitation campaign in Bangladesh; but it was the first one to reach the majority rural population. People at all levels of society got involved in this effort, which is remembered as a ‘revolution’ (*biplob*) by many whom we interviewed. Some considered it to be a genuine social movement (*jagaron*), like the one that had led up to national independence in 1971. There were rallies. School children monitored their parents’ and their neighbors’ defecation practices. Village police burned down fences surrounding open latrines in some places.

Numerous slogans circulated. One of the most dramatic slogans, developed as part of the community-led total sanitation approach, reminded people that if anyone defecates openly, flies will spread feces onto others’ food. So open defecation means that people will be eating each other’s feces. In South Asia -- where cultural notions of ‘purity’ and ‘pollution’ are universal, and where feces are perceived as one of the most ‘polluting’ of all substances – this is an extremely worrisome, alarming message. It did get people’s attention.

The results of this campaign were impressive. The country’s rate of latrine use dramatically increased in a very short time. According to the UNICEF-WHO Joint Monitoring Program, open defecation in rural areas decreased from 24% to 8% between 2000 and 2008. This change – which is still going on – is the result of a huge human effort, often involving a lot

of inter-personal communication, persuasion, and pressure from small neighborhoods all the way up to the center of the nation's administrative system.

The Study Design

We investigated sanitation-related practices, facilities, services, and perceptions in 53 unions that had achieved 100 percent latrine coverage 4.5 or more years before the study began. Study unions were mostly selected randomly, but a few were included because they were of special interest. The principal goal of the study was to analyze the status of sanitation in the study unions.

The study covered only a limited set of "sanitation" issues. The focus was on defecation practices and facilities and related services only. Other sanitation topics, such as hand washing,, environmental pollution, and solid waste management, were not investigated in detail.

We used a combination of quantitative and qualitative research methods in doing the study, which went on for eight months, from October 2009 to May 2010. Survey researchers did 3000 household-level questionnaire interviews in randomly sampled households of 50 unions. Groups of three to five qualitative researchers did in-depth studies of 15 of the same unions plus three others. We interviewed latrine users and non-users, latrine producers/sellers, latrine pit cleaners, and children.

Study unions had been covered by **four different types of approach** during the sanitation campaign. The campaigns were conducted either by (1) Local government only, (2) NGOs under contract with a GOB-Donor group (Danida or UNICEF plus the Department of Public Health Engineering), (3) NGOs using CLTS methods, or (4) NGOs not emphasizing CLTS methods.

In our discussions with villagers and their elected leaders, we found that **different sanitation promotion strategies** were used in varying combinations. One emphasized persuasion and motivation, and the other emphasized fear and punishment of open defecators. This is more of a continuum – a matter of degree – than a rigid, either-or classification.

It is important to understand that, whatever the intervention approach, **the Union Chairman, an elected official, was designated as the campaign leader.**

Sanitation Outcomes

In this study we counted “improved” latrines, meaning those which confine feces and have some kind of cover over the pit. Unlike the Joint Monitoring Program, however, we did not exclude any shared latrines from our discussion of the “improved” group, which we refer to as **IMP/S** in our report.

According to this definition, 89.5 percent of household latrines were found to be IMP/S in the 50 study unions covered by our household survey.

There were some differences in household latrine frequencies among unions according to the approach used during the sanitation campaign; but the study design did not allow for rigorous assessments or comparisons among the approaches.

Somewhat more than half (53%) of survey households had changed their latrines during the five year period preceding the study. Nine percent (9.4%), many of them poor or in areas hit by extreme weather events, had down-graded their latrine type. **Up-grading of latrines during the past five years was more frequent in places covered by follow-up sanitation programs after the formal campaigns ended.**

A large variety of latrine types were found in addition to the standard concrete slab covering a pit lined with concrete rings. Some of them are shown in these two slides. [SLIDES-12-13]

Other Achievements

As well as disseminating the idea of latrine use, the national campaign resulted in other important changes. One was the growth of mostly-small businesses that produce and sell concrete rings and slabs. Entrepreneurs were encouraged at first by NGOs and union chairmen to produce latrine parts needed to reach the “100%” goal. Producers of clay rings formerly used in water wells also were pressed into service in areas where these came to be popular as latrine pit liners. Eventually most of the businesses that survived diversified their products, selling other types of concrete items in addition to latrine rings and slabs. Another business that formed or expanded in response to increased demand was latrine pit-emptying..

Demand increased largely because of a dramatic change in social norms. The household latrine stopped being a status symbol of interest only to the elite and came to represent a dignified life style in all sectors. As has been reported from India, marriage arrangements routinely now include a review of latrine facilities in a prospective bride’s or groom’s home.

Women in particular value latrines as a way to maintain purdah behavioral codes and avoid social ‘shame’ (*lojja*).

The study team found the public’s interest in latrine usage to have increased in the vast majority of places visited – but not in all. In all places, though, whatever their levels of enthusiasm, villagers demonstrated clear understanding of (a) the characteristics of a ‘health-promoting’ latrine – as one that confines feces -- and (b) the connection between universal latrine use and elimination of diarrheal diseases.

In two-thirds of our study unions we found union chairmen still actively working on sanitation improvement. The remaining one-third they were indifferent to sanitation. The two-

thirds who remained committed to this issue had worked for the past few years with minimal support from the central government, which went through a crisis between 2006 and 2008. Some chairmen had help from NGOs currently running sanitation programs in their unions, but others did not. In fact, those without NGO support seemed to be more actively taking initiatives to keep their constituents informed, alert, or worried about possible (mostly imaginary) punishments if they did not have household latrines. None was monitoring sanitation coverage at the time of the study.

Challenges to Sustainability

We identified several challenges to sustainability of sanitation improvements in our study unions. Social and political dynamics affect sustainability.

A very important social matter is new house construction associated with joint family division. In the normal course of things, a joint family (two or more married brothers and their parents and families) will gradually divide up its lands and often also its common residence. In the absence of building codes requiring latrines to be included in new houses, some are built without latrines.

Another social challenge is posed by internal migration. Large numbers of agricultural laborers migrate around the countryside during peak agricultural labor seasons. Most of them need public latrines, but the national campaign did very little about public latrines, and there are few relative to need. In most places with large numbers of migrant laborers we found ample evidence of open defecation.

A technical problem is that the facilities in use wear out too easily and need replacement too often. Home-made latrines are gradually being replaced with concrete ring-slab sets in many

places; but purchasers of concrete parts can choose between low and high quality. Many choose low quality concrete, which is fragile and may not even be reinforced with iron bars. We heard of nine accidents and one death resulting from concrete slab breakage. Another technical problem is the need to clean the latrine pit. This costs money, and many consider it to be too expensive.

The most important challenge we found in this study relates to latrine cleanliness. Fifty-six percent of the IMP/S latrines in our household study sample were not clean. Our definition of “unclean” meant either feces leaking profusely from the pit, and/or feces visible on the pan, floor, or water-seal. An interesting finding was that one-third of the latrines designated as “unhygienic” by GOB or “unimproved” by JMP were actually clean.

Factors Associated with Positive or Negative Outcomes

Latrine Cleanliness. Several factors were statistically significant contributors to latrine cleanliness¹. Latrines that were more well constructed (having a roof, vent pipe, and/or intact water seal) tended to be cleaner. Having a convenient water source was quite important. Cleanliness was associated with non-sharing or fewer households sharing. Latrines that were closer to living spaces were much more likely to be “clean” than those located farther away. Ninety percent of latrines attached to the house, for example, were found to be “clean.” Existence of a follow-up program also was associated with latrine cleanliness.

IMP/S Latrine Use. A **different group of factors** was statistically associated with having an improved latrine (shared or not). Some of them are listed on this slide.

- High income (very strongly associated)
- Being a female-headed household (very strongly associated)

¹ Strongly associated = P value of 0.05 or less; very strongly associated = P value of 0.00.

- Remembering the ODF campaign (strongly associated)
- Having a follow-up program (strongly associated)
- Having been visited by someone advising latrine use (strongly associated)
- CLTS program approach (strongly associated) ²

Having received a free latrine from the union council did not have a statistically significant effect; nor did membership in a micro-credit NGO group. Poor people getting remittances from abroad are likely to use their extra income to install latrines because of social pressures to do so and a wish to enhance family dignity.

Open Defecation was linked to a variety of factors. A few of them were:

- **Weak institutional support for latrine use by local government;**
- Influx of large numbers of agricultural laborers or homeless (“floating”) people;
- **Failure of latrine sharing arrangements;**
- **Natural and environmental factors** contributing to open defecation are
 - Normal floods,
 - Flash floods,
 - Rain (if there is no roof), and
 - Rodents.
- A less obvious factor is some men’s wish to avoid ‘polluting’ contact with menstrual blood in latrines that they share with female relatives.

Conclusions

The findings of this study definitely show that the 2003-2006 sanitation campaign achieved its goal of getting rural households to adopt latrine use. This was, however, just a “latrinization” campaign. A broader view of sanitation, especially hygiene and latrine maintenance, is needed in the future.

²Households in CLTS program areas are not significantly different from others in terms of household wealth rank.

The study also has shown that social and governance factors are at least as important as technical ones, perhaps more so, in scaling-up and sustaining sanitation improvements. Engineering challenges do not necessarily impede making sanitation improvements where there is strong individual, family, and political will. The problem of cleanliness shows, however, that building and using latrines in itself cannot guarantee improved public health outcomes if hygienic maintenance is neglected. We have found “sustainability.” But the question remains: Is this enough?

The strong involvement of locally elected leaders supported by a broad group of volunteers, including a great many women and children, was the key to the success and sustainability of this effort. Keeping elected officials involved will be critical to maintenance of gains in the long-term. Continued monitoring of facilities and their cleanliness is necessary to future progress. This should be a union council responsibility.

Our study concludes with four principal recommendations:

- Establish quality standards for latrine parts manufacture.
- Monitor sanitation coverage in all unions.
- Offer low-interest loans to poor households for the purpose of latrine purchase.
- Above all, keep local government involved and responsible for sanitation.

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ANNEX

Measuring Latrine Coverage in Bangladesh

Ways of measuring the Bangladesh sanitation achievement differ between two groups of experts. The government considers a “hygienic” latrine to be one which confines feces, has an intact water-seal or other tight pit closure, and is shared by no more than two households. The most recent (June 2008), official government estimate of “hygienic” latrine coverage in rural areas is 88.2%. (Government of Bangladesh, Sanitation Secretariat 2010) The Joint Monitoring Program (JMP) of UNICEF and the World Health Organization count “improved” latrines, which confine feces but do not necessarily have tight pit closures. JMP counts only latrines used by single households, not shared ones, as “improved.” The most recent official JMP estimate of “improved” latrine coverage in rural Bangladesh is 52% as of 2008. (JMP 2010) If the 37% shared latrines were included, the total would be 89%.

Two widespread practices account for the differences between our findings and others. One is water-seal breakage, found in 45% of survey households. The Government of Bangladesh excludes latrines without intact water-seals or other secure pit closure from its “hygienic” category. But the Joint Monitoring Program includes such structures if other conditions are met. The second is latrine sharing, found in 37% of survey households. JMP entirely excludes shared latrines from its “improved” category, and the Government of Bangladesh excludes latrines shared by more than two households from its “hygienic” category.