Scaling Up Rural Sanitation

Long-Term Sustainability of Improved Sanitation in Rural Bangladesh

Dr. Suzanne Hanchett, Dr. Laurie Krieger, Mohidul Hoque Kahn, Craig Kullmann, and Rokeya Ahmed

June 2011

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The Water and Sanitation Program is a multi-donor partnership administered by the World Bank to support poor people in obtaining affordable, safe, and sustainable access to water and sanitation services.

By Dr. Suzanne Hanchett, Dr. Laurie Krieger, Mohidul Hoque Kahn, Craig Kullmann, and Rokeya Ahmed

Today, 2.6 billion people live without access to improved sanitation. Of these, 75 percent live in rural communities. To address this challenge, WSP is working with governments and local private sectors to build capacity and strengthen performance monitoring, policy, financing, and other components needed to develop and institutionalize large scale, sustainable rural sanitation programs. With a focus on building a rigorous evidence base to support replication, WSP combines Community-Led Total Sanitation, behavior change communication, and sanitation marketing to generate sanitation demand and strengthen the supply of sanitation products and services, leading to improved health for people in rural areas.

This Technical Paper is one in a series of knowledge products designed to showcase project findings, assessments, and lessons learned in Scaling Up Rural Sanitation. This paper is conceived as a work in progress to encourage the exchange of ideas about development issues. For more information please email Craig Kullmann at wsp@worldbank.org or visit www.wsp.org.

WSP is a multi-donor partnership created in 1978 and administered by the World Bank to support poor people in obtaining affordable, safe, and sustainable access to water and sanitation services. WSP's donors include Australia, Austria, Canada, Denmark, Finland, France, the Bill & Melinda Gates Foundation, Ireland, Luxembourg, Netherlands, Norway, Sweden, Switzerland, United Kingdom, United States, and the World Bank.

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SANITATION FOR ALL

THE DRIVE TO 2015

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Executive Summary

Background

When sanitation sector professionals hear the words "sanitation" and "Bangladesh" the first thought that may come to mind is that it is the birthplace of the Community-Led Total Sanitation (CLTS) approach. However, there is more to the sanitation story from Bangladesh that needs to be shared. Lessons extracted from the Bangladesh experience could richly inform sanitation strategies in other countries, particularly those struggling to increase access to basic sanitation in rural areas.

Some background may be helpful. From 2003 to 2006, the Government of Bangladesh (GoB) scaled up efforts to address unsanitary household practices through a national sanitation campaign that engaged multiple levels of government. The government's goals were to achieve 100 percent sanitation coverage and stop open defecation in rural areas by 2010.

In a departure from previous efforts, this campaign emphasized the *confinement* of feces from the environment rather than the *construction* of a durable, sanitary latrine. It could be argued that this focus helped contribute to and accelerate latrine coverage and cessation of open defecation. Additionally, during this campaign, central, district, and sub-district governments took collective action and played a lead role in social mobilization. The central government also rewarded Union Parishads (the lowest tier of administrative government) that successfully promoted the installation of latrines in all resident households, declaring the Union Parishads "100 percent sanitized" or open defecation-free (ODF).

While local government took a lead role, various efforts from nongovernmental organizations (NGOs) helped to bolster and support implementation in many areas before, during, and after the campaign. There were roughly four implementation approaches:

(1) local government authorities received limited or no assistance from NGOs (GOB-only); (2) local governments received some support from international donor organizations (GOB-Donor); (3) local governments received strong support from NGOs using Community-Led Total Sanitation methods (NGO-CLTS); and (4) local governments received strong support from NGOs not dedicated to using Community-Led Total Sanitation (NGO-Non-CLTS). The pioneering work and rapid scale-up of rural sanitation in Bangladesh using the total sanitation approach is starting to be adopted by governments in South Asia, Southeast Asia, and Africa as they seek to address the issue of basic access to rural sanitation. One area of particular interest for sector professionals and policy makers is to **better understand both positive factors of sustainability and factors that might work against sustainability of rural sanitation.** Knowing these could help inform future programming and policy decisions.

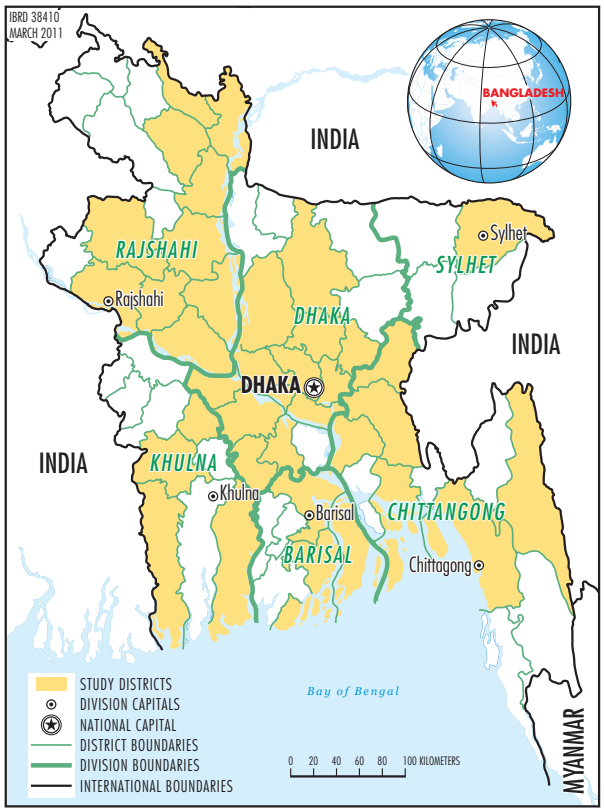
Methodology

To learn about the sustainability of rural sanitation in Bangladesh, the Water and Sanitation Program (WSP), in conjunction with the Government of Bangladesh and NGOs, felt it was important to investigate:

- First, the degree to which sanitation behaviors and facilities has been sustained in Union Parishads that were declared ODF at least four and a half years ago.
- Second, the level of sanitation programming that has been sustained in these Union Parishads, and assess to the extent possible whether this programming has contributed to sustained behaviors.
- Third, if there are there perceived benefits of being ODF and have they contributed to sustained latrine use.
- Fourth, the degree to which private sector sanitation service providers have been sustained, and whether household access to them contributes to sustained latrine use; and
- Lastly, identifying other factors that might work in favor or against sustained sanitation behaviors and facilities.

The research team used quantitative and qualitative research methods to analyze the current status of 53 out of a universe of 481 Union Parishads declared ODF before June 2005 (Illustration 1). The study unions represented different geographic areas and the four implementation

ILLUSTRATION 1: LOCATION OF STUDY DISTRICTS



approaches mentioned above. A household survey covered 3,000 households in 50 of the Union Parishads, and qualitative research was conducted in a sub-sample of 18 Union Parishads.

Survey Results

Four and a half years after the Union Parishads studied were declared ODF:

89.5 percent of sample households own or share a latrine that safely confines feces. Of the remaining 10.5 percent of households, 2.5 percent do not have any latrine; 5.5 percent have a hanging latrine or facility that drains directly into the environment; and 2.5 percent use an open pit without a slab. While this finding indicates some backsliding, the fact that the Union Parishads sampled in this study are not entirely ODF should not overshadow the large-scale acceptance and use of latrines that has taken place in these Union Parishads. At the same time, the 10.5 percent of households defecating in the open or not properly confining feces should not be neglected as they continue to pose a public health risk.

While access to an improved or shared latrine is high, the picture varies depending on which definition is used to classify latrine access. Based on definitions used by the GoB, only 37 percent of households sampled met the criteria for a "hygienic" latrine (Figure 1, left); based on definitions used by WHO and UNICEF Joint Monitoring Program, 52 percent met the criteria for an "improved" latrine, which excludes sharing (Figure 1, right). This implies there is more work to be done to help households improve current facilities.

70 percent of sample households have owned their current latrine for at least three years, indicating that the majority of latrines built are fairly durable.

All four implementation approaches resulted in high rates of sustained latrine use and low rates of open defecation. The use of improved or shared latrines and prevalence of open defecation varied slightly across the four approaches. One possible explanation for the similarity in sustained outcomes across approaches could be the GoB's countrywide commitment to diffuse the idea that latrine use is important for household health and development. The government's commitment may have been the cornerstone for influencing

FIGURE 1: PERCENTAGE OF RURAL HOUSEHOLD LATRINE COVERAGE IN ODF DECLARED UNIONS (N = 3,000)

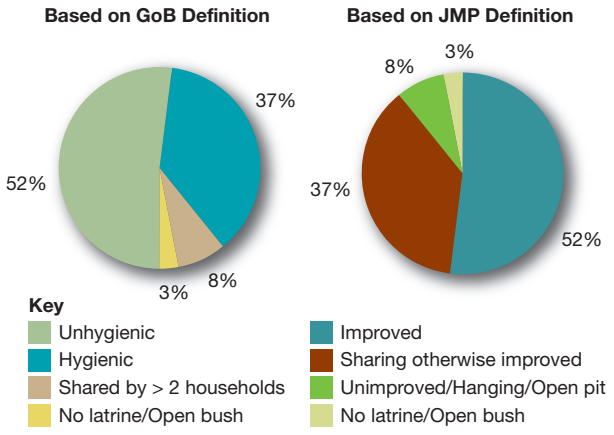
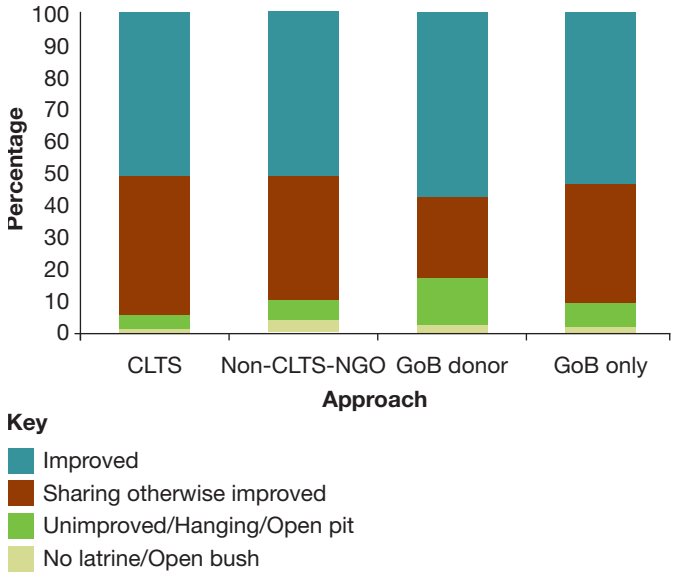


FIGURE 2: PERCENTAGE OF RURAL HOUSEHOLD LATRINE COVERAGE BY APPROACH (n = 3,000)[1]



the social norms in favor of improved sanitation behaviors and facilities, regardless of the specific approach (Figure 2).

Key Findings

Programmatic and social factors correlated with sustained use of improved latrines:

Households that reported having been exposed to a follow-up program were 1.8 times more likely to have an improved or shared latrine compared to those that did not receive a follow-up program.[2] Additionally, households that were visited by someone who advised them on latrine use were 1.4 times more likely to have an improved or shared latrine compared to those who did not report receiving a visit. It was found that two-thirds of Union Parishad chairmen still promote sanitation by reminding constituents of the importance of 'hygienic' latrine use, providing latrine parts to poor families, declaring local rules against open defecation, and following up on sanitation-related complaints. In-depth research in 18 Union Parishads showed that about half were still using their annual development program funds on sanitation. It was also noted that 26 out of the 53 Union Parishads studied had some form of follow-up program by an organization other than the Union Parishad. This study suggests that on-going programming and continued reinforcing messages may be a contributing factor to sustaining sanitation behaviors compared to households that did not receive such messages.

Households with female heads were 2.5 times more likely to have an improved or shared latrine compared to households headed by males. A possible explanation is related to the concept of *purdah* that exists in Muslim and Hindu cultures. A latrine offers women privacy for defecating, urination, and menstruation management, which allows them to adhere to *purdah* and avoid the shame of being seen by men at these times. This study suggests that the 2003–2006 campaign possibly tapped into latent demand by millions of females to have a latrine for cultural reasons.

Access to private sector providers is a factor that enables sustained use of improved latrines:

At least 95 percent of households reported an ability to access to latrine materials and skilled masons in a local market. Moreover, 74 percent of households knew where to find a latrine pit cleaner. The emergence of a mature private sector means that market forces have allowed most households to access affordable parts and services that can help sustain the use of improved and shared latrines. Mass production of latrine parts has made latrine ownership a possibility for households of modest means, though not for the very poorest. It is important to note that the businesses that remained operational since the end of the campaign tended to sell a variety of concrete products, and not just latrine parts.

Other factors that enable the sustained use of improved latrines:

Social norms around open defecation and latrine use have positively changed, which likely was a result from sanitation and hygiene promotion. Formerly, latrine use had been the norm mostly among upper-income groups or in areas covered by earlier campaigns. Now it is a socially accepted practice at all levels of society, including the

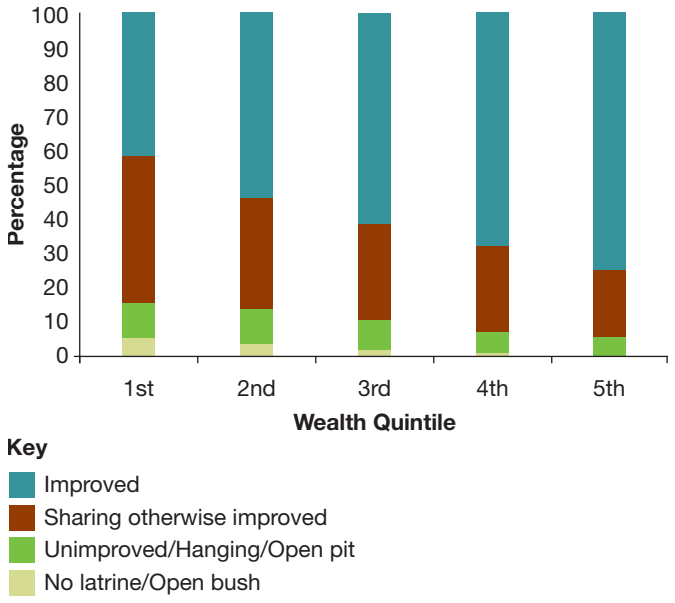
[1] Based on the WHO/UNICEF Joint Monitoring Programme for Water and Sanitation.
[2] All odds rations listed are significant at p<.05

poorest wealth quintile. Those who continue to practice open defecation are socially criticized. Marriage arrangements, village respectability, and village purity for religious events are widely assumed to require use of "hygienic/health-enhancing" latrines. One plausible contributor to this shift in social norms is that the behavior change communication campaign directed toward households was fairly pervasive: campaign messages were communicated through various channels and settings, including messaging by Union Parishad members or officers at meetings, rallies, over loudspeaker announcements, and household visits by Union Parishad members or NGO workers.

While the average prevalence of open defecation across the study unions is low, it is important to understand the factors that contribute to the continued behavior of open defecation and use of unimproved facilities among this segment of the population.

Factors correlated with unsustained use of improved latrines:

FIGURE 3: PERCENTAGE OF RURAL HOUSEHOLD LATRINE COVERAGE BY WEALTH (N = 3,000)[3]



[3] Based on the WHO/UNICEF Joint Monitoring Programme definitions of sanitation.

Poverty is a factor that affects sustained use of latrines. 89.5 percent of households own or share an improved latrine; however, those that continued to defecate in the open or did not use an improved or shared latrine (10.5 percent) were largely represented by the two lowest wealth quintiles (Figure 3).

Severe natural disasters have an effect on sustained use of latrines. More than 20 percent of households using unimproved latrines were located in Union Parishads impacted by severe natural disasters (cyclones, floods, or tornados) within the past three years.

Lack of local leadership may affect sustained use of latrines. In eight Union Parishads there was a higher concentration of households using unimproved facilities (more than 20 percent). A common characteristic was that none had a Union Parishad chairman who actively worked on sanitation at the time of the study. Additionally, five of the eight Union Parishads did not have a sanitation follow-up program.

Insights for Future Programming

Considerations for governments and sector professionals to sustain sanitation programming and behavior change at scale:

Government has to have the political will to prioritize sanitation at the central and lower tiers of government. Bangladesh is an excellent example of how sanitation was included in the country's poverty reduction strategy, which provided the road map for all levels of government and civil society to take and sustain action on sanitation. Advocacy from the central government down to the local governments, led by the Minister of Local Government, Rural Development and Cooperatives, was a factor in unifying the country around sanitation.

Sustained sanitation programs are needed to support behavior change. Local government authorities require some level of sustained financing for continued sanitation promotion for an undetermined period of time. This study showed that follow-up and reinforcing messages appear to help with sustained use of improved latrines. Bangladesh offers a good example of institutionalizing sanitation by (1) establishing a sanitation secretariat in the government, (2) celebrating

sanitation month each year, helping to keep it on the government's agenda, and (3) using Annual Development Program Allocations issued by the central government for sanitation.

Financing mechanisms are needed for households that want to replace or upgrade basic latrines, or move out of shared arrangements. This could be accomplished by connecting microfinance institutions with service providers so that providers have the necessary cash flow to offer services/products on credit or in installments. Moreover, some form of financing or subsidy option is needed for the poorest that still have not achieved basic sanitation. Subsidies that are targeted to the poor through community-based or self-selection methods may be more effective in reaching the poor than means-tested systems.[4]

Sanitation marketing can help sector professionals better understand consumer's constraints and aspirations. The barriers and benefits to using a latrine are likely to be different for those who continue to defecate in the open and those who share a latrine. Market research can help target an affordable level of service that gives consumers the most satisfaction, increasing the likelihood of sustained use of latrines.

[4] *Financing On-Site Sanitation for the Poor—A Six Country Comparative Review and Analysis*, available at www.wsp.org/wsp/sites/wsp.org/files/publications/financing_analysis.pdf

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Terms and Acronyms

Aapobitro	Pollution (opposite of purity)
Aaraa	A local term for open spaces people use for defecation
ADP	Annual Development Program; in this report, ADP refers only to the annual block allocation to Union Parishad (council) by MLGRDC
Almira	A polished wooden cabinet for keeping clothes or dishes, often with a glass front
Bairar manush	"Outside" people; people who are not seen as permanent, native villagers
Baire paikhaana-na	No outside defecation
Bari	Residential compound with one or more households
Biplob	Social revolution
Bodna	Small pitcher used to hold water for post-defecation cleansing
Bon	A type of tall, soft grass that can be used for making latrine walls
BRAC	Bangladesh Rural Advancement Committee (a large Bangladeshi NGO working throughout Bangladesh, whose activities now include work in other countries)
Char/Chari	Sand bar island that is vulnerable to extreme erosion
Chak, Chaaka	Rings
Chamars	Cobblers
Chowkidar	Village police
Chula	Bowl
CLTS	Community-Led Total Sanitation
DC	District Commissioner
Dhila-kulub/kuluf	Clay balls used to clean the anus and genitals after defecation
DPHE	Department of Public Health Engineering
Duli	A woven bamboo liner for latrines, used in some CLTS areas
Dushon	'Pollution'
ESHWRA	Water and sanitation program run by UNICEF, one of the GoB donor programs
GoB	Government of Bangladesh
Golpata	A type of leaf
Gorto	Pit
Gram sharker	A village-level government institution, now defunct
Gaach paikhaana	Tree defecation (defecating on the roots of trees or low branches above a water body)
Ghriina	Hateful
Hang (or Hanging) Latrine	A latrine that has a superstructure but no pit; the latrine either empties directly onto the ground or into a body of water
Haor	Geological depression filled with water three to six months per year

HH	Household
HWT	High water table
IMP/S	Improved latrine category with sharing. It is based on the JMP definition, but includes shared as well as unshared facilities
Jaati	Caste
JMP	World Health Organization and UNICEF Joint Monitoring Programme
Julonto	An enclosed space for defecating, without a pit, that is near the home; this would include a hanging latrine and other such arrangements
Kaamlaa	Day laborer
Kacca	Crudely made (opposite of pucca)
Katha	Quilt
Khaash	Government-owned (as with land)
Khola paikhana	Open defecation
Lakh/Lac	The number 100,000
Larki	Firewood
LGED	Local Government Engineering Department
LWT	Low water table
Madrasa	Religious school
Mela	Gathering or village fair; often used in community mobilization in South Asia
Methor	Pit cleaner
MLGRDC	Ministry of Local Government, Rural Development, and Cooperatives
Mohalla	Neighborhood
Motka	Type of latrine promoted in some old CLTS areas; it has a metal strip in the pan
Naapaak	'Pollution' (opposite of 'purity')
NGO	Non-governmental organization
Norok	Hell
Noshto kora	'Pollution' (similar to Dushon)
OD	Open defecation
ODF	Open defecation-free
Paak	'Purity'
Paara or para	Section of a village
Paathaar	A local term for open spaces people use for defecation
Paribesh Unnayan	Environmental Development [Committee]
Pobitro	'Purity' (similar to Paak)
Poribaar	Household
Porishkaar	Cleanliness
Porichhonota	Maintaining cleanliness

Pourashava	Municipality
Pucca	Permanent or well-made (opposite of kacca)
Purdah	A behavioral code, widespread in South Asia, that dictates with whom a woman may interact, who may see her, where she may go, how she should dress, speak, and behave, and restricts contact of any sort between certain social categories of males and females
PRSP	Poverty Reduction Strategy Paper
Raj mistri	Mason
RC	Reconnaissance team
RDRS	Large NGO active in northern Bangladesh
RRA	Rapid rural appraisal
RT	Reconnaissance team
Salish/Shalish	Dispute resolution conducted by local leaders
Samiti	Committee
SCG	Study Consultative Group (established by the WSP and GoB)
Shorom	Modesty
Shotho-bhaag kholaa paikhaana mukto	Literally, "Feces-free"
STUP	Special Targeting of the Ultra-Poor, a development program
Tk	Taka, the currency of Bangladesh (US$1 = Tk 68.5)
TNO	Former name for UNO (see below)
TW	Tubewell
UNICEF	United Nations Children's Fund
Union	Lowest tier of government administration
UNO	Upazila Narbahi Officer (Chief Administrative Officer of the subdistrict)
UP	Union Parishad (union council made up of an elected union chairman plus nine male and three female ward representatives)
Upazila	Subdistrict
VERC	Village Education Resource Center
VGF	Vulnerable Group Fund
VSC	Village Sanitation Centers
Ward	Politico-administrative unit within a union; there are nine wards within each union
WES	Water and Environmental Sanitation
WHO	World Health Organization
Zila	District (an administrative/governmental unit)

I. Introduction

> *"During the liberation war in 1971, people from all corners came together for one platform and worked for one goal to liberate the country. It was just like that during the ODF campaign: all people came together to eradicate people's practice of open defecation. We succeeded to make a latrine in each and every household. We did it in a very united and coordinated way, like the war of liberation period."*
>
> —Female Union Parishad Member

It is widely agreed that the Millennium Development Goal (MDG) targeting a 50 percent decrease in the proportion of people who do not have access to safe drinking water and sanitation (MDG 7, Target 10) has achieved less progress than all other MDGs. At present, one-third of humans lack access to facilities that safely confine human feces, which puts them and their neighbors at risk of diarrheal disease.

There is increased interest from developing country governments and the international community in seeking ways to rapidly scale up access to improved sanitation. Because Bangladesh has had sanitation programs longer than most countries, including periods of rapid scale up, it can provide valuable lessons to donors and program implementers throughout the world. The World Bank's Water and Sanitation Program (WSP) in conjunction with the Government of Bangladesh and nongovernmental organizations collaborated to investigate the sustainability of sanitation behaviors and programs in Bangladesh. WSP contracted The Manoff Group, Inc. and its partners, Planning Alternatives for Change, LLC, and Pathways Consulting Services, Ltd., to carry out this research.

BOX 1: BANGLADESH: COUNTRY STATISTICS

- A population of 144 million inhabits an area of 147,570 square kilometers.
- More than 80 percent of the population lives on less than US $2 per day, and at least 30 million inhabitants are classified as *extreme poor* or *ultra-poor*. (AusAid 2010)

1.1 The Bangladesh Context

Sanitation needs are significant in Bangladesh, which is the most densely populated country in the world and one of the poorest. Adding to the challenge, about one-third of Bangladesh experiences annual floods and other parts of the country suffer seasonal water shortages. All of these factors have implications for the ability of rural Bangladeshis to construct and maintain latrines.[5]

Improving sanitation is a high priority national policy goal in Bangladesh. In 2003, the Government of Bangladesh (GoB) set a target of *Sanitation for All* by 2010 at the first South Asian Conference on Sanitation (SACOSAN). At that time, only 28.8 percent of rural households in the country were using latrines, and countrywide usage was 33.2 percent. Efforts toward Sanitation for All began with an historic campaign from 2003 to 2006 to establish all areas of Bangladesh as *open-defecation-free* (ODF) by promoting and rewarding 100 percent latrine coverage. Intent on building on these and other achievements since 2003, the current government has extended the Sanitation for All action period up to 2013.[6]

[5] CIA 2010; Local Government Division, Ministry of Local Government, Rural Development and Coperatives, Government of Bangladesh 2008

[6] Government of Bangladesh, National Sanitation Secretariat 2010

1.2 The History of Sanitation Promotion in Bangladesh

For many unions (the lowest tier of government organization), the 2003–2006 ODF campaign was built on a foundation established by earlier sanitation programs. For more than four decades, the GoB (primarily through the Department of Public Health and Engineering [DPHE]) had been striving to promote safe water access and stop indiscriminate disposal of human feces. Deadly cholera outbreaks, which alarmed health officials, politicians, and the general population, provided the initial impetus for this drive. Efforts focused on water; sanitation changes came later.

In 1972, GoB-UNICEF support was mobilized for DPHE to provide a "demonstration of technology" for safe excreta disposal. Village Sanitation Centers (VSC) were established, promoting pit latrines with water-sealed slabs; the pits were lined with five concrete rings. Gradually this program was expanded to 460 *upazilas* (subdistricts), but it did not trigger high levels of hygienic latrine use in the population. Unlike the recent campaign, these early efforts focused mainly on urban areas, especially subdistrict headquarters towns, rather than on rural villages. It was primarily the economically well-off households that took up latrine use; sanitation promotion messages were not directed to rest of the population or poor people apart from school children. In the late 1970s or early 1980s, UNICEF started working on school sanitation with the government schools' hygiene curriculum.

In 1980, the United Nations declared the beginning of the International Water Supply and Sanitation Decade. Between 1980 and 2000 the GoB, especially DPHE, some large NGOs, and UNICEF, launched concerted efforts to introduce latrines to rural communities, some of which included the unions covered by this study. Key informants mentioned these early programs as important background context for their recent sanitation campaigns.

The most dramatic and large-scale effort of this early period was the national Social Mobilization for Sanitation, a campaign extending from the mid-1980s into the mid-1990s. DPHE was a central, driving force. Banaripara Upazila in Barisal District was considered to be the most successful case in the country. Government workers, elected local government officials, schoolchildren and teachers, and numerous volunteers mobilized to destroy "unhygienic" latrines and bring their region up to a new standard of safe defecation practice. In Banaripara, the NGO Forum for Drinking Water and Sanitation was prominently involved in the social mobilization campaign.

Meanwhile, other national and international NGOs started developing their own sanitation and hygiene promotion initiatives, both with and without latrine distribution. Implemented in the far southeastern districts between 1991 and 2001, CARE-SAFE/SAFER's Software Only program has received the most international recognition. In northern Bangladesh, RDRS (Rangpur Dinajpur Rural Services) made a strong push to upgrade sanitation practice and supported some entrepreneurs producing latrine parts during the 1980s and 1990s, when demand was weak. National NGOs such as Grameen Bank, Proshika, and BRAC strongly encouraged and funded group members' installation of "hygienic" (ring-slab) household latrines, many of which were produced in DPHE's Village Sanitation Centres.

At that early stage, two different approaches to promoting latrine use emerged in Bangladesh. These two approaches were evident in different unions during the recent campaign. One approach made more use of force, threat, and other types of coercion, while the other emphasized persuasion, intensive public education or training, educational games for children, and self-monitoring. Eventually this latter approach was carried forward by numerous organizations implementing water and sanitation programs, including most CLTS proponents.

1.3 Study Goals and Objectives

The goal of this study is to provide the GoB and its in-country partners with evidence on what makes sanitation behaviors, facilities, related benefits, and programs sustainable in the Bangladesh context. At the same time, this evidence will also help the international sanitation and hygiene sector better understand the sustainability component of scaling up sanitation programs.

The unit of study is the union, which is the lowest level of government and administration in rural Bangladesh. There are more than 4,400 unions in Bangladesh, ranging in population from 15,000 to 50,000. Each union has an elected

chairman and a council consisting of 12 ward representatives; nine representing one ward each and three women representing three wards each. The local name for the union council is Union Parishad, which is referred to here as the UP.

This study concerns the 481 unions that were declared ODF about four and a half years before the study's beginning. Previously, there was no knowledge about which unions had sustained their ODF status; and if not, why those behaviors, facilities, or programs had not been maintained.

The study focused on five specific objectives:

1. Determine the current status of latrine facilities built pre- and post-ODF declaration and sanitation practices.
2. Understand the perceived benefits to households and communities from community-wide ODF approaches since declaring ODF status.
3. Understand whether programmatic inputs from local and national governments and civil society sanitation programs had been sustained to support communities in maintaining their ODF status and helping the poor obtain access to latrines.
4. Understand how the growth or attrition of sanitation products and services (e.g., masons, pit-cleaners, or financing) has affected the sustainability of sanitation behaviors and facilities and ODF status.
5. Most importantly, understand why households and communities had or had not sustained improved sanitation behaviors since ODF declaration.

1.4 Implementation Models Used in Union-level ODF Campaigns

Four types of implementation models (details of each model are presented in Annex 1) were used to achieve union-wide ODF goals:

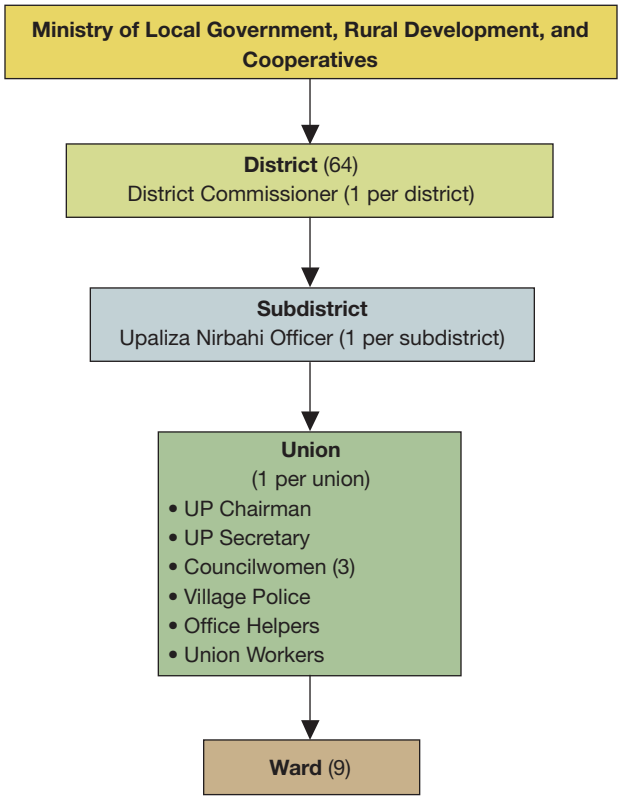
- **GoB Only**: campaign implementation by elected union leaders and UP staff, such as village police, with no support from any other sanitation program;
- **GoB Donor**: campaign implementation conducted with support from a program run by the Government of Bangladesh, Department of Public Health Engineering (DPHE) in partnership with a donor organization
- **CLTS NGO**: campaign implementation conducted by local government with support from an NGO dedicated to use of CLTS methods.
- **Non-CLTS NGO**: campaign implementation conducted by local government with support from NGO programs not dedicated to CLTS

In all cases, the UP was the principal manager of the local ODF campaign and close cooperation between governmental and non-governmental organizations occurred at all levels. The concerned programs and the campaign had ended by the time this study began. In 27 study unions, however, a formal sanitation program followed the ODF campaign.

1.5 Background Information on Bangladesh Governmental Administration

As shown in Figure 1, Bangladesh governmental administration operates through four principal administrative levels: nation, district, subdistrict, and union. (There is an

FIGURE 1: ORGANIGRAM OF GOVERNMENTAL ADMINISTRATION IN BANGLADESH



additional level, the division, or group of multiple districts, but it is not an administrative entity.)

At the national level the Ministry of Local Government, Rural Development, and Cooperatives (MLGRDC) is the entity ultimately responsible for union-level policies and funding arrangements. The next administrative level below the national government is the district (also called *zila*). There are 64 districts in Bangladesh (which are clearly defined in the map on the first page of this chapter). Each is under the authority of a District Commissioner who coordinates all governmental activities in the district. Every district is divided into subdistricts (*upazilas*),[7] with an Upazila Nirbahi Officer (UNO) providing administrative coordination functions at that level. The subdistrict includes multiple unions whose activities are monitored by the UNO. Each union is divided into nine wards, each of which elects a male member to the union council (or Union Parishad/UP). The UP chairman is elected independently, and alongside the nine ward representatives are three elected female council members, each of whom represents three wards. Each union has a small staff, which includes an appointed UP Secretary, who is an officer of the civil service, some village police (*chowkidars*), some office helpers, and other staff in certain unions.

1.6 Guiding Concepts

Many studies have been conducted on defecation behavior change in South Asia and elsewhere. A literature review conducted during the first phase of this study revealed themes that would serve as the research team's guiding concepts. Key findings from the literature include:

- Building awareness of public health principles is a basic program need, but careful and sensitive program implementation is equally important.
- Access to equipment has not been emphasized.
- A major challenge exists in shifting people's mind-set from fecal-oral disease transmission as an individual or household behavioral issue to viewing this issue as a community concern.
- There are regional, ethnic, and socioeconomic variations in the Bangladesh rural population's response to sanitation promotion efforts.
- Effective approaches are generally understood to include appropriate institution building and the development of human resources at the local level.
- The participation of local leaders is an essential part of many successful programs, especially if there is satisfactory coordination with volunteers and civil society organizations.

Sanitation research indicates that sustained behavior change results from giving high priority and adequate resources to hygiene promotion and public education. Factors determining hygiene behavior change include program intensity, support from influential individuals, promotion of self-help attitudes, and attendance at hygiene training. There are always obstacles to full acceptance of sanitation improvement, but the existing studies are positive in supporting the claim that, "Intensive hygiene promotion interventions, including small groups and personal contact, probably will have a tangible and sustained impact."[8] People's participation is assumed to be important: "It is now widely recognized that the best guardians of water resources and the environment are people working hand in hand with institutions."[9] These principles grounded the development of the instruments used in this study.

1.7 Organization of the Report

The report is divided into eight sections. Following this introductory section, Section II gives an overview of study methodology. Section III presents detailed findings on latrine facilities and defecation arrangements, and on ownership, maintenance, and defecation-related practices of the elderly, the disabled, and children. Section IV pre-sents findings on people's perceptions about recent sanitation changes along with some relevant cultural background. Section V focuses on institutional factors that do or do not support sanitation improvements among the rural population, including the poor. Section VI describes the situation of the "supply chain" of products and services necessary to

[7] The subdistrict was formerly called *thaana*. There is an elected *upazila* chair and a vice-chair, and a council. The *upazila* council system, however, was not yet functioning at the time of this study.

[8] Cairncross and Shordt 2004

[9] Hartvelt 1997

support latrine use in rural areas. Section VII offers an overview of multiple factors that do or do not support sustainability of latrine use and associated practices. And Section VIII suggests conclusions and insights for future sanitation programming at scale. At the end of each section there is a brief comment on how findings relate to each study objective, as listed in Section 1.3.

To protect the confidentiality of sources, study union names are not used in this report and names of respondents have been changed. In place of each union name a unique identifier is used. This identifier includes a serial number and a shorthand reference to the approach used during the sanitation campaign:

- "G" or "GO" for a GoB-only approach
- "G-Do" or "G-Don" for a GoB donor program
- "NG" for a non-CLTS NGO approach
- "CL" for a CLTS approach
- "CL/D" for a CLTS under the Dishari program

Study union identification numbers with district locations are listed in Annex 2.

Some English words, especially 'purity' and 'pollution,' are often written with single quotes. This is an anthropological convention. It serves to remind the reader that the words' meaning in the Bengali language cannot be precisely translated into English—that the English words can only partially express the important concepts associated with the equivalent Bengali words.

II. Methodology

This section reviews the quantitative and qualitative study methods used in a total of 53 unions; 50 of which were covered by a questionnaire survey conducted in 3,000 randomly sampled households. Basic definitions used in the study are explained.

2.1 Definitions and Terminology

The study team used a combination of quantitative and qualitative research methods to address the principal research questions. After consultation with WSP and the Study Consultative Group[10] in Dhaka, the team selected 50 of the 481 unions that had been declared "100 percent sanitized," or ODF, by June 2005. These sample unions are described in Annex 2.

For purposes of this study, the following terms are used:

- *Sanitation behaviors*. This includes defecation practices (open or fixed place); latrine use maintenance (cleaning slab/pit, emptying/repairing), and upgrading (adding slab, superstructure, lining pit, investing in technologies, e.g., twin pit latrines); and providing assistance to dependents (disposal of children's or elders' or disabled persons' feces). This study's definition of "sanitation" is restricted to the management of human excreta.
- *Facilities.* This includes latrines of all types constructed prior and subsequent to communities' declared to be ODF. Durability of sanitation facilities is related to availability of quality materials, appropriate designs, construction, and skilled labor. Facilities also include community and public latrines, located at roadsides, schools, markets, and mosques, which the team observed but did not study in detail.
- *Hygienic latrine*. In the National Sanitation Strategy (2005: 8), the Government of Bangladesh (GoB) defines a "hygienic latrine" as being, "a sanitation facility the use of which effectively breaks the cycle of disease transmission." The strategy further states, "There is no universal design for a hygienic latrine that can be effectively used under all socio-economic and hydro-geological conditions. It is therefore important that a wide range of sanitary or hygienic latrine technologies is available to suit different conditions." A latrine is shared by more than two households is not considered "hygienic" according to this definition. Minimal requirements for a hygienic latrine facility listed in this strategy are:
  - confinement of feces away from the environment;
  - sealing the passage between the squat hole and the pit to effectively block the pathways for flies and other insect vectors, thereby breaking the cycle of disease transmission; and
  - venting of foul gases generated in the pit through a properly positioned vent pipe to keep the latrine odor-free and encourage continual use of the hygienic latrine. (The Ministry, however, excluded the venting requirement by a February 2010 amendment.)
- *Improved latrine.* This term is defined by the Joint Monitoring Programme of WHO and UNICEF and includes the following types of facilities:
  - flush toilet, piped sewer system, septic tank;
  - flush/pour flush pit latrine;
  - ventilated improved pit latrines;
  - pits with slabs; and
  - composting.
- JMP does not consider the facilities above to be improved if they are shared by more than one house.
- *Unimproved latrines.* According to the JMP, unimproved latrines have one or more of the following features:
  - flush to an unknown place;
  - pits with no slab;
  - no facilities, bush, or field;

[10] This group was comprised of representatives of government, academia, national and international NGOs, and donor organizations

  - "hang" latrines that extend out over open land or water; and
  - buckets
- *Shared latrine.* This is a latrine that safely confines feces from human contact and the environment, and would otherwise be considered 'improved' except that more than one household regularly uses it. This includes households that have established joint ownership of a latrine with other, usually related families, and also less formal arrangements with neighbors.
- *Open defecation (OD).* Defecation in bushes or fields or other outdoor locations.
- *Coverage.* In this study, coverage refers to the usage of latrines.
- *Open Defecation Free (ODF).* This term is used in this report rather than "100 percent sanitized union," the language associated with the sanitation campaign. When UPs were declared to be "100 percent sanitized," the criterion was that all households had latrine facilities confining feces. Other aspects of total sanitation outlined in the 2005 *National Sanitation Strategy*—such as proper maintenance for continual use, hygienic practice, or number of households using a latrine—were not considered in making the declarations. Confinement of feces from the environment i.e. use of a latrine that separates feces from human contact is the first step on the way to becoming ODF. ODF thus means that all households in a location avoid both open defecation and using an unimproved latrine.
- *Sustained ODF.* This term is defined both statistically (high percentages of households using sturdy and well-maintained latrines) and socially (broad awareness and commitment to maintaining ODF throughout multiple locations and social groups). Verified problem-solving activities and formal or informal enforcement of local rules against open defecation are also considered as positive evidence of sustained practice. New house construction and family division processes should include installation of new latrines. Ongoing systems providing replacement supplies, latrine repairs, and pit-emptying services also are essential to sustained ODF situations.
- *Related benefits.* These include perceived benefits as defined by individuals and local groups after becoming ODF, including cleaner environment, increased pride, dignity, comfort, social networks, health, privacy, and security (particularly of women).

2.2 Study Union and Village Selection Procedures

The 53 study unions (50 covered by a household survey) were selected primarily using a stratified random sampling technique. A sample size of 53 unions was used because it represents about 10 percent of the unions declared ODF by June 2005. Information was collected about each of the 481 unions declared ODF by June 2005, including program intervention approach, time of ODF declaration, geographical characteristics, and nature of follow-up sanitation program implemented after ODF declaration, if any. The team used this information to sort the 481 unions. In areas where there were very few examples of a particular subgroup (approach, time of declaring ODF, or follow-up program coverage), the team selected all of the unions representing the less-represented criteria to ensure representation of the criteria in the overall sample. For example, only 10 CLTS unions had been declared ODF as of June 2005, and they are spread over different geographical areas. Therefore, the team included all of them in the group covered by this study. In places where a specific approach was more concentrated, the team selected the unions randomly from unions in the area. Using these procedures, the team tried to avoid selection bias. However, at least three unions were purposively included in the sample due to historic or other reasons.

Follow-up NGO sanitation programs covered 27 of the selected unions. This group includes some in which the organization conducting campaign-related activities continued its work for a period of one to three years after the sanitation campaign ended. In others, the follow-up or currently operating program started later on. In only three unions was the NGO involved in the sanitation campaign still present at the time of this study. In CLTS/Dishari unions, the full NGO program had ended at the time of the study, but a project-funded UP officer continued to work on sanitation issues.

TABLE 1: STUDY UNIONS BY PROGRAM APPROACH AND FOLLOW-UP PROGRAMMING

	Demography		Research Coverage				Follow-up Programming		
Approach	Population	Household	Total Unions	Household Survey Only	Household Survey and Qualitative Study	Rapid Rural Appraisal or Reconnais-sance Only	Program Follow-up	No Program Follow-up	Sanitation Program Currently Operating
GoB only	619,333	113,381	24	19	4	1*	12	12	12
GoB donor	274,932	47,427	9	5	3	1**	5	4	1
CLTS NGO	300,421	54,163	10	5	5	0	4	6	4
Non-CLTS NGO	315,522	54,957	10	6	3	1*	6	4	5
Total	**1,510,208**	**269,928**	**53**	**35**	**15**	**3**	**27**	**26**	**22**

*Union with no program follow-up
**Union with program follow-up

Once in a union, the field research team randomly selected three villages (or sections of villages) with a cluster of at least 100 households. One selected village was always close to the UP headquarters, one at a middle distance, and the third was far away or remote. Interviewers collected all quantitative and qualitative data (not including interviews with decision makers, local political leaders, and sanitation leaders and organizations) from these villages. Within each selected village or cluster, 100 households were listed using a standard sampling format, and 20 households were selected from this list by means of a systematic random sampling method. Using this method, 60 households in all were covered by the questionnaire survey in each union and 3,000 households across 50 study unions.

The team conducted household-level survey interviews and developed "union profiles" (with special reference to sanitation) in all study unions.[11] Geographical and program characteristics of selected unions are described in detail in Annex 2.

[11] Union profiles include salient political, geographic, climatological, and demographic information, as well as details on sanitation—including the history of campaigns and government and NGO activities in the union. The profiles include current government and NGO activities and the level of sanitation involvement of the UP and its leaders, and also subjectively rated information (e.g., level of seasonal migration or the intensity of natural disaster) that might contribute to the sanitation status of individuals (e.g., in migrant populations) and households.

Eighteen unions were selected for in-depth research coverage. They were picked purposely to represent diverse geographical regions and intervention approaches. In two of these unions, the study involved only rapid rural appraisal (RRA) methods and no household survey. Two other unions were covered by RRA methods plus the household survey. In one union a reconnaissance team visited for three days, and there was no household survey. Some characteristics of study unions are described in Table 1.

2.3 Household Survey: Data Collection and Analysis

The semi-structured questionnaire for the household survey elicited five types of data:

- current latrine set-up and household members' defecation habits,
- history of household latrine use and responses to floods or other environmental crises,
- knowledge of and attitudes toward latrine use,
- socioeconomic details on the household, and
- exposure to campaigns and ODF knowledge.

2.3.1 Quality Control

The team followed quality control procedures in both quantitative and qualitative data collection and analysis. The team controlled questionnaire data quality through a combination of measures:

- The deputy team leader engaged supervisors and enumerators from an existing panel known to him as competent and diligent. All were trained on the specifics and requirements of this study.
- A supervisor and at least two quality-control officers followed up on interviewers at every step of fieldwork. The method included observing the interview process, performing field-level editing and consistency checks, and revisiting some randomly identified households.
- Survey interviewers met daily with those conducting qualitative research to discuss findings, problems, and other issues whenever the two groups were working in the same unions.
- The qualitative research supervisors observed quality control by meeting daily with their teams to review findings and discuss any problems or issues needing attention, as is standard practice in team ethnographic research.

2.3.2 Statistical Analysis

Detailed tables were generated for the entire set of 3,000 sampled households, broken down into major subgroups based on:

- approaches followed in the ODF declaration process,
- geographical characteristics of the area,
- post-ODF follow-up with major sanitation program(s), and
- socioeconomic groupings of the households through a wealth ranking index.

In addition to tabulating the household survey data, the team ran multivariate logistical regression analyses on the data using STATA statistical software. The team had defined several indicators from the variables that would likely contribute to the use of improved or shared latrines, and the cleanliness of latrines. Because there is a high prevalence of sharing sanitation facilities in Bangladesh that safely confine feces from human contact and the environment, the researchers felt it was important to analyze the quantitative data by combining into one group the segment of households that share together with single family households that don't share. The reason for this was to try and identify differences between households that use a facility that safely confines feces from those that do not.

The outcome of the analysis is presented in Section III and discussed in subsequent sections. Regression results indicate how much apparent differences in the use of improved or shared latrines and their maintenance among different subgroups are due to different characteristics of the population subgroups, once the impact of other factors are held constant.

The survey team visiting each union filled out a "Union Profile." Team members also made subjective judgments about the level of engagement in sanitation of the UP chairman[12] as well as observing the UP office latrine. Information from the union profiles is integrated into the report.

2.4 Qualitative Research in Selected Unions

2.4.1 Selection of Unions for In-depth Study

In-depth study unions were selected according to overall characteristics, suggesting that they could offer learning opportunities (e.g., presence of large migrant populations, past presence of an active NGO sanitation program or special environmental conditions). A qualitative study team stayed for four to five days in 13 of the unions selected for in-depth study.

A reconnaissance team (RT) visited six unions in order to identify interesting cases and collect detailed background information. They spent two to three days trying to get a sense of the present level of sanitation awareness, activity levels of leaders, and other pertinent issues. RT members conducted key informant and group interviews in the union and at the upazila (subdistrict) level about the history of sanitation promotion activities and prepared short reports to helped orient the full in-depth study teams who later visited most of the same places.

2.4.2 Qualitative Methods of Study

The team employed a number of different qualitative methods to explore the issues of this study. Interviews and structured observations were done using guides or checklist questions, respectively, to ensure comparability among unions. Interviewers were not limited to the listed questions; rather they were encouraged to explore any interesting new topics that arose. A basic minimum set of questions,

[12] At the time of the study, all UP chairmen in Bangladesh were male.

however, was covered in each interview type. The principal interview types are listed in Annex 3.

Additional activities included:

- survey observations of feces during transect walks, house visits, and in all other local situations;
- transect walks, including short visits to households;
- household visits and observations using a semi-structured interview protocol; and
- stakeholder meetings in Dhaka and at local levels with NGO and governmental representatives and others (e.g., multilateral organizations).

The in-depth research teams consisted of three to four persons each (one field team leader/research associate, two research assistants, and a sanitation specialist). They crosschecked and verified information obtained from various sources about local social dynamics, environment, technologies, attitudes toward OD, and personal behaviors. They also looked into the institutional supports of or obstacles to general sanitation improvement.

Some qualitative methods, especially focus group discussions, enhanced the team's understanding of collective processes and social dynamics (at the neighborhood, village, union, or broader levels) and the extent to which these processes support elimination of open defecation. Key informant interviews shed light on UP points of view and, together with child interviews, were also especially useful ways to gain insight into individual and household processes related to defecation behavior and sanitation improvement decision-making.

2.4.3 Qualitative Analysis

The outcome of these in-depth inquiries was a set of notes, including social analysis, of the ways in which each union's special circumstances—history, leadership, sanitation intervention strategies, physical constraints, and other factors—had or had not supported a decline in open defecation and built opportunities, skills, and motivation to adopt hygienic defecation practices. The study team explored and analyzed multiple points of view (different age and gender groups, for example, or the disabled) and looked at the concerns of the poor. The qualitative research teams explored, in multiple types of interviews, ways in which social networks have influenced people's behavior and/or collective change processes.

Case studies are integrated into the text of the report. They describe specific situations and give detailed quotes from interviews. Their value to the analysis is in showing the conditions under which specific changes occurred or no changes occurred. They also describe the types of obstacles that people or groups encounter. They provide an opportunity for the reader to hear people explain themselves in their own words. Case studies reveal complexities of specific situations and offer insights into contextual factors influencing behavior change and decision-making processes that statistical analysis of narrowly defined variables is unable to do. The selected case studies often represent typical comments and observations from multiple study unions.

2.5 Limitations of the Study

One limitation of this study is the absence of baseline data and ongoing monitoring information. The government required baseline studies in all unions in 2003. The team searched for these studies, but they were not available. Without documentation of actual latrine coverage distribution, the team had to rely on oral reports to assess the degree to which sanitation had improved or declined in the sample unions. The statistical data collected as part of this study gave a fairly accurate picture of the present status of sanitation in sample unions.

Time constraints required selection of certain *paras* (sections of a village) or villages rather than others for in-depth interviews, and it is possible that the authors missed some potentially valuable observation opportunities. However, within the available time, the approach taken enabled strong case comparisons across different types of environments and programmatic influences, and comparison between survey and in-depth findings in all places.

The team did not control for population size or number of households in the three villages that the quantitative survey team sampled in each union. The same number of households (20) was sampled in each village, regardless of the number of people or households in the village. This means

that on one level, the household sample of each union may not be representative of the union as a whole, as a village of 4,000 inhabitants and a village of 2,500 inhabitants would each have a randomly drawn sample of 20 households. However, a 3,000 household randomly drawn sample from 50 unions representing different sanitation approaches, social groups, and geography is likely to be representative of the whole universe of 473 unions declared ODF as a result of the sanitation campaign.

Four and a half years or more after the sanitation campaign, it was difficult to pick up a great many clear differences between different sanitation approaches because of a variety of factors, such as the mobility of the population, and the sharing of information among organizations implementing the various sanitation approaches. The last category included, for example, the members of the Study Consultative Group, many of whom were members of organizations implementing one of the sanitation approaches. These stakeholders had been talking to each other well before the inception of this study. Therefore, it is possible that organizations could have been implementing features of each others' programs. However, we have only anecdotal data to suggest that this had occurred.

III. Status of Latrine Facilities and Defecation Arrangements: Latrine Characteristics, Durability, and Changes

The section presents information relating to Study Objective No. 1: *To determine the current status of latrine facilities built pre- and post-ODF declaration, and sanitation practices.* Section 3.1 emphasizes findings on latrine types and their physical characteristics. Section 3.2 discusses ownership, sharing, and maintenance of facilities.

Key Findings

Four and half years after UPs in this study were declared ODF:

- **89.5 percent of sample households own or share a latrine that safely confines feces.** Of the remaining 10.5 percent of households, 2.5 percent do not have any latrine; 5.5 percent have a hanging latrine or facility that drains directly into the environment; and 2.5 percent use an open pit without a slab.
- **70 percent of sample households have owned their current latrine for at least three years**, indicating that the majority of latrines built are fairly durable.
- **All four implementation approaches resulted in sustained high latrine use and low rates of open defecation.** The use of improved or shared latrines and prevalence of open defecation across the four approaches varied slightly. One possible explanation for the similarity in sustained outcomes across approaches could be the government's countrywide commitment to diffuse the idea that latrine use is important for household health and development. The significance and power of the government's commitment may have been the cornerstone for influencing the social norms in favor of improved sanitation behaviors and facilities regardless of the specific approach.
- **Only 44 percent of household latrines were found to be clean (i.e., to not have any feces visible on latrine floor, pan, or water-seal.** Although latrine use appears to be high, hygienic maintenance seems to be an issue.

3.1 Status of Household Latrines and Prevalence of Open Defecation

This section reviews findings on defecation patterns, categories of latrines used, and their maintenance status. It includes an analysis of findings on latrine ownership duration and upgrading, downgrading, and other changes. It also discusses community and public latrine observations. Latrine types are described according GoB and JMP criteria. 89.5 percent of all household latrines were found to adequately confine feces. But only 66 percent were found to be "clean." The study team observed 30 community and public latrines (see below for definition).

3.1.1 Latrine Categories and Defecation Arrangements: Survey Findings

The household survey distinguishes three broad categories of household defecation arrangement:

- Open place defecation in bushes or fields; no household latrine (2.6 percent).
- Use of unimproved latrines (7.9 percent), of which there are three types:
  - hanging latrine with no pit,
  - open pit latrine having no cover, and
  - any other latrine for which the ring or the lined pit has been broken or has an intentionally created passage allowing easy out-flow of feces.[13]
- Use of one of three kinds of improved or shared latrine (89.5 percent):
  - latrine with a squat slab and a lined pit but no closure or cover over the drop hole;
  - latrine with a slab or other secure cover over the drop hole, or a polyethylene flap preventing insects from flying into or coming out of the pit; and
  - latrine with an enclosed, non-leaking pit that is covered by a slab with a water seal.

The above are based on 16 different types of defecation places observed and recorded on questionnaires. Those with vent pipes, septic tanks, offset pits, double pits, and other variations have been merged into the improved or shared categories, depending on the condition of the slab and the opening to the pit.

[13] A hanging latrine is a frame or platform extending over earth or water; an "open pit latrine" does not have a squat platform or slab on the pit.

TABLE 2: HOUSEHOLD STATUS ACCORDING TO ODF DEFINITION, n = 3,000

Status	Percentage
Using a improved or shared facility that confines feces from human contact and the environment	89.5
Defecation in fields/bushes (OD), hanging latrine, open pit, or a facility that is intentionally drained into the environment	10.5

In general, any unbroken pit with a slab that adequately confines feces is counted as an improved and shared latrine is not distinguished in the above counts.

Table 2, based on direct observation of more than 3,000 households' defecation arrangements, shows that almost 90 percent of the sample was using a latrine that adequately contained feces four to five years after the end of the nationwide sanitation campaign and post-ODF declaration. This suggests that ODF was sustainable during this period for a great majority.

Table 3 shows frequencies of the three broad types of defecation places according to the approach used in the ODF campaign and geographical area. Comparing approaches, this table shows relatively high frequencies of improved or shared latrines in households covered by CLTS or GoB-only approaches, and also in char[14] or hilly geographic areas. Factors statistically associated with use of improved or shared latrines are discussed later (see Table 9).[15]

Classification of Latrines According to JMP and GoB Definitions

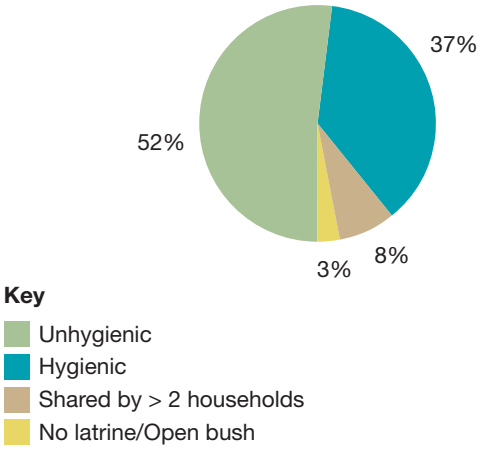
Table 4 presents the proportion of survey households with latrine types and characteristics according to criteria respectively used by JMP and the GoB to define "improved" or "hygienic" latrines. The percentages of households sharing latrines and information on use of a vent pipe are listed in the table, along with construction types that are relevant to JMP and GoB definitions. Although this is not a national survey, it is interesting to find that the total number of "improved" facilities according to the JMP definition is similar to the total found in the most recent 2009 Multiple Indicator Cluster Survey (54.3 percent—"improved" and 49.9 percent—"GoB hygienic").[16]

As the last two rows in Table 4 show, 36.6 percent of sample households share a latrine that safely confines feces. The table also indicates that a large proportion of latrines have neither intact water-seals nor flap nor any other devices covering the hole.

Figure 2 shows the breakdown according to GoB standards. The proportion of "hygienic" latrines according to GoB standards is very low because the GoB definition excludes the large percentage of latrines that do not effectively seal the feces in the pit or ring with a cover, flap or water-seal; or are shared by more than two households.

Because the JMP definition of an "improved" latrine does not exclude those with broken water seals, the percentage of sample household latrines that can be considered "improved" is larger than the "hygienic" group. Figure 3 shows

FIGURE 2: PERCENTAGE RURAL HOUSEHOLD LATRINE COVERAGE IN ODF DECLARED UNIONS—GOVERNMENT DEFINITION



[14] A char is an island produced through accretion of river silt, a sand bar.
[15] Greater variation was observed in comparing areas with and without follow-up sanitation programs, and comparing socio-economic status groups.
[16] Bangladesh Bureau of Statistics, June 2010

TABLE 3: CLASSIFICATION OF LATRINES USED BY APPROACH AND GEOGRAPHICAL AREA (PERCENTAGE, n = 3,000)

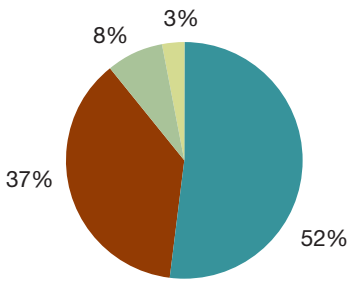
	Present Study			GoB 2010			JMP 2010			Total	
Classification	No Latrine (OD)	Unim-proved	Improved or Shared	None/Hang-ing/Open Pit Latrine	Hygienic	Unhygienic	None/Hang-ing/Open Pit Latrine	Improved	Unim-proved	Percentage	Number
By Approach											
CLTS	2.2	3.8	94.0	6.0	39.2	54.8	6.0	51.0	43.0	100	600
Non-CLTS											
NGO	4.3	6.5	89.3	10.8	34.6	54.6	10.8	50.9	38.3	100	540
GoB donor	2.7	14.8	82.5	17.5	37.7	44.8	17.5	57.5	25.0	100	480
GoB only	2.0	7.8	90.1	9.8	35.9	54.3	9.8	53.0	37.2	100	1,380
By Geographical Area											
Arid/plains	4.6	2.2	93.2	6.8	36.2	57.0	6.8	48.3	44.9	100	780
Char	1.1	4.4	94.4	5.5	36.1	58.4	5.5	55.0	39.5	100	180
Flood prone	1.5	10.8	87.6	12.3	37.9	49.8	12.3	52.1	35.6	100	840
Coastal	0.0	18.3	81.7	18.3	35.0	46.7	18.3	53.9	27.8	100	180
Hilly	0.6	1.1	98.3	1.7	43.9	54.4	1.7	73.9	24.4	100	180
Mixed	3.0	10.2	86.8	13.2	34.8	52.0	13.2	52.9	33.9	100	840
Total Percentage	2.6	7.9	89.5	10.5	36.6	52.9	10.5	52.9	36.6	100	
Total Number	77	237	2,686	314	1,099	1,587	314	1,588	1,098		3,000

TABLE 4: PERCENTAGE OF LATRINE TYPES AND SHARING PRACTICES THAT MEET NATIONAL AND JMP DEFINITIONS OF "HYGIENIC" AND "IMPROVED"

	Number	Percentage	2010 GoB Definition of Hygienic Latrine	2004 GoB Definition of Hygienic Latrine	JMP Definition of Improved Latrine
Latrine Types					
No latrine/open defecation in bush/field	77	2.6	No	No	No
Hanging latrine/open pit latrine	96	3.2	No	No	No
Latrines allowing feces to flow into environment through a broken ring or other device	141	4.7	No	No	No
Pit latrine or septic system with slab but no water seal, a broken water seal, and/or no other cover or flap over the hole	1356	45.2	No	No	Yes
Pit latrine or septic system with cover, flap, or polyethylene closing off the hole	172	5.7	Yes	No	Yes
Latrine with water seal intact (both ring-slab latrines and latrines with septic tanks)	1158	38.6	Yes	No	Yes
Latrine w/ water seal intact (ring-slab latrine or latrine with septic tanks) **with vent pipe**	538	17.9	Yes	Yes	Yes
Latrine (ring-slab or septic) with water-seal intact but **no vent pipe**	620	20.7	Yes	No	Yes
Sharing (a, b, c)					
Improved latrine shared by only **two households**	583	19.4	Yes	Yes	No
Improved latrine shared by **more than two households**	515	17.2	No	No	No

Notes:
(a) It is assumed that households occupying rented houses are using their latrines as single households (n = 18).
(b) Jointly owned latrines reported as *not* being "shared" were counted as being shared by two households (n = 43).
(c) It is assumed that if a household reports using a latrine "owned by another household," this latrine is used by only two households (n = 181).

FIGURE 3: PERCENTAGE RURAL HOUSEHOLD LATRINE COVERAGE IN ODF DECLARED UNIONS—JMP DEFINITION



the breakdown using the JMP definition, where 52 percent of households qualify as using "improved" latrines, 37 percent share latrines (only 8 percent of these were shared by more than two households), 8 percent use hanging or open structure latrines, and about 3 percent have no facility.

Households with Unimproved Latrines (8 percent of total sample)

The study identifies two types of unimproved latrines—those that are structurally "unimproved" by JMP standards, such as open pits or hanging latrines, or latrines that people have intentionally drained to the outside. These latrines may be very sturdily built pucca structures, but have broken rings or other nonfunctioning devices that allow feces to flow out onto open ground or into water bodies. Intentionally drained latrines save the cost of pit emptying.

Households with open pits (see Figure 4) or hanging latrines were unevenly distributed across study unions.

The team observed households with these types of latrines in 34 (68 percent) of the 50 household survey unions. They were found more in the coastal unions (18.3 percent), GoB-donor areas (14.8 percent), non-follow-up unions (11.7 percent), and in the lower wealth quintiles. One Patuakhali District union (G-Do-9) had the highest percentage, at 60 percent of the households. This is a southern coastal region that is vulnerable to cyclones which can wreck latrines.

The following findings relate to households using either traditional hanging latrines or open pit latrines. The users of intentionally-drained latrines were not asked these questions because such latrines were classified as unimproved only after the survey was completed.

- Most of the households, a small percentage of the overall sample, using hanging latrines or open pits had descended the "sanitation ladder." Sixty-two percent of households using hanging latrines or open pits were reported to have used an improved or shared latrine in the past. Two-thirds of this group had used a better type of latrine within the past year, and 84 percent within the past two years. The most recently used latrine was self-owned (58 percent), jointly owned (22 percent), owned by a relative/neighbor (13 percent), or owned by a landlord (6 percent). The consequences of flooding and the two recent major cyclones are evident in this, often unwilling, descent from owning or sharing an improved latrine.
- More than three-fourths (76 percent) of these respondents mentioned problems in using their unimproved latrines. "Bad smell" (68 percent), "People say bad words to us" (22 percent), and "People look down on us" (23 percent) were the most frequently mentioned problems. These reasons, especially the last two, are indicative of normative change, because OD and hanging/open pit latrine use is clearly not socially acceptable anymore. Because it is common to place the latrine near the edge of the compound, often near the border with a neighboring *bari*, foul odors are a source of conflict between neighbors. Latrine placement depends to a large extent on the wish to avoid 'polluting' feces, rather than just logistics (see Section 4.7).

FIGURE 4: OPEN PIT LATRINE IN CHAPAI-NAWABGANJ DISTRICT (CL-3)

- The majority (61 percent) of respondents using unimproved latrines said they were never counseled; and even more (68 percent) said that they were never pressured to install an improved latrine. Only 9 percent of the respondents admitted that they had been helped or that someone had offered to help them move up to an improved latrine.
- The majority (58 percent) of these households that use unimproved latrines expressed willingness to install a better latrine within the next 12 months; but 42 percent were unwilling to do so. Most (86 percent) of those who were not willing said that "they had no money" to install a better latrine. There were also other reasons, such as "No one to take on the task" (14 percent) and/or "Lack of space" (12 percent). The same respondent often provided multiple reasons. Grouping the amount of money they were willing to spend indicates that 39 percent would spend Tk.1000 (US$14.60) or less for a latrine; 23 percent between Tk.1001-3000 (to US$43.80); and 23 percent mentioned more than Tk.3,000. The remaining 16 percent did not mention any amount. Ring-slab latrines of various types with or without water seals were the choice of most wishing to install a better latrine.

Annex 4 presents information on study unions with higher percentages of open defecation and unimproved latrine usage.

Latrine Superstructure

In the monsoon season, pit latrines are vulnerable to damage. Flooding is a problem in low-lying areas. Rain is a problem in all places, as it can weaken the supports for rings and slabs,

FIGURE 5: TWO LATRINE EXAMPLES

Above, a new latrine with a roof (left) and a latrine with no roof and broken slab (right.)

causing them to shift and crack. The best protection against rain damage is a roof on the superstructure. The two photos above show images of a latrine with a functional roof and one with no roof, as well as structural damage. Table 5 presents household survey findings on latrine superstructures. As this table shows, 52 percent of the improved or shared latrines have roofs over their structures, and the better superstructures are far more common among higher income households.

Open Defecation: Household Survey Findings

Although a small proportion overall, in some unions a significant minority (over 25 percent) practiced OD. And, of this small number of open defecators, most had previously been latrine users (69 percent). A total of 77 respondents (2.6 percent) out of the 3,000 sample households admitted that household members used open places for defecation. Although a small part of the sample, it is important to discuss OD in detail because understanding the conditions and motivations that lead to OD can help programmers to address them.

Out of the 50 sample unions covered by the household survey, openly defecating households were recorded in 18 (36 percent) unions. They clustered in specific unions. In two unions, more than a quarter (28 percent) of sample households admitted to practicing OD. In two other unions, around 15 and 13 percent of the households, respectively, practiced OD.

The proportion of openly defecating households varied moderately by approach and region and highly by socio-economic status and union. A higher percentage (4.3 percent) of survey households in non-CLTS NGO unions reported OD than in unions covered by other approaches (Table 6). The openly defecating households are concentrated in the lower wealth ranking subgroups, but seven households were from the two highest groups. Although percentages are small, differences among approaches are statistically significant (Chi-square tests), so that it is unlikely that the small differences are due to chance.

Of these households that currently have no facility, 81 percent reportedly had used an improved or shared latrine in the past two years. Most of these households had owned or jointly-owned

TABLE 5: PERCENTAGE OF LATRINE SUPERSTRUCTURE TYPES BY HOUSEHOLD WEALTH QUINTILE

	Household Wealth Quintile					
	1st	2nd	3rd	4th	5th	Total
Improved or Shared Latrines	n = 505	n = 521	n = 537	n = 556	n = 567	2,686
Latrines with Roof						
Pucca with roof	3.2	5.0	8.8	21.9	57.1	**19.9**
Tin/ bamboo fencing with roof	24.4	30.3	34.8	40.6	29.6	**32.1**
Subtotal (Latrines with Roof)	**27.6**	**35.3**	**43.6**	**62.5**	**86.7**	**52.0**
Latrines without Roof						
Tin/ bamboo fencing without roof	15.8	16.7	15.6	13.1	5.8	**13.3**
Walls of jute cloth/polythene	23.2	20.9	15.6	10.8	3.2	**14.4**
Walls of jute stick/straw/leaf	32.5	26.3	24.4	13.5	3.9	**19.7**
Abandoned	1.0	0.8	0.7	—	0.4	**0.6**
Subtotal (Latrines without Roof)	**72.4**	**64.7**	**56.4**	**37.5**	**13.3**	**48.0**
Total	**100**	**100**	**100**	**100**	**100**	**100**

TABLE 6: SURVEY HOUSEHOLDS CONTINUING WITH OPEN DEFECATION, BY APPROACH

	No Latrine/Open Defecation Only	
Approach	Percentage	Number
NGO CLTS	2.2	13
Non-CLTS	4.5	23
GoB donor	2.9	13
GoB only	2.1	28
Total	2.6	77

(58 percent) their latrine, while 35 percent shared with relatives/neighbors, and 4 percent rented from a landlord.

A large majority of open defecators defecate at dawn (80 percent). Others say they defecate outdoors at night (9 percent) or as they need (11 percent). The main problems mentioned, especially by women and young girls were:

- needing to hurry;
- feeling ashamed;
- being unable to defecate when they need to;
- space shortage; and
- listening to bad words or otherwise suffering humiliation.

Women's and girls' need to defecate at dawn or postpone defecation until after dark is motivated by the need to adhere to rules of *purdah* and helps to explain why women have been a driving force in the transition to latrine use (see Section 4.7).

Almost one-third (30 percent) of the respondents from openly defecating households said they were never counseled; and about half (49 percent) said that they were never pressured by anyone to install an improved latrine. Only 12 percent of the respondents said they were helped or offered any help with obtaining an improved latrine.

A majority (57 percent) of the OD respondents expressed readiness to install an improved latrine within the next 12 months.[17] The reasons provided (multiple responses) by who were not willing were:

- 92 percent said that they had "no money to install one";
- 48 percent had "too little space"; and/or
- 7 percent had "no one to take on the task."

Household survey and in-depth study findings on open defecation were similar but not identical. During transect walks in three villages of each study union, researchers using qualitative study methods conducted "surveys of feces," checking for evidence of open defecation near paths or roads, and following fecal smells to their source. Some open defecation was found by this method to occur in around two-thirds of the unions visited by the in-depth study team, although it is now considered a socially unacceptable practice. The exception is that some elderly males and females continue OD through force of habit; but they are not usually criticized severely for this. Further analysis of open defecation is presented in Section VII.

The amount of OD differed some by approach: the five unions found to have the most OD (according to in-depth methods) included three covered by the CLTS approach, one Non-CLTS union, and one GoB-only union where an ASEH program had followed up after the initial ODF declaration. Household survey results from these same unions found 12 percent, 11 percent, 0 percent, 20 percent, and 0 percent, respectively, having no latrines. Even in lower ranked unions, the amount of OD differed some by approach.

Ranking Unions by OD Scores[18]

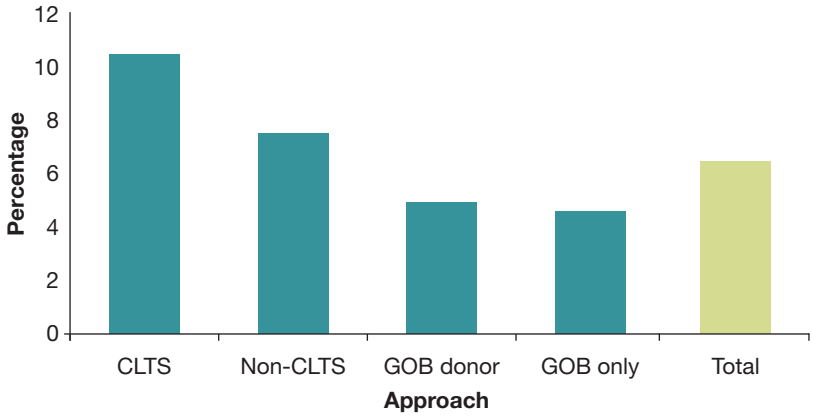
The study team ranked unions by amount of OD observed (see Annex 4). Visiting at crop harvesting time, the reconnaissance team saw evidence of much OD in agricultural fields and in banana groves in some unions. The presence of seasonally in-migrating agricultural laborers appeared to greatly intensify the OD problem. Eight of the 18 unions covered by in-depth study methods have large numbers of in-migrants. In two study unions they use public latrines (or school, mosque, or owners' latrines). They also were found to defecate outdoors (in fields or other open places) in five study unions.

Although they have a small proportion (2.2 percent) with no latrines, a larger proportion of survey households with latrines in CLTS areas (11 percent) admitted doing some

[17] A majority (58 percent) said that they would spend Tk.1000 or less for the latrine and 16 percent would not mention any amount. Ring-slab latrines of various types with or without water seal were the choice of the most.

[18] Annex 4 presents the results of this scoring procedure and details on each union's situation.

FIGURE 6: PERCENTAGE OF HOUSEHOLDS RESPONDING THAT AT LEAST ONE HOUSEHOLD MEMBER PRACTICES OPEN DEFECATION, BY APPROACH (n = 2,686)



Source: Household survey

OD than in other areas. (Figure 6) Findings in some CLTS unions suggest that possibly the absence of UP coercion and fear is at least partially responsible for this result.

Hygienic Status of the Latrine: "Clean" and "Unclean" Types

Along with access to an improved or shared latrine, maintenance of a hygienic standard is essential to attainment of "sanitation" coverage in the real meaning of the word. In Bangladesh, it is evident that water sealing of latrines, though promoted for a long time now, is not yet accepted by the majority of latrine users, as demonstrated by the high proportion of water seals that are broken. Water seals are also difficult to maintain from a practical standpoint in water-shortage areas.[19] The field survey teams documented several maintenance characteristics of the improved or shared latrines they observed (see Annex 5 for full list), but classified whether the latrine was "clean" or "unclean" by the following criteria:

- Latrine pit leaking profusely, and/or
- Feces visible on the latrine floor, pan, or water-seal.

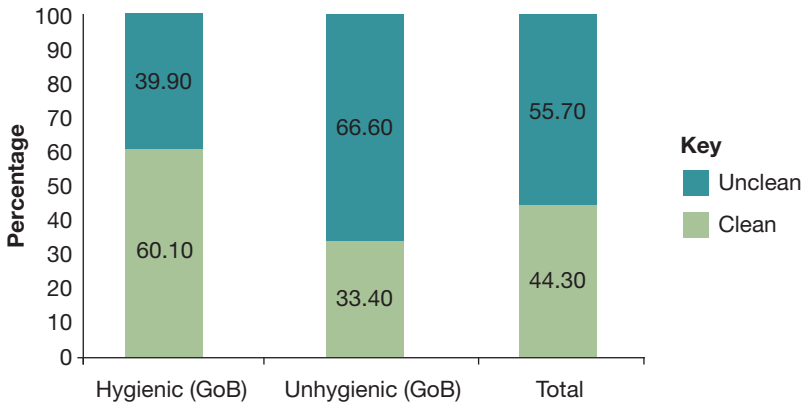
The team classified latrines showing neither of these conditions as "clean." The frequency of clean and unclean latrines in sample household improved or shared latrines is shown in Figure 8 (using the latest GoB definitions) and Table 7 (using the JMP definitions). No matter which definition was used, when "improved" and "unimproved" latrines are considered together, only about 44 percent of latrines were observed to be "clean." Improved or hygienic latrines tended to be cleaner, but even among these latrines, only about half of improved latrines were observed to be clean and only 60 percent of hygienic latrines were clean. The issue of cleanliness is important from

FIGURE 7: AN UNCLEAN LATRINE IN BARISAL DISTRICT (G-DO-1)

[19] Seasonal water shortages are reported by a somewhat higher percentage (12 percent) of households with no water-seals or broken water-seals than those with water seals (9 percent). However, this is not a statistically significant difference.

Only 44 percent of improved or shared latrines were found to be "clean."

FIGURE 8: PERCENTAGE OF HOUSEHOLDS BY GoB DEFINITION OF "HYGIENIC" AND "UNHYGIENIC" LATRINE CLASSIFIED AS CLEAN AND UNCLEAN (n = 2,896)



a public health perspective, since any feces left unconfined is susceptible to potential transmission through various vectors such as insects or animals.

The criteria of a strong foul odor was not used to classify a latrine as unclean, but it is interesting that foul odor is an important consideration for latrine users, most of whose health beliefs associate disease spread with characteristics of the air around them ('bad air/wind' is a commonly perceived cause of illness). A foul or good smell therefore affects people's feelings about latrines and their motivation to use them.

"Clean" and "unclean" are not correlated to the GoB's hygienic/unhygienic definition meaning that if it is a 'hygienic' latrine structure it does not mean it is properly maintained or cleaned. Figure 8 shows that a high percentage of 'hygienic' (39.9 percent) latrines are *unclean*. Using the JMP definition of 'improved', the study showed that 49.1 percent of latrines were *unclean*. When shared latrines are considered the total percentage of unclean latrines goes up to 55.7 percent. This study shows that cleanliness does appear to be slightly correlated with sharing (more description is below under multivariate analysis).

Table 8 provides a breakdown of the different criteria to classify a latrine as unclean.

Multivariable Logistic Regression Analysis

The team used multivariate logistic regression analysis to identify the determinants for using an improved or shared latrine as well as having a clean or

TABLE 7: PERCENTAGE OF IMPROVED AND SHARED LATRINES CLASSIFIED AS CLEAN AND UNCLEAN, BY JMP GROUP

	Improved—Not Shared (n = 1,588)	Shared (n = 1,098)	Total
Clean	50.9	34.9	44.3
Unclean	49.1	65.1	55.7
Total	**100**	**100**	**100**

TABLE 8: PERCENTAGE OF ALL IMPROVED AND SHARED LATRINES CLASSIFIED AS UNCLEAN (n = 1,495)

"Unclean" Latrine Criteria	Feces Visible on the Floor, within the Pan, or in the Gooseneck	Profuse Leaking of the Latrine Pipe, Pit, or the Tank	Strong Bad Smell in and around the Latrine*
Yes	96.6	12.6	46.7
No	3.1	87.4	53.3
Total	100	100	100

*Strong bad smell is included here because it is so important to users. However, it is not included in our criteria for unclean latrines.

unclean latrine. The logistic regression analysis is presented separately from the simpler statistics to clarify and elaborate upon relationships suggested earlier.

Because of the large percentage of households that share a latrine that would otherwise be classified as an improved latrine, this study grouped 'improved' and 'shared' together for the multivariate logistic regression analysis to better understand the differences between households who use a latrine that safely confines feces from those that do not.

TABLE 9: FACTORS ASSOCIATED WITH HAVING AN IMPROVED OR SHARED LATRINE[20]

Variables and Values	Number of Respondents	Number (Percentage) Using Improved or Shared Latrine	Odds Ratio	Significance* (P value)	95 Percent Confidence Interval	
					Lower	Upper
Improved/Shared Latrine (All)	3,000	2,686 (89.5)				
Significant Effect						
Approach to ODF						
Non-CLTS	2,400	2,122 (88.4)	1			
CLTS	600	564 (94.0)	1.81	0.00	1.24	2.64
Post-ODF program:						
No follow-up	1,560	1,353 (86.7)	1			
Follow-up	1,440	1,333 (92.6)	1.86	0.00	1.41	2.44
Recalled ODF campaign						
No	956	811(84.8)	1			
Yes	2,044	1,875 (91.7)	1.72	0.00	1.34	2.22
Anyone visited home and talked about latrine use						
Not visited	2,255	1,988 (88.2	1			
Visited	745	698 (93.7)	1.48	0.03	1.04	2.11
Gender of HH head						
Male-headed HH	2,771	2,470 (89.1)	1			
Female-headed HH	229	216 (94.3)	2.56	0.00	1.40	4.69
Wealth quintile						
1st	600	505 (84.2)	1			
2nd	604	521 (86.3)	1.12	0.52	0.80	1.56
3rd	596	537 (90.1)	1.62	0.01	1.11	2.37
4th	600	556 (92.7)	2.17	0.00	1.40	3.34
5th	600	567 (94.5)	2.72	0.00	1.64	4.52

* Significance is indicated by P </= 0.05

[20] Table 9 shows the results of multivariate logistical regression on factors associated with owning or sharing an improved latrine.

Table 9 shows the significant associations between several variables having an improved or shared latrine. With an odds ratio of 2.72, being a member of the wealthiest quintile was the strongest predictor of having an improved or shared latrine. This is not surprising, as wealthier people presumably could afford better latrines. The odds ratios decrease with each subsequently lower quintile. This suggests the possibility that financing mechanisms may be important to sanitation programs promoting improved latrines.

The significant association between the CLTS approach and having an improved latrine results from shared latrines being included in this grouping. If households that share are removed from the analysis then the association between having an improved latrine and the CLTS approach disappears. This is because there is a higher degree of sharing in CLTS areas. Percentages of improved (JMP) latrines by approach are found in Table 3.

Interestingly, second after being in the wealthiest quintile was being a female-headed household (odds ratio 2.56). A CLTS approach (odds ratio 1.81) was a strong predictor, but it did not have the power of wealth or female-headed household in predicting improved or shared latrine use—and when shared latrines are removed, it was not a predictor. Reasons for the very strong association with female-headed household are unclear, but one hypothesis is that it may have something to do with observance of *purdah* (see Section IV), as well as the possibility that female-headed households are more likely to have male labor migrants sending home remittances. Possible reasons for these results will be explored in detail in subsequent sections.

Other variables that were not found have a statistically significant association with owning or sharing an improved latrine are: education of the head of household or maximum education of children, having a female member in the household aged 13–25, membership in an NGO, reported presence of punishment for open defecation, and receiving a free ring/slab set from the UP. All of these factors frequently come up in key informant and stakeholder interviews, but this statistical analysis challenges widespread assumptions of their importance, at least relative to other factors.

Factors Statistically Associated with Having a "Clean" or "Unclean" Latrine

The possible variables examined as likely to influence the cleanliness of an improved or shared latrine may be seen in the first column of Table 10. The second column in Table 10 shows the number of eligible respondents in the subgroups; the third column shows the percentage variations of the improved or shared latrine cleanliness among the subgroups; and the fourth column shows the odds ratio representing the extent of variation in the values and direction, which is consistent with the third column. The fifth column is the probability level, which indicates whether the independent variable is actually a significant determinant of our interest (dependent) variable or whether the variation could have occurred by chance. Conventionally, a probability value of no more than 0.05 is considered significant and highly unlikely to be due to chance. The larger the odds ratio, the stronger the association.

Table 10 shows the possible factors influencing cleanliness or hygienic maintenance of improved or shared latrines. Logistical regression shows the following associations between cleanliness and other factors:

Very highly significant

- a water seal
- a vent pipe
- roof on the latrine superstructure

Highly significant

- ownership of latrine
- latrine usable during flood or rainy season,
- maximum education of any household member
- a water source located within 10 meters
- pit filled up quickly was mentioned as a problem

Significant

- post-ODF follow-up reported
- number of households sharing a latrine

Some of these statistical associations are easier to understand than others. A water seal in itself ensures confinement of feces in the latrine pit, assuming that sufficient water is poured

TABLE 10: FACTORS ASSOCIATED WITH A LATRINE BEING "CLEAN"

Variables and Values	Number of Respondents	Number (Percentage) Using Improved or Shared Latrine	Odds Ratio	Significance* (P-value)	95 Percent Confidence Interval	
					Lower	Upper
Improved/Shared Latrine (All)	2,686	1,191 (44.3)				
Significant Factors						
Post ODF program						
No follow-up	1,353	571 (42.2)	**1**			
Follow-up	1,333	620 (46.5)	1.22	0.03	1.02	1.45
Ownership of the latrine						
Not using own latrine	891	304 (34.1)	**1**			
Own the latrine	1,795	887 (49.4)	1.38	0.01	1.08	1.75
Water seal						
No water seal	1,434	476 (33.2)	**1**			
Water seal	1,252	715 (57.1)	1.65	0.00	1.38	1.97
Vent pipe						
No vent pipe	1,967	738 (37.5)	**1**			
Vent pipe	719	453 (63.0)	1.58	0.00	1.28	1.97
Superstructure of latrine						
Without roof	1,289	410 (31.8)	**1**			
With roof	1,397	781 (55.9)	1.63	0.00	1.34	1.97
Distance from latrine to water source						
10 meters and more	1,495	568 (38.0)	**1**			
Within 10 meters	1,191	623 (52.3)	1.27	0.01	1.07	1.51
"Pit filled up quickly" was mentioned as a problem						
No	2,432	1126 (46.3)	**1**			
Yes	254	65 (25.6)	0.64	0.01	0.47	0.88
Number of HHs sharing latrine[#21]			0.89	0.04	0.82	0.99
Highest education of any family member[#]			1.04	0.01	1.01	1.08
Wealth quintile						
1st	505	156 (30.9)	**1**			
2nd	521	194 (37.2)	1.01	0.95	0.76	1.33
3rd	537	204 (38.0)	0.89	0.42	0.66	1.19
4th	556	262 (47.1)	0.95	0.73	0.69	1.29
5th	567	375 (66.1)	1.44	0.04	1.02	2.05

#: Continuous variable
* Significance is indicated by P </= 0.05

[21] The number of households sharing a latrine is not equivalent to numbers of people. Poorer households tend to be smaller, as they cannot afford to support a larger concentration of household members. The qualitative team found that a wealthier household's latrine that was not shared might have more users than a latrine shared by at least two poor households.

after defecation. The connection between having a vent pipe as well as a roof and their association with cleanliness may be because those with a ventilated pit latrine or a roof on the latrine give household sanitation a higher priority.

Having a water source nearby is a very important factor that makes routine latrine maintenance convenient for housewives. The number of households using a latrine is negatively associated with cleanliness, but the association is not strong. This negative association makes sense since owners seem to be more motivated than non-owners to take care of their facilities. As discussed in Section 3.2, sharing between households often leads to problems with routine latrine cleaning, so a relationship between sharing and cleanliness is not surprising. There is a slight positive association between the maximum education of any household member and cleanliness, which may say something about the influence of the education system on sanitation awareness.

On the other hand, *no significant statistical association was found on the clean/unclean status of household latrines* for the following variables:

- approach used in ODF campaign
- joining in an ODF campaign
- getting a free ring/slab set from the UP
- age of the latrine
- visit from a sanitation promoter
- gender of household head
- membership in an NGO
- religion of household members
- family members staying abroad
- education of household head
- perception that rules against OD will be enforced, and violators punished

It is interesting to note the different types of variables that are associated with the likelihood of a latrine being kept "clean." Existence of a follow-up program contributes significantly, but "cleanliness" is not associated with any specific approach or with being visited by a sanitation promoter. These findings are different from those on having an improved or shared latrine. In relation to latrine "cleanliness" there is an apparent discrepancy between having a follow-up program (associated) and being visited (not associated). A possible explanation for this discrepancy may be that the presence of a follow-up program supports changes in community-level thinking, which in turn supports personal efforts to maintain latrines already installed.

People needed the intense persuasion of personal visits to make the change to using an improved or shared latrine; but they tend to feel bored and insulted by too many repeated visits to monitor their maintenance behavior. The routine of keeping a latrine clean seems to be influenced more by other processes than by personal, household-level program intervention. These other processes (presence of water supply, ownership and sharing, and distance between the latrine and living spaces) are explored further in Section 3.2.

3.1.2 Durability, Upgrading, and Downgrading

Duration of Latrine Ownership

Survey interviews covered the history of household latrine use over the last five years, including the latrine type associated with each change. Throughout the period, 47 percent of the households continued with the same latrine; 41 percent had used two latrines sequentially during the five-year period; and the remaining 10 percent had used three or more different latrines sequentially.

The survey findings show that almost half the latrines used by the survey households had been installed within the past four years, and 30 percent within the past two years. This implies either that many latrines installed in the process of ODF declaration were damaged or that owners subsequently improved their latrines. Another factor in the high rate of new latrines is that in rural Bangladesh, many new households are added through break up of joint families, new marriages, or building of new houses. However, the fact that about 45 percent of latrines are used for more than 5 years indicates the existence of significant number of durable latrines from the ODF or pre-ODF period. Table 11 shows the distribution of improved or shared latrines by the period when they were installed. The lower median period value of latrine installation in CLTS area latrines as compared to other segments is perhaps due to locally innovative, short-lived latrine technologies.

TABLE 11: PERIOD OF INSTALLATION OF IMPROVED OR SHARED LATRINES, PERCENTAGE BY APPROACH

	Approach				
Duration	CLTS (n = 524)	Non-CLTS (n = 444)	GoB Donor (n = 377)	GoB Only (n = 1,142)	Total (n = 2,487*)
Up to 6 months	10.1	6.3	6.6	6.5	7.2
7–12 months	12.8	9.9	11.4	12.3	11.8
13–24 months	11.5	12.2	12.5	11.1	11.6
25–36 months	10.1	9.7	9.5	10.9	10.3
37–48 months	6.3	9.5	8.5	7.9	7.9
49–60 months	4.2	9.2	5.6	4.9	5.6
More than 60 months	45.0	43.2	45.9	46.1	45.4
Don't know	—	—	—	0.3	0.1
Total	**100**	**100**	**100**	**100**	**100**
Mean Latrine Age (months)	**67.6**	**71.8**	**68.3**	**71.4**	**70.2**
Median Latrine Age (months)	**48.0**	**60.0**	**56.0**	**60.0**	**60.0**

*Not all households with improved or shared latrines were able to answer this question.

The average duration of owning the present latrine varies according to approach. The lowest duration is in CLTS intervention areas, where the median period is 48 months; and the highest is in both GoB and non-CLTS NGO intervention areas, where 60 months is the median. GoB-Donor areas are in-between, at 55 months median duration of ownership. The lower median in CLTS intervention areas may be related to the more frequent use of locally innovative, short-lived latrine technologies.

Changing the Latrine: Upgrading and Downgrading

The most frequently mentioned reasons for changing the latrine at any time during the five year period were: latrine damage, wanting or being pressured to install a latrine, the pit filling up, and change of residence.

Most latrine changes were to a similar or better type of latrine. However, a relatively small minority downgraded. Interviewers collected latrine-use history from households for the last five years. Analysis of the findings shows that 47 percent of the households were continuing with the same latrine, 20 percent had upgraded their latrine, 23 percent had changed but chose a similar type, and the remaining 9 percent downgraded (Table 13). During analysis, the team collapsed the changes into three broad types of improved or shared latrines.

Table 13 summarizes the results by approach to ODF, geographic area, post-ODF follow-up, wealth ranking, and other categories that the qualitative results or the literature showed were probably important contributors to the type of latrine used.

TABLE 12: TOP FOUR REASONS REPORTED FOR CHANGING THE LATRINE (ALL CHANGES COMBINED), PERCENTAGE BY APPROACH

	Approach				
Stated Reasons	CLTS (n = 317)	Non-CLTS (n = 257)	GoB Donor (n = 231)	GoB Only (n = 670)	Total (n = 1,475*)
Latrine damaged	34.4	35.0	31.2	46.0	39.3
Wished/pressured to have a better latrine	37.2	37.0	48.1	37.3	38.9
Pit filled up	49.5	21.4	36.8	21.0	29.7
Change of residence	13.9	10.5	3.9	13.0	11.3

*Not all households with improved or shared latrines were able to answer this question.

TABLE 13: UPGRADING AND DOWNGRADING OF LATRINE TYPES OR DEFECATION PLACES, PERCENTAGE FOR VARIOUS GROUPS

Subgroup		No Change (n = 1,418)	Upgrading (n = 606)	Replaced with Same Type (n = 693)	Downgrading (n = 283)	Total (n = 3,000) Percentage	Total (n = 3,000) Number
Approach to ODF	CLTS	44.8	20.7	25.7	8.8	100	600
	Non-CLTS	49.1	19.1	23.0	8.9	100	540
	GoB donor	45.8	22.1	19.4	12.7	100	480
	GoB only	48.1	19.8	23.3	8.8	100	1,380
Geographical area	Arid/plain	46.9	19.1	24.6	9.4	100	780
	Char	31.7	32.8	27.8	7.8	100	180
	Flood	46.2	22.1	21.0	10.7	100	840
	Coastal	44.4	15.0	29.4	11.1	100	180
	Hilly	58.9	17.8	17.2	6.1	100	180
	Mixed	50.1	18.2	22.7	8.9	100	840
Post ODF program	Follow-up	44.2	21.8	25.3	8.7	100	1,440
	No follow-up	50.1	18.7	21.1	10.1	100	1,560
UP chairman activity level	Very active	46.0	21.9	24.2	7.9	100	960
	Moderately active	45.4	22.7	22.7	9.2	100	900
	Not active	49.7	16.8	22.5	10.9	100	1,140
Wealth quintile	1st	33.7	26.8	25.8	13.7	100	600
	2nd	40.7	22.2	24.2	12.9	100	604
	3rd	44.6	20.5	24.7	10.2	100	596
	4th	55.2	17.8	21.3	5.7	100	600
	5th	62.2	13.7	19.5	4.7	100	600
Total (Percentage)		**47.3**	**20.2**	**23.1**	**9.4**	100	3,000

Table 13 shows that there is more change in char areas than in other geographic regions. The char life style requires whole populations to move when their unstable sandbar islands and riverbanks erode or disappear. It is important that char households were more likely to upgrade their latrine types than households of other regions. This indicates a satisfactory level of motivation among char people to sustain latrine use once it is adopted. The study team, in fact, has heard of char households moving their latrine rings and slabs when they are forced to relocate.

Flood/cyclone-affected households are more likely than others to downgrade their latrines. This explains the higher percentage of downgrading among households covered by the GoB-Donor approach, which did most of the sanitation promotion in coastal areas during the ODF campaign. The extreme losses experienced by flood-affected households—and even more so by cyclone-affected households—makes it difficult to replace lost latrines with better ones, although some of course do so.

The lesser rate of latrine change among households of hilly areas probably can be explained by soil conditions in the Chittagong Hill Tracts union, where pits rarely collapse, and also by the skewing of the northeastern hilly area households' wealth rank toward higher income levels, which reflects the area's wealth relative to other areas.

> *"The quality of latrines has improved over the years. First there were* motka *latrines, then bamboo-built pit latrines, and then ring-slab latrines."*
>
> —A village woman (CL2)

It is important to note that poorer households are much more likely to downgrade their latrine types than more solvent

BOX 2: A NEW LATRINE PROTECTS A POOR FAMILY'S PRESTIGE BEFORE FUTURE IN-LAWS

Abbas Nazrul (55) is a sharecropper and agricultural wage laborer. His wife, Aicha Issa, is 42. They have two sons and two daughters. Abbas said, "I was using a latrine that was just a slab set over a plain, unlined pit. It filled up one month ago. So, we were suffering from this sort of filled-up latrine. I thought I would contract a cleaner, but my wife and sons said we should close that crude (*kacca*) latrine and install a new one. I estimated that a new one, including walls and roof, would cost 1500 taka [US$22]. I did not have not so much money to spare for a latrine. I was very disappointed at my financial capacity.

Meanwhile a proposal was placed for my elder daughter's marriage. A matchmaker, who is my relative, came to my house and advised me to make the house clean and set up a latrine because bridegrooms' families give importance to latrines. So I quickly installed a latrine provided by BRAC with sandal and soap available nearby.[a] One day, the bridegroom's uncle visited our house and walked around. At one point, he wanted to use the latrine. Then he visited the latrine and was happy with our latrine arrangement. So the BRAC latrine protected my family's prestige."(NG-4)

[a] It is standard for sanitation programs to recommend wearing sandals inside the latrine, rather than going in with bare feet; so sandals often are placed near the latrine entrance. Placing soap nearby for post-defecation hand washing also is recommended.

households. However, they are also more likely to upgrade. These seemingly contradictory findings result from the fact that more affluent households started out with much more satisfactory sanitation facilities. For a large proportion of poor households, the latrines acquired as a result of the sanitation campaign were the first improved or shared latrines they had ever used. Investing initially in less costly types, they were more likely to replace their first latrines than non-poor households.

Although these data do not show interesting differences between specific program approaches, the information does suggest two program-related points:

- The presence of a follow-up program seems to be associated with the likelihood of households making changes in their latrines, specifically upgrading the types rather than downgrading.
- Having a UP chairman who is interested in sanitation appears to have the same effect.

The qualitative study team identified the following as principal motivations to upgrade the latrine type:

- increased number of family members;
- social changes, especially marriage of a child; and
- religious festivals involving many visitors coming to a village.

UP chairmen and other stakeholders acknowledged that some amount of "slippage" has occurred in many of the visited unions. The reasons for decline were said by one chairman and a union council member (in GO-3) to be joint family break-ups and floods. A Union Secretary in Narsingdi District estimated the degree of slippage in his union to be approximately 15 percent. He attributed this to three factors: construction of new houses without latrines, breakdown of latrines, and some people never having been motivated to use latrines in the first place.

The qualitative team collected reports of nine cases of downgrading from hygienic to non-hygienic latrine types or open defecation in eight different districts. In seven cases the latrines either filled up, were damaged in storms or floods, or parts broke. In two cases household members had injured themselves by falling into latrine pits after their latrine slabs broke.

In three cases, the original ring-slab latrines had been shared by more than one household, and the users either could not agree on a replacement plan, did not feel they could afford a new latrine, or just made their own new arrangements. In cases where there were large numbers of users, different people downgraded in different ways. Some resumed OD, and others started using familiar types of non-hygienic latrines, such as simple pits without covers (*gorto*), a hanging latrine over a canal, and a large, uncovered clay bowl (*chaari*) into which feces flow from a slab and pipe. A few women

It is possible, *but unusual*, to descend the sanitation ladder in Bangladesh.

started using neighbors' latrines. People living in the surrounding areas were upset by these people's return to OD and other unhygienic arrangements.

3.1.3 Giving Up Improved or Shared Latrine Use

Although they constitute a small minority, the existence of households that downgraded or reverted to OD shows that it is possible—but unusual—to descend the sanitation ladder in Bangladesh. Table 14 presents these cases by intervention approach. The CLTS cases were all found in three unions (no unions where Dishari is present) out of the 10 CLTS unions covered by the study. Unlike those in other types of areas, there were no cases of CLTS area respondents reverting to hanging latrine use; rather, the three former households using an improved or shared latrine in this group had all returned to the practice of OD.

The household survey cases of former improved or shared latrine users returning to open defecation are not evenly distributed across the study population; rather, they cluster in certain specific unions. Four of the 25 sampled GoB-only unions, for example, account for 35 cases, or 70 percent of the cases for this intervention group. Within the CLTS intervention group none are in the Dishari type of intervention areas.

3.1.4 Change in CLTS Unions

CLTS unions are of special interest in regard to the subject of latrine/defecation changes because alternative, low-cost technologies were promoted in these areas. Proponents of this approach assumed that once the latrine use habit was established through affordable technologies, people would tend to continue the habit and invest in more durable latrine types. This assumption has proven to be correct in most cases. However, the large-scale demand that was created through this campaign and the private sector's response to meet the household demand for sanitation also needs to be considered in providing an opportunity for households to upgrade. The CLTS approach alone is likely not sufficient to ensure that households will upgrade their latrines without access to latrine parts providers. Table 14 does not show much difference in upgrading of latrines when CLTS is compared with the total numbers and percentage of upgrades in all approaches; but there is slightly more change in CLTS areas than in others.

TABLE 14: PERCENTAGE OF HOUSEHOLDS FORMERLY USING AN IMPROVED OR SHARED LATRINE (OR NOT) THAT HAVE DOWNGRADED OR SLIPPED BACK TO OPEN DEFECATION

Present Defecation Arrangement	Formerly Used Improved or Shared Latrine	Approach (Percentage)				
		CLTS	Non-CLTS	GoB Donor	GoB Only	Total Percentage
Have No Latrine/Open Defecation		(n = 13)	(n = 23)	(n = 13)	(n = 28)	(n = 77)
	Yes	76.9	56.5	76.9	75.0	70.1
	No	23.1	43.5	23.1	25.0	29.9
Use Hanging/Open Pit Latrine		(n = 0)	(n = 3)	(n = 5)	(n = 5)	(n = 22)
	Yes	—	50.0	100	66.7	72.7
	No	—	50.0	—	33.3	27.3
Total		100	100	100	100	100

3.1.5 Community Latrines

A "community latrine," as compared to a "public latrine," serves the needs of area residents. The assumption is that it is installed and maintained through community initiative and participation or support. A public latrine is usually installed with funds from government or a Bazaar Committee. Common features of five or six cases are:

- Some community latrines do not allow unrestricted access by community people. They are kept locked some or all of the time.
- NGO funding has supported construction of some community latrines; thus, these latrines represent NGO initiatives rather than community initiative.
- A process of community member's participation in decision-making was lacking. This is the consequence of a decision by someone with power.
- Community latrines are perceived to be only for the poor and destitute; members of other classes do not share ownership of the community latrine. As a result, it is difficult to secure community funding.
- Repair and cleaning remain major challenges to keeping a community latrine operational.
- Sustainability of the community latrine depends largely on the local leadership of the community using the latrine.

3.1.6 Public Latrines

Public latrines are constructed for use by passers-by and the general public. Users of public latrines are shopkeepers, itinerant traders, people shopping in bazaars, travelers waiting at bus stands, and "floating people," who are those staying in a village but have no specific accommodations. Often they are agricultural laborers hired to help with planting or harvesting crops. Resident Sweepers,[22]

[22] "Sweeper" is a Hindu caste whose traditional occupations include handling 'polluted' substances.

BOX 3: KEY INFORMANTS HAD SEVERAL OBSERVATIONS ABOUT THE CONDITION OF PUBLIC LATRINES IN THEIR UNIONS

1. "In general, public latrines are mismanaged. For example, no one takes care of them and no one gives out the key." (G-Do-1)
2. "Regular supply water is needed, but not available." (Bazaar Secretary)
3. "Many public latrines are not installed in convenient places because suitable land cannot be obtained. People do not want the latrine installed near their shops, on their land, and so on. For example, a Bazaar Committee closed up the public latrine to save them from pollution. Another one, kept open, was located very far away from the bazaar. But, the UP needs to spend funds allocated for public latrines." (G-Do-4)
4. Users do not want to pay fees. (e.g., G-Do-4) "They'll pay tk. 5 for a cigarette but do not want to pay 1–2 taka for latrine use. Or, people with big egos feel they should not be expected to give money. Thus there is not enough money for latrine maintenance." (Normal fees are Tk. 1–3)
5. Caretakers force strangers to pay large amounts of money. The Caretaker gets paid from the user fees, and they have a target for amount of money to be collected. For example, in CL-2, the public latrine is near an eating establishment. And, in G-Do-1, one was leased out in the past but the lessor couldn't earn enough, so the Bazaar Committee had to cancel the lease agreement with that caretaker. The lease lasted only three months. Now the Bazaar Committee operates it themselves, and it's in bad condition.
6. People living/working near public latrines are offended by the bad smells. (In G-Do-1 some people approached team members and complained that children were becoming sick from the bad smells, and the waterways were being polluted by outflow.)
7. Landowners (people who have donated land to the Bazaar Committee) may commandeer the facilities for their private use and treat them as private latrines.

perhaps the lowest status group, also mostly depend on public latrines. People coming for public gatherings (ceremonial, political, or cultural) need public latrines as well. Some villages have settlements of nomadic "Bedde" living in tents or in boats that require access to latrines, and public latrines are often the answer.

The following are considered to be public latrines:

- any bazaar latrine;
- a latrine at the roadside or at a bus stand;
- a facility where users pay money for use;
- a latrine in a government department (LGED, Roads and Highways, UNO, or other) building whose use is unrestricted; and
- a UP- or upazila-provided latrine.

At times, a school or mosque latrine might serve as a public latrine. Those in bazaars were built by various government or non-governmental donor organizations and handed over to the UP. Large sums of money had been spent constructing some of them. The UP either leased or simply delegated management responsibility to others, such as Bazaar Committees. The responsible groups or individuals then hired caretakers to assume the day-to-day management. Almost none were properly managed. Few had a convenient and functional water supply. Funds for repair and cleaning were inadequate. Those in charge reported major problems finding and keeping caretakers. Of the three public latrines in UP compounds, two were found to be very unclean; one was locked. People do not want to take leases for latrines because they cannot make enough money. And it is not a respectable job. There is some fear of the family's reputation being damaged. For these reasons, we found only two out of 30 public latrines that were actually leased out. These were in CL-3 and CL-4/D study unions.

The team found that latrines in mosques or schools are better maintained than bazaar or UP public latrines. These latrines receive more attention from those who use them, and are used only at certain times and locked at other times. Mosque latrines have convenient water supplies nearby for use of worshippers; this water is also available for latrine cleaning. Usually, students and/or teacher clean school latrines, or in some cases Sweepers are hired by school committees. Government and NGO school latrines are almost always few in number compared to the numbers of students needing to use them. Madrasas have more latrines, which were observed to be mostly well maintained.

3.2 Household Latrine Ownership, Sharing, Maintenance, and Practice

The results presented in this section relate to Study Objective No. 1: *To determine the current status of latrine facilities built pre- and post-ODF declaration and sanitation practices.*

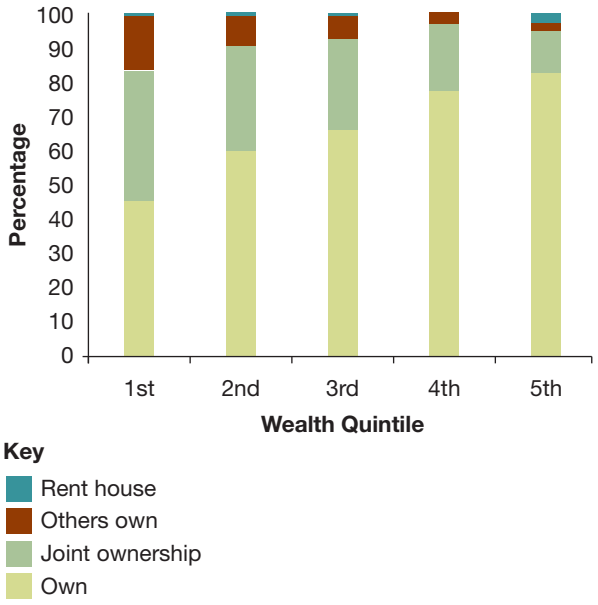
This section reviews findings on latrine ownership and sharing; defecation habits of the elderly, the disabled, and young children; people's ideas about the characteristics of a "hygienic latrine" (*shaasto samoto paikhaana*, which literally translates to "health-enhancing latrine"); maintenance procedures, including routine cleaning, pit emptying, damage, and repair; and sanitation experiences of poor households.

3.2.1 Latrine Ownership and Sharing

Both GoB and JMP classifications assume that sharing a latrine negatively affects its sustainability. This study therefore investigated sharing arrangements in some detail. A latrine was counted as "shared" if it was reported to be "jointly owned," if respondents reported using another household's latrine, or if the owners said that they regularly shared use with at least one other household. Interviewers asked latrine owners how many households and members were using their latrines on a regular basis. The team collected information on ownership of latrines only for improved or shared latrines. If a household owned more than one latrine, the team used information about the most commonly used latrine. Table 15 shows frequencies of latrine sharing according to approach. Of those households that own an improved type of latrine, about 41 percent of them share it with another household. In 19 percent of cases, more than two households share.

There are more households involved in more than two-household sharing arrangements at every economic level in CLTS areas than areas with other approaches. But the difference between CLTS and other areas is especially striking in the middle and upper-middle income groups: e.g., 31 percent upper-middle households participated in 2+ household

FIGURE 9: PERCENTAGE OF TYPE OF LATRINE OWNERSHIP BY WEALTH QUINTILE (n = 2,686)



shares in CLTS areas versus 17 percent, 9 percent, 16 percent in NGO-GO-Don, and GO-only areas, respectively.

The ideas of ownership and sharing must be understood in the context of rural family life, which typically involves the life cycle of a joint family. Most latrine sharing occurs among related households. Brothers who live together with their parents after marriage in the joint family system form a single family unit that can last for many years. At some point, the wives start to cook separately and agricultural lands may be formally divided among the heirs. This separation process usually occurs gradually. It can go smoothly or with difficulty. Once the brothers have divided up their inherited lands and kitchens, they may or may not continue using the same latrine, depending on the quality of their relationship. Some move out of the ancestral home and build new, separate residences.

The proportion of households not sharing their own latrines was higher in GoB-donor areas (70 percent) and hilly areas (78 percent). But, as with latrine ownership, sharing has more to do with economic status than with program intervention approach or geographical region. *Households sharing latrines are poorer on average than those not sharing latrines* (Figures 9 and 10).

The average number of people using the latrines by type and approach is shown in Table 16. The average number people who use a latrine that is not shared is five people while there is an average of 10 people for the shared latrines. There is not much difference in sharing patterns according to presence/absence of a follow-up program or presence/absence of a current sanitation program.

There are, however, some interesting differences in latrine-sharing patterns among unions covered by different approaches (Figure 11). While the association with not sharing and wealth rank is generally similar among the different approach-areas, CLTS and GoB-only areas have larger percentages of high-income households (both upper middle and rich) in situations where two or more households share. The two-household-only sharing arrangement is primarily found among poor and ultra-poor households (more than 50 percent of this sharing type) in all types of approach-areas.[23]

Table 17 shows that latrines used by more than one household are more likely to be unclean than those that are not shared. But more than half of non-shared latrines are unclean too.

The reasons that latrine sharing is associated with lack of cleanliness are easy to understand. Women, who are

[23] It is possible that this is due to a program success in engaging the elite and giving them leadership roles in promoting latrine use one way or another. See Section 7.9 for a discussion of this point.

FIGURE 10: PERCENTAGE OF HOUSEHOLDS THAT SHARE BY WEALTH QUINTILE (n = 2,686)

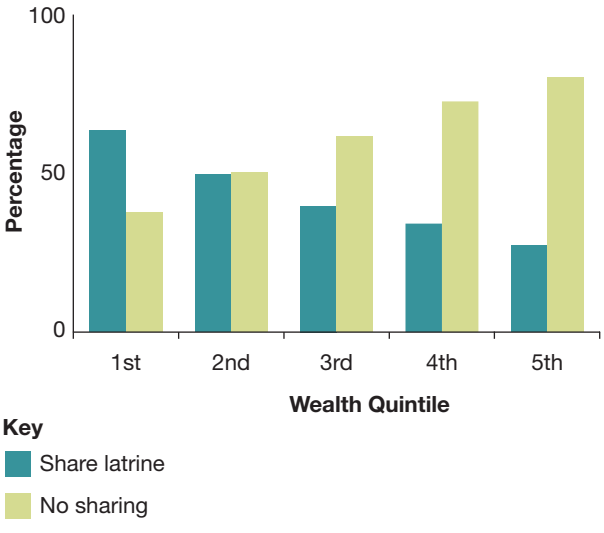


TABLE 15: PERCENTAGE OF HOUSEHOLDS THAT SHARE BY WEALTH QUINTILE (n = 2,686)

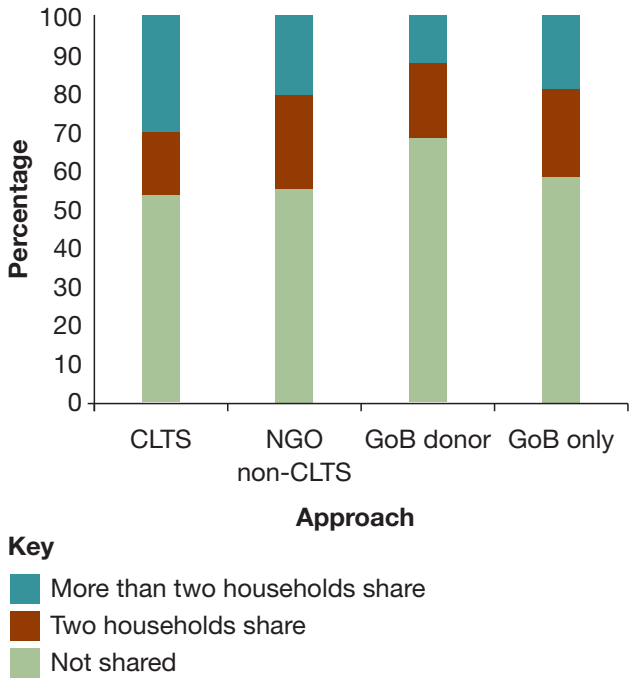
	Approach				
Sharing Only Improved Type Latrines	CLTS (n = 564)	NGO non-CLTS (n = 482)	GoB Donor (n = 396)	GoB Only (n = 1,244)	Total (n = 2,686)
Not shared	54	57	70	59	59
Two HHs share	18	23	19	24	22
More than two HH share	28	20	11	18	19
Total Percentage	**100**	**100**	**100**	**100**	**100**

* See section 3.2 for a discussion of sharing, CLTS approach, and use of improved/shared latrine.

TABLE 16: AVERAGE NUMBER OF PERSONS USING AN IMPROVED LATRINE, SHARED OR NOT SHARED, BY APPROACH, GEOGRAPHICAL AREA, AND WEALTH QUINTILE

	Average Number of Persons Using an Improved Latrine		All	
Sharing Status	Shared (n = 1,098)	Not Shared (n = 1,588)	Average	Number
Approach to ODF				
CLTS	10.6	4.7	7.4	564
Non-CLTS	9.7	5.1	7.1	482
GoB donor	9.6	5.2	6.5	396
GoB only	10.0	5.2	7.1	1244
Geographic Area				
Arid/plain	10.4	4.6	7.4	727
Char	8.2	5.3	6.5	170
Flood	9.8	5.2	7.1	736
Coastal	8.2	4.6	5.9	147
Hilly	14.6	6.4	8.4	177
Mixed	9.9	5.0	6.9	729
Wealth Quintile				
1st	8.4	4.0	6.7	505
2nd	9.2	4.5	6.8	521
3rd	10.8	5.0	7.4	537
4th	11.8	5.3	7.4	556
5th	11.9	5.7	7.2	567
All Average	**10.0**	**5.1**	**7.1**	**2,686**

FIGURE 11: PERCENTAGE OF HOUSEHOLDS THAT SHARE BY APPROACH (n = 2,686)



responsible for routine latrine cleaning, find sharing arrangements quite annoying. These arrangements very often force one woman to clean up other families' messes and provoke arguments among the involved housewives. As resentment builds, everyone tends to lose interest in maintaining the facility, and it becomes less and less likely to be kept clean. Table 17 presents the statistics.

3.2.2 Latrine Sharing: Case Studies

The in-depth study team collected information on 39 cases of household latrine sharing arrangements and experiences in 11 different districts. Twelve of the cases involved three or four households, and two involved five or seven. Reports included cases of 9 to 21 people sharing a common latrine. Various types of sharing arrangements exist. More than one latrine may be shared by a group of households. For example, seven households share two latrines in GO-5. In one Sylhet village, 55 "colony" households—all living in rented houses—share one latrine. In one village of the CL-1 study union, there are 30 families living on property owned by others. These living arrangements are said to include usage of the landowners' latrines. Some of these house rental arrangements are socially complex, akin to hospitality, as the non-owners are of the same Hindu caste, and some of the new renters are there because they have lost land elsewhere to erosion.

Although many sharing arrangements seem to be working well enough, focus group participants and others often mentioned the inevitable problems of keeping shared latrines clean and waiting in uncomfortably long lines in the early morning and evening (preferred defecation times). Money was another frequently mentioned problem. People are especially concerned about pit emptying costs. The more users there are, of course, the more frequently pit cleaners must be paid. Worries about this expense strain latrine sharing arrangements. One person explained that there are two kinds of sharing agreements: "flexible" and "conditional." In the latter type, the parties make a clear agreement to share routine cleaning duties and pit emptying expenses. Among the case studies collected, only one mentioned having such

TABLE 17: PERCENTAGE OF HOUSEHOLD LATRINES AND CLEANLINESS*

Latrine Cleanliness	Not Shared (n = 1,588)	Two HH Share (n = 583)	More than Two HH Share (n = 515)	Total (n = 2,686)
Clean	50.9	36.4	33.2	44.3
Unclean	49.1	63.6	66.8	55.7
Total	**100**	**100**	**100**	**100**

*Chi-square tests (two-sided): significant (p<.000). This test showed that there is a statistical association between sharing and cleanliness, but does not show the strength of the association.

an agreement. Two women said that their four-household latrine sharing arrangement worked well because the men were away from home most of the day (NG-3).

Several people said that there are limits to how much one, unrelated household will allow another family to use the latrine. Most agree that "a few days" is the maximum until, as one put it, "their faces become dark" and one realizes it is time to stop using their latrine. It is interesting that even if a family refuses to allow a neighbor to use their latrine, they often will allow the neighbor's guests to use it now and then.

While several people deny that they ever defecate outdoors (regardless of problems with their household latrines), a few people in almost every group discussion said that sharing arrangements involving large numbers of people will lead to some of them defecating outdoors at times. Many said that this is especially true of children who have more difficulty controlling the defecation urge than adults do. So messes created by children are another common problem mentioned in connection with sharing household latrines.

Sharing arrangements had been cancelled in eight of the 39 cases. Reasons for giving up the share arrangement were: division of a joint family, anger, and/or breakdown of latrine equipment. However, people returned to OD in only two of these eight cases (both in Narsingdi District). The rest either set up new latrines or started sharing with different people.

3.2.3 Defecation Practices of the Elderly, Disabled People, and Children

Elderly or Disabled

Apart from using special pots (often spittoons) as bedpans, no technological innovations were found to support latrine use by the disabled or very elderly people. The most common arrangements seem to be either escorting them to a defecation place or allowing them to defecate in a courtyard and cleaning up the feces later with a spade, in much the same manner that very young children's feces are managed. It was common in some areas for the disabled or very elderly to defecate on polyethylene sheets near the bed or in a courtyard; another household member would clean up these sheets later. Two types of arrangements were observed for elderly or disabled people:

- *Defecating with help from others.* Most frequently, elderly infirm and disabled people are either escorted to a defecation place by a relative; or they defecate in their beds or on the courtyard, and a household member cleans up their feces.
- *Self-help.* An infirm, elderly person might have his or her own pot that is used for elimination and emptied by another household member. One blind woman, who formerly had to be escorted to a defecation place, expressed happiness at suffering less "humiliation" after a household latrine was installed, because she could use it privately without any problems. Women in two focus groups said it is best for elderly people to use latrines, so their female relatives do not have to clean up their feces from the courtyard. This is a change in attitude associated with the sanitation campaign, they explained.

Only 1.4 percent of survey households (a total of 39) reported having an infirm old or disabled person in the home. As Table 18 shows, none mentioned latrine use when asked where this person defecates. There does not seem to be much difference between those unions with and those without follow-up programs on this point. Like focus group participants, a large proportion of survey respondents (44 percent) reported putting the old or disabled person's feces into a latrine. Other methods of disposal were:

- threw at a distance/into the woods (18 percent),
- threw in the garbage pile (15 percent),
- washed/threw in pond/canal/river (13 percent),
- left them in the same place (8 percent), and
- washed them in the tube well platform (3 percent).

Young Child Defecation

Interviewers asked survey respondents: "Is there any child in the household who does not or cannot use latrine?" About 29 percent of the households had such a child. Interviewers asked those respondents about the place where each child defecated last and where the feces were disposed of. Figure 12 shows percentage responses. The study team found more use of children's potties than it expected to

TABLE 18: PERCENTAGE OF HOUSEHOLDS REPORTING LOCATION WHERE ELDERLY OR DISABLED HOUSEHOLD MEMBER MOST RECENTLY DEFECATED

Defecation Place	Percentage (n = 39)
In pot/bed pan	28.2
On blanket/bed	25.6
In the courtyard	20.5
No specific place	25.6
Total	100

find. Potties for toilet training young children are now used by more well-off households in many unions, where they can be purchased in shops selling plastic items. The price of a potty ranges from Tk.60 to Tk.150.

Promoting children's latrine use is an important part of establishing latrine use in the general population. Focus group participants said that the youngest age at which a child started latrine use was three and the oldest age was six. Most children start toilet use by the time they are aged three or four. Before that age, they mostly defecate in the homestead courtyard with or without the help of their mothers. By age five, they are expected to stop defecating at random spots around the courtyard. Their mothers often take them to the toilet for defecation to get them accustomed to latrine use.

Focus group participants said that they prefer to get their young children accustomed to latrine use so that they will not have to clean up after them. They also said it was good for children to get in the habit of using latrines at young ages so they will continue the practice as they grow.

Picking up a child's feces is the responsibility of the mother. After cleaning up their children's feces, most women report washing hands with soap, ash, or mud. Some do not, but they are a minority. However, the household survey showed that 68 percent of households did not have soap available at a handwashing station.

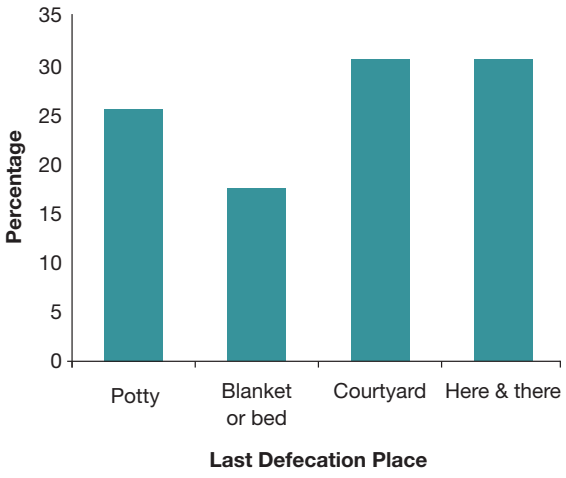
Like the feces of elderly or disabled people, the feces of young children are frequently disposed of in an unsafe manner from a public health viewpoint. The feces of the child's most recent defecation reportedly were disposed of in different ways, with the highest proportion (43 percent) saying that they put them in a latrine. Other frequently used disposal methods (some mentioned more than one) that pose public health risks, including:

- threw in the garbage pile (24 percent),
- threw in the woods (21 percent), and
- washed in the pond/canal/river or on a tube well platform (16 percent).

Findings of the qualitative interviews were similar to those from the survey, with the additional mention of burying them in a pit or putting the feces into a compost pit, in two unions (NG-3 and GO-5). In CL-3, the study team found people putting children's feces into a special garbage pile called *maaind*, which includes household vegetable scraps, ashes, and cow dung. It is sold to farmers once a year for use as compost in paddy fields. *Unlike survey respondents, very few focus group participants said that the feces are put into a latrine.* In at least four focus groups, mothers expressed fear about broken or tilted latrine slabs being dangerous for small children to use. They said it would be a great relief if some kind of child-friendly toilet were invented.

School-age children have high levels of awareness of the importance of sanitation. Among the children that the team interviewed, girls are even more interested in latrines than boys. They use them both day and night. Parents (mothers and fathers both) accompany children to latrines at night. Except

FIGURE 12: LAST DEFECATION PLACE OF CHILD WHO DOES NOT USE A LATRINE (n = 776)



in NG-1, boys who go to out to fields with their fathers say that their fathers let them defecate outside in the fields.

Some factors discouraging children from latrine use were identified:

- Some mothers (especially poor ones) discourage children from using latrines to avoid the pits filling up too quickly.
- Some mothers complain that children are likely to make latrine pans dirty, as they do not pour enough water after they defecate.
- At night time, some children do not feel comfortable going to distant latrines. They fear snakes and ghosts.
- Shortage of electricity can make it difficult to use latrines at night when it is dark.
- Some children mentioned defecating in tidal waters in a coastal area of Chittagong District (CL-1) during high tide. The tidal outflow carries their feces away.

3.2.4 Latrine Cleaning and Maintenance

Ideas about Hygienic Latrines

Shaasto saamoto paikhaana is commonly translated as "hygienic latrine," but literally means "health-enhancing latrine" in Bengali. Focus groups and key informants in all in-depth study unions were asked what they considered to be the characteristics of a "hygienic latrine." Definitions were more or less similar across unions. This is a strong indication that messages from intervention programs and public media reached and were comprehended by the population. One exception was in G-Don-2, where people had few comments of any sort, except that such a latrine "looks nice" and there is a hand-washing place somewhere nearby. There were only two unions (G-Don-2 and NG-3) in which any key informants or focus groups said they did not understand the idea.

Numerous characteristics of so-called "hygienic" latrines were mentioned in in-depth interviews, 20 in all. The most frequently mentioned were "no bad smell," "clean/cleaned regularly," and "feces not visible." Others frequently mentioned characteristics were: "has a water seal," "ring-slab made with concrete parts," "no flies or mosquitoes around," "covered pit," and "expensive."

The remark that only expensive types are hygienic latrines was sometimes followed up with a statement such as, "Our [ring-slab direct pit] is not 'hygienic' like the offset types or like the expensive bathrooms of rich people." In several places, people were quite aware that more solvent households had different types of latrines from others. These were assumed to be better in every way, including their health effects.

> *"Haran said, "It is good to set the pit at some distance. It makes the latrine durable and free from foul odor."*
>
> *Salama added that an off-set latrine is hygienic.*
>
> *Shabuddin said, "If the pit is kept free from water, it will not break. It should be covered so that rainwater cannot enter. The sitting place should also be covered with roof. It will help the latrine to last long."*
>
> *Haran said, "If water fills the pit, then flies mosquitoes will be there and diseases will spread."*
>
> *Habiba said, "Some still try to keep the water seal intact because it helps to keep the flies-mosquitoes away. I have latrine with water seal."*"
>
> —Focus group comments (CL-2)

As Table 19 shows, household survey responses were similar, but with less emphasis on cleanliness.

Table 19 shows that the percentages of people saying they "did not know" the characteristics of a "hygienic latrine" were lowest in CLTS and GoB-donor areas, and highest in NGO Non-CLTS areas.

Location of the Latrine in the Homestead Property and Cleanliness[24]

The household latrine is typically located at some distance from the main living area unless there is very limited space in the homestead or the latrine is of high quality and not likely to give off bad smells. It is increasingly common for high-income families to build attached bathrooms with septic tanks. One Hindu family in a crowded settlement (CL-1) mentioned keeping their latrine eight meters away and across the village path opposite their house because of space problems and to protect their 'purity.' The median distance between

[24] Information from this section is derived both from the qualitative interviews and observations as well as the HH questionnaire interviews.

TABLE 19: SURVEY RESPONDENTS' DESCRIPTIONS OF THE CHARACTERISTICS OF A "HYGIENIC" LATRINE, BY PROGRAM APPROACH, MULTIPLE RESPONSES (PERCENTAGES)

Characteristics of "Hygienic" Latrine (Local Perceptions)	Approach to ODF				Total (n = 3,000)
	CLTS (n = 600)	NGO Non-CLTS (n = 540)	GoB Donor (n = 480)	GoB Only (n = 1,380)	
Excreta should not be seen	51.0	55.7	50.4	52.0	**52.2**
No bad odor smelled	70.3	66.5	70.8	64.8	**67.2**
No access for flies and insects	25.0	25.7	20.8	22.4	**23.3**
Water seal closes up the pit opening	7.7	9.1	9.0	9.4	**8.9**
Should be pucca (brick superstructure, concrete parts)	3.5	2.4	6.5	6.4	**5.1**
Should be clean/have brush/harpic (chemical cleaner)	5.3	3.5	7.5	8.6	**6.9**
Should have ring slab/slab/commode	1.3	0.6	2.3	3.5	**2.3**
Soap should be inside	2.5	3.0	5.0	4.9	**4.1**
Should be covered so that purdah is maintained: e.g., has a wall/roof	1.5	0.4	3.1	2.1	**1.8**
Should have adequate water	1.2	1.5	3.3	2.5	**2.2**
Should have a water tank outside	0.5		1.5	4.8	**2.5**
Should have vent pipe	2.0		0.4	1.2	**1.0**
Ash inside (for handwashing)	0.2		0.6	0.7	**0.4**
Should have toilet tissue and sandals	0.2	0.4	1.5	1.2	**0.9**
Don't know	11.3	22.0	15.6	19.3	**17.6**

living space and latrines in survey households is 12–13 meters. Household survey data are presented in Table 20.

The distance from the main living area has been found significantly associated with latrine cleanliness. Cleanliness of the latrine declines as the distance increases. The mean distance between "clean" latrines and the main living rooms is 14 meters, and the mean distance for "unclean" latrines is 18 meters ($p < 0.000$). Among latrines that were attached to the living rooms, 90 percent were found to be clean. Of the latrines located from one to four meters away, 62 percent were clean and 38 percent were unclean.

Responsibility for Routine Maintenance Procedures[25]

The senior female (64 percent), another female household member (22 percent), or a female of another household (8 percent) is usually responsible for regular cleaning and maintenance of a household latrine. Males' involvement is mentioned, but negligible. There was not much variation on this point across subgroups, either by program process, geography, or wealth rank quintile.

TABLE 20: PERCENTAGE DISTANCE BETWEEN CLEAN OR UNCLEAN LATRINE AND MAIN LIVING ROOM

Distance	Clean Latrine (n = 1,191)	Unclean Latrine (n = 1,494)	Total (n = 2,685)
Attached to living room	89.7	10.3	100
1 to 4 meters	61.8	38.2	100
5 to 10 meters	49.4	50.6	100
11 to 20 meters	39.4	60.6	100
21 to 40 meters	34.5	65.5	100
More than 40 meters	31.7	68.3	100
Average Distance	**14 m**	**18 m**	**16 m**

[25] Information for this section comes from qualitative as well as survey data.

> *"Nur said she has to clean her latrine once in a week. She cleans it before taking her daily bath. She sprinkles salt and powdered soap around, sweeps the latrine with a broom, and then rinses the surfaces with water. It takes 15 minutes.*
>
> ***Is there sufficient water to clean the pan and latrine ground throughout the whole year?***
>
> *"During summer the groundwater level goes down, and latrine or soil needs more water to clean because soil also becomes thirsty at that time. In that situation I have a problem with cleaning my latrine, because it needs more water. But we have a seasonal water crisis" [so water is not easy to get at all times of the year].*
>
> ***After cleaning the latrine, how does the cleaner purify herself/himself?***
>
> *Nur said she prefers to clean the latrine before bathing, because it makes her impure and with that impure body God will not accept her prayer. She said urine and feces are impure, just like menstrual blood. So she takes a bath after cleaning the latrine. She also does ceremonial washing according to Islamic customs after defecation to make her body pure, to purify her from feces [i.e., remove pollution caused by contact with feces]."*
>
> —Focus group comments on cleaning and maintenance of a household latrine (NG-3)

The normal procedure for routine cleaning is to rinse the pan with plenty of water, which is poured while sweeping it with a broom or brushing it. Some people use ash, bleaching powder, liquid or powdered detergent, or some other chemical cleanser (Harpic is a common brand name). Hindu households in CL-2 were found to apply cow dung, considered to be a 'purifying' agent, while cleaning. Some may polish up the slab with sand or extra ash during this procedure.

People say that they clean a couple of times a week, or that users themselves just clean the latrine after (or before) they use it. Depending on whether users have clear agreements or not, shared latrines may or may not be regularly cleaned.

Different types of latrines are maintained differently. Routine cleaning was found by the in-depth study team to be more commonly done on ring-slab latrines. These types (which have concrete, plastic, or porcelain pans) are easier to clean than others. Although they too need cleaning, low-cost technologies (e.g., *duli*) were not cleaned as regularly. Some said that these types are considered temporary facilities that will be abandoned eventually. Some expressed reluctance to do much routine cleaning, especially with home-made, low-cost technologies, because water would fill up the pit too quickly.

Considering the importance of water in latrine cleaning, it is not surprising that water availability influences latrine maintenance. More than 10 percent of household survey respondents said that they experience acute seasonal water shortages. These situations may occur in various parts of the country.

Distance between the latrine and the water source used for cleaning is significantly related to latrine cleanliness, as shown by the logistic regression analysis. Table 21 presents information on distances to water sources for the total household sample.

Latrine Maintenance—Pit Emptying

Latrine pits are emptied periodically. This may be done annually, semi-annually, or more frequently, depending on the number of users and the financial capacity of latrine owners. Most pit emptying is done by Sweepers, for whom this is a full-time occupation. In some places people were found to empty out their own latrine pits to save money.

About a half of the latrine-owning households said that they had emptied the pit/tank of the latrine within the last five years. The proportion was almost similar across the approach subgroups, but it was reported less in char and hilly areas. Among those who had had their latrine emptied within the past five years, the majority (55 percent) did it within the past six months, and others mostly did it within the past two years, which comes to an average of the past 9.2 months. About 44 percent of respondents said that the usual interval of emptying their latrine pit/tank was one

TABLE 21: PERCENTAGE DISTANCE BETWEEN CLEAN OR UNCLEAN IMPROVED OR SHARED LATRINE AND WATER SOURCE

	Distance to Water Source			Total (Improved/ Shared Latrines Only) (n = 2,686)
	Within 5 Meters (n = 637)	Between 5 and 10 Meters (n = 554)	More Than 10 Meters (n = 1,495)	
Clean	60.6	42.8	38.0	44.3
Not clean	39.4	57.2	62.0	55.7
Total	**100**	**100**	**100**	**100**

Chi-square test of association: significant (p<.000). This test showed that there is a statistical association between latrine distance to water source and cleanliness, but does not show the strength of the association.

year or less, and 42 percent could not answer this, leaving only 14 percent who estimated the time at more than one year. There is only a slight variation among the approaches (see Table 22).

Emptying Process

Sweepers emptied the pit/tank on payment in about four-fifths (79 percent) of the cases. About 15 percent of households did the emptying work themselves, and another 3 percent covered the filled-up pit with earth. About 3 percent of respondents reported that, during floods, they either opened the slab or made some kind of passage that allows feces to drain out of the pit into water or a ditch. The team learned of this practice late in the research, so that the proportion of households practicing this technique may be higher than statistics indicate. Poor people are likely to adopt this method of pit emptying to save money. This practice may spread in flooded areas if there is no resistance from neighbors or community leaders.

Cost of Pit Emptying Services

For any type of latrine with a pit, the average cost of pit/tank emptying was estimated at Tk.224 (US$3.27) and it ranged between Tk.160 (US$2.34) and Tk.245 (US$3.58). More than a half the respondents spent less than Tk. 200 for emptying and 5 percent spent more than Tk.500 (US$7.30). Average expenditure for the task is more among the rich than the poor.

Availability of Pit Cleaners

A large majority of respondents said that pit emptiers are always (74 percent) or sometimes (21 percent) available. The highest percentage of respondents (17 percent) saying that pit emptiers were not available were found in GoB-Donor subgroups. Looking into the specific unions, they belonged to Rangamati District (G-Do-8), a hilly area (96 percent), Patuakhali District (G-Do-9), which is a flood-prone area (56 percent), and Narsingdi District (NG-3), a "mixed" geographic area (26 percent). In 14 other unions, unavailability as an issue ranged from one to 10 percent of responses.

Pit Emptying Procedures: Qualitative Information

According to pit cleaners, the process (not observed by the study team) consists of removing the slab that covers the

TABLE 22: PERIOD BEFORE THE PIT/TANK WAS EMPTIED LAST, BY APPROACH (PERCENTAGE)

Period	CLTS (n = 248)	Non-CLTS (n = 217)	GoB Donor (n = 177)	GoB Only (n = 588)	Total (n = 1,230)
Up to 6 months	56.0	56.2	56.5	53.2	**54.8**
7 to 12 months	27.0	33.6	31.6	28.9	**29.8**
13 to 24 months	12.5	6.9	9.0	12.1	**10.8**
25 to 36 months	1.2	1.8	1.1	3.2	**2.3**
37 to 48 months	0.8	0.9	1.7	1.7	**1.4**
49 and more months	2.4	0.5	—	0.8	**1.0**
Total Percentage	**100**	**100**	**100**	**100**	**100**
Average Time (Months)	**9.3**	**8.1**	**8.2**	**9.9**	**9.2**

latrine pit, removing pit contents by dipping a bucket into the pit, and dumping the pit contents somewhere. Before contents are removed, some kerosene is poured into the pit to prevent bad smells and kill insects. The latrine owner is expected to pay for the kerosene. Approximately one liter is needed for a five-ring pit.

There are many ways of disposing of pit contents. If space is available, they can be buried near the latrine itself. At times, they are buried in land owned by the family. Sometimes the contents are dumped in open areas. Land belonging to owners who do not reside in the village may be used for this purpose. In some areas, it is considered acceptable to dump latrine contents into canals or rivers. This is not the case in the southern district of Barisal. In one union of Munshiganj District (GO-3), people reported dumping pit contents into a nearby river secretly at night. In some coastal areas, the flood season is seen as an opportunity to wash out latrine contents without anyone needing to pay a pit cleaner. Floodwaters simply inundate latrines and carry away the contents.

Self-Emptying of Pits

Different methods of pit emptying are used. People emptying their own latrines in Naogaon tie a piece of bamboo to the handle of the bucket. The rope used to lower the bucket into the pit is tied to this bamboo piece, rather than to the bucket handle directly. The Naogaon people said that they learned how to empty pits by watching professional pit emptiers at work, and they added the bamboo pole to limit physical contact with the bucket of sludge. People feel that their bodies remain clean and 'pure' because of this, but they put some perfume on their bodies before doing the work to counteract the bad smells.

It is common to pour kerosene and salt, possibly also lime (calcium carbonate) and/or urea fertilizer, into the latrine pit to liquefy contents the day before the job is to be done. Different combinations of liquefying chemicals are used in different places. The next day all the sludge is watery and easy to handle. It is then transferred to another hole or some other dumping place. This process was found to be practiced in two different villages of the union (CL-2). (In another village, people mostly shift the latrine place when the pit fills up, rather than cleaning it.)

In CL-1, pit contents are drained out through a plastic pipe that is put into a temporary hole punched out of a lower ring. After pit contents have drained out, the hole is once again cemented over. Ash and sand are spread on the removed sludge, which is covered over with soil and leaves after it settles and solidifies. Like those in CL-2, people using this pit emptying method feel that it does not harm their purity, as they do not have much direct contact with feces.

In NG-3, where soil is hard and concrete rings are rarely used to line latrine pits, people rarely call pit emptiers, but they do not have to handle latrine pit contents when emptying. Their method of dealing with a filled-up pit is to pour a mixture of salt, lime, and kerosene (total cost Tk.120, or US $1.76) onto the filled-up pan. Overnight, the sludge liquefies and seeps out through the unlined pit walls without anyone needing to dip in a bucket. One woman with a septic system uses this liquefaction method when her tank is completely full, calling a sweeper to empty out the tank afterwards.

In the CL-1 and CL-2 villages, however, a unique community consensus had formed that self-emptying can be done without social penalties. In other places, including a different Hindu village in the same union as the CL-1 village, people were adamant that they would never under any circumstances empty out their own latrine pits because of the danger that fecal 'pollution' poses to their personal 'purity.'

Latrine Damage and Repair

Monsoon rain causes latrine damage in cases where there is no roof, especially if there is no water seal. Slabs break and rings become displaced. Recent cyclones or major storms (Aila, Sidr, Nargis) had severely damaged latrines in G-Do-4, NG-3, and CL-4/D. The reported speed of repair was surprising. Residents of G-Do-4, a union in

Barisal District, were especially careful about rebuilding and repairing latrines; even the poor did this. Some people sold off their fallen trees to raise money for latrine replacement or repair.

> *"If there is any serious natural disaster that destroys . . . our latrine roofs, we repair them immediately. It is impossible that someone would return to open defecation if their latrine broke down rather than repairing it."*
>
> —Rahela (CL-2)

Low-cost technologies are prone to collapse quickly and may be abandoned after rats invade. Examples were found in Gopalganj (NG-4), Naogaon (CL-2), and Lalmonirhat (CL-4/D) districts. Rats reportedly chew through clay rings as well as bamboo pit liners, forcing owners to dig pits in new locations.

Low-quality concrete latrine materials, reported to be an especially big problem in almost all the in-depth study unions, cause sudden breakage, requiring owners to pay for repairs on short notice. This topic is discussed further in Section VI.

Latrines placed near ponds or canal banks, where there is sandy soil and much water, are easily damaged. Examples were found in four study unions (GO-2, G-Do-2, G-Do-3, and GO-5). Water seepage was mentioned as a big problem by ring/slab and users other types of pit latrines, especially in areas where soil is sandy. Latrines in flood-prone areas are very likely to be damaged during the rainy season. Flash floods and landslides, both of which occur in hilly areas, tend to damage superstructures.

Response to such problems was found to vary considerably from place to place. To some extent it depends on money, but several cases of delayed repair were observed among households that were not poor.

These results suggest that sanitation programs need to introduce a variety of latrines appropriate for different soil and climate conditions. Even with improved latrines, one type will not work everywhere. Ease of cleaning and pit emptying also needs to be considered in latrine design. Adult latrine plates adapted to also allow small children to defecate comfortably and safely seem to be important. Finally, the special needs of the elderly and disabled may require adaptations to, for example, children's potties to make them adult-friendly and reduce the adult's embarrassment or even humiliation.

3.3 Summary of Findings for Study Objective No. 1

The preceding discussion addressed whether latrine facilities built pre- and post-ODF declaration are still functioning. This study showed that a very high percentage of sample households (89.5 percent) were indeed found to be using an improved or shared latrine (i.e., a facility that adequately confines feces). According to current definitions, 36 percent of all households had what the Government of Bangladesh considers "hygienic" latrines and 53 percent had "improved" latrines, as defined by the Joint Monitoring Programme of WHO and UNICEF (JMP). Both of the latter definitions exclude some shared latrines, regardless of their structural condition. The low prevalence of households (2.6 percent) that still do not own or share a latrine also demonstrates that by and large the vast majority of households have access to a functioning latrine.

Almost half (45.4 percent) of all household latrines had been installed five or more years earlier. Another 43 percent had changed latrines within the same period—20.2 percent upgrading, 23 percent replacing an older latrine with one of the same type, and 9 percent downgrading.

Only 44 percent of household latrines were found to be clean (i.e., to not have any feces visible on latrine floor, pan, or water-seal, and/or to not leak profusely to open areas).

However, maintenance and other sanitation-related issues need attention moving forward. Typically poor maintenance

Given that only 29 percent of rural households were using any type of improved latrines in 2003, these findings indicate that the achievements of the sanitation campaign have been sustained on the whole.

of public latrines means that OD continues in many places, although it is rarely found at the household level.

The findings presented in Sections 3.1 and 3.2 raise some questions that deserve attention by future researchers. One concerns latrine sharing, which seems to be a necessity in many poor households.

Sharing is a common practice in Bangladesh. It is accepted within the family structure, and there is a relatively high percentage of jointly owned latrines. While it is an accepted practice, likely because social norms have changed to reject OD, that does not mean there are no issues. Households that share are more likely to have unclean toilets. The qualitative analysis did indicate that sharing can force people to OD because of long lines, which can have an effect on the usability of latrines. This is something that programmers may want to consider as a segment of the population to address. Community latrines have been tried in a number of places with varying degrees of success. This study, however, is not able to make recommendations about the conditions under which the community latrine may be a viable option because there was not sufficient attention to this concept.

Three other research issues deserve attention. One is how to make pit latrines comfortable and safe for use by young children. Another issue related to young children's defecation is disposal of their feces. The study team found children's feces used for compost in three different unions. Finally, additional research is required to further understand the effect of latrine sharing on sustainability and health impact.

IV. Perceived Benefits of Being ODF and Using Latrines

This section addresses Study Objective No. 2: *To understand the perceived benefits to households and communities from experiencing open-defecation-free approaches since declaring ODF at least four years ago.*

Section IV reviews people's perceptions about defecation and latrine use, and current thinking about the benefits of living in ODF communities may affect sustained latrine use. How well people remember the sanitation campaign is discussed, along with cultural, social, and political factors supporting or discouraging sustained use of developed types of latrines.

Key Findings

Four and half years after UPs in this study were declared ODF:

- **Households who remembered the ODF campaign are 1.7 times more likely to have an improved or shared latrine** compared to those who did not remember the campaign. One interpretation of this finding is that messages on latrine use conveyed during the campaign left a lasting impression on some households in these unions.
- **Disease prevention, elimination of bad smells, and environmental improvement were identified as the principle benefits of being ODF**. In addition, village honor, social dignity, peace and prestige were also identified as popular benefits. Households value these improvements in their environment, which positively reinforces latrine use.
- **17 percent of households that use a improved or shared latrine reported being dissatisfied with their current place of defecation.** On one hand, this is a positive indicator that most households are satisfied, but on the other 17 percent may be at higher risk of carrying unsanitary behaviors. Those with a waterseal latrine were most satisfied compared to those with a basic dry pit latrine. Households in the poorest wealth quintiles were also the most dissatisfied possibly due to more basic type of latrine used among this population.
- **Households with female heads were 2.5 times more likely to have an improved or shared latrine compared to households headed by males**. A possible explanation for this association is related to the concept of purdah that exists in Muslim and Hindu cultures. A latrine offers women privacy for defecating, urination, and menstruation management, which allows them to adhere to purdah and avoid the shame of being seen by men at these times. This study suggests that the 2003-2006 campaign possibly tapped into latent demand by millions of females to have a latrine for cultural reasons. (See Section 3.1 for analysis)

4.1 Remembering the ODF Campaign

Most people in study unions remember the intense campaigns that swept through their unions around five or more years ago. Every group and almost all key informants interviewed by the in-depth study team had vivid memories of aggressive UP chairmen, members, and village police destroying open latrines, blasting out mobile loudspeaker warnings that open defecation would be punished; and so on. It is commonly understood by now that there is something wrong and probably illegal about defecating outdoors rather than using a latrine.

However, the specific concept of ODF used in this study is not generally familiar to the populations of all study unions; and the memory of having been declared a "100 percent sanitation" union tends to be vague outside of the UP itself, although some adults here and there do speak of s*hotho-bhaag kholaa paikhaana mukto*, which literally means "100 percent open-defecation-free."

> *"Silently we all have agreed that open defecation is a bad habit. It is unclean, and it causes personal and family prestige to suffer. It has stopped, so we no longer need to punish anyone."*
>
> —Focus Group, Barisal District (GO-Don-4)

> *"Setting fire to the [open] latrines scared all the people who were involved in such a practice."*
>
> —Focus Group, Barisal District (GO-Don-4)

Open defecation violates social norms in all areas visited.

The campaigns succeeded in promoting awareness of the ODF idea; with or without the label. This awareness is expressed in various ways. A few mothers recited slogans their children had learned at school. Many interviewees remembered their busy times as committee members learning how to improve family health. National Sanitation Week is celebrated in most places with children's rallies. International Handwashing Day was also celebrated in two unions. Two of the CLTS unions (CL-1, CL-3) had signboards declaring that the place was an ODF zone. Children in one union remembered being present when the signboard was installed. The UP Chairmen in two unions (NG-3 and GO-3) recently have written some slogans on public walls to remind the public of their achievement.

The household survey found that 68 percent of respondents had heard of their union being a place where people use latrines rather than defecating openly. There were significant differences in responses, depending on what type of approach was used in the union. CLTS and GoB-only categories of unions were most likely to know about this. In the case of CLTS, the intervention of a follow-up program had a visible effect (Table 23). The most frequently mentioned sources of information were UP members or officers, meetings or loudspeaker announcements ("miking"), health or NGO workers, and local leaders (Table 24).

Responses differ according to whether a union had a follow-up program or not, with UP people more frequently mentioned in the non-follow-up areas. Meetings, "miking," and posters were more frequently mentioned in follow-up areas.

4.2 Perceived Benefits of Being an ODF Community

A clear result of union-level efforts over the last five years is the widespread agreement that latrine use is important. Open defecation violates social norms in all areas visited. Health improvement (i.e., avoiding the spread of diarrheal disease) is the most frequently mentioned reason for latrine use according to survey respondents and other interviewees alike. Poor people in focus groups and other interviews said that the reduction in health care costs had been a great relief to them. Avoiding environmental pollution, especially bad smells and water pollution, is the second most frequently mentioned benefit of general latrine use.

> *"A "hygienic latrine" is a place where everybody defecates, and which does not spread bad smells. It is a matter of peace and prestige."*
>
> —A seventy-year-old latrine pit digger (NG-3)

The evidence for this is strongest in focus group discussions and other in-depth interviews, which clearly revealed concern for village pride and family dignity. Such matters were mentioned by questionnaire respondents but not as frequently as by focus group participants and key informants. Village cleanliness and the absence of bad smells make visitors feel welcome and raise every resident's status.

"*This union is like a flower garden.*"

—UP Secretary (CL-5/D)

"*A latrine is the beauty of a house.*"

—Focus group discussion (CL-1)

"Pucca *latrine is a pre-condition of gentility.*"

—UP Chairman (GO-1)

Tables 23 and 24 describe survey responses about awareness of the area's ODF status. Respondents in CLTS and GoB-only approach areas are significantly more likely to be aware of this than respondents in other areas. As Table 24 shows, information sources differed somewhat in areas with and without follow-up programs. In those without follow-up programs, the UP chairman, member, or staff (*chowkidar*, or village police) were more likely to be disseminating information about the union's ODF status. "Miking" and public meetings have been the most common ways to get out the news. Other types of information dissemination did not differ much between follow-up and non-follow-up areas.

As Table 23 suggests, people in CLTS and GO-only areas are more likely to know about the ODF campaign goal than people in other areas. Participants in a focus group in Chandpur District said that ODF meant the absence of flies, bad smells, and feces from the village environment.

TABLE 23: PERCENTAGE OF HOUSEHOLDS THAT REMEMBER HEARING ABOUT THEIR AREA OR UNION BEING A PLACE WHERE EVERYONE USES LATRINES

	Heard about ODF		
Approach	Yes (n = 2,044)	No (n = 956)	Total (n = 3,000)
NGO CLTS	84.0	16.0	100
NGO non-CLTS	54.3	45.7	100
GoB donor	54.6	45.4	100
GoB only	71.4	28.6	100
Total	**68.1**	**31.9**	**100**

Chi-square test of association: significant (p<.000)). This test showed that there is a statistical association between approach and hearing about ODF, but does not show the strength of the association.

TABLE 24: PERCENTAGE OF HOUSEHOLDS RECALLING SOURCE OF INFORMATION FOR ODF CAMPAIGN, BY PRESENCE/ABSENCE OF A FOLLOW-UP SANITATION PROGRAM (MULTIPLE RESPONSES)

	Post-ODF Campaign Program		
Source of Information	Follow-up (n = 981)	No Follow-up (n = 1,063)	Total (n = 2,044)
UP chairman/ member/chowkidar/ UNO	48.3	73.6	61.4
Meeting/miking/ poster	51.3	34.5	42.6
NGO/health worker	34.5	25.1	29.6
Local leader/ neighbor	10.5	10.6	10.6
Husband/family member	4.2	2.9	3.5
Others: Bazaar gossip, teacher, student rally, mass media, or drama, club, MP	3.6	6.4	5.0
Don't know/can't remember	1.9	2.2	2.1

In Barisal District, people explained, "All spots in the village are free of open defecation; hanging latrines no longer pollute the waterways; and people understand that open defecation is a type of "social negligence." People in seven other unions made similar types of remarks, indicating that they took pride in the environmental improvements of recent years.

Responses of household survey respondents were similar to those of focus group participants. The most frequently mentioned benefits of having all households use latrines were preventing the spread of disease (especially diarrhea) (57 percent), having a clean environment with fewer bad smells and water pollution (39 percent), and preventing flies or other insects and poultry from spreading germs (34 percent). Responses were generally similar across approaches; and there was no difference in comments from follow-up areas and non-follow-up areas. The large majority of respondents in all

TABLE 25: HOUSEHOLD SURVEY RESPONSES: IMPORTANCE OF ALL HOUSEHOLDS USING LATRINES (PERCENTAGES)

Importance Level	Total (n = 3,000)
Very important	91.9
Important	7.9
Not especially important	0.1
Total	100

types of areas consider it very important for all households to use latrines (Table 25).

4.3 Perceived Social and Health Benefits of Latrine Use

When asked about the personal and family benefits resulting from using latrines, the most frequent comments were related to avoiding 'shame' (*lojja*). A closely related benefit is the convenience of women in *purdah*. A great many people said in one way or another that household latrines enhance women's lives, because women formerly had to avoid elimination until night time hours or take other measures to make sure their bare bodies were not seen by others while they were defecating or urinating.

> *One aged farmer who talked with us explained, "Open latrines and open defecation are bad. They spread germs, diseases, produce various health threatening viruses."*
>
> *A small trader, commented, "Open defecation is the root cause of all diseases."*
>
> *"A disease-free body will give you a long life. This will be ensured by your hygienic latrine," added a farmer."*
>
> *All of them know what ODF is. What it means to them is absence of feces, bad smells, and flies, as well as the absence of diseases. They all agreed the ODF awareness campaign should be extended for more time.*
>
> —Tea stall session (GO-2)

Ensuring one's own health was another frequently mentioned benefit of latrine use. As Table 28 shows, less diarrhea means saving money on health care, another perceived benefit of latrine use. This was mentioned in 7.5 percent of survey households. Numerous stakeholders, key informants, and focus group participants mentioned health benefits of latrine use. Sample statements follow:

> *Water bodies were favorite open defecation places. People could easily use the water to cleanse themselves after defecation. But they also cleaned their kitchen plates and utensils in the same water. These practices caused diarrheal disease. Before 2000, the patient profile in this union health complex showed 500 to 700 cases of diarrhea every month. Some were serious and needed referral to the upazila health complex. There were 10 to 12 deaths every year related to diarrhea. Now there are only 50 diarrhea cases, and none is serious. . . . I have worked in this union for 10 years. . . . My supervising officer keeps me here to manage communicable diseases, including waterborne diseases.*
>
> —Union Health Officer (GO-5)

Having a latrine is increasingly essential to family respectability in rural areas. The in-depth team heard numerous reports of people checking prospective in-laws' latrines (or being checked) before agreeing to marriage arrangements. It is generally assumed in many places that having a good household latrine will increase the chances of one's children marrying into good, respectable families; and conversely, not having one will create social problems (i.e., relatives' refusing to visit or feeling uncomfortable when they do visit).

> *In Muslim religion it is a strict rule that if a woman goes for open defecation and people see her, it is shameful.*
>
> —Woman 1 (GO-2)

> *It is not only a shame. It is a sin for women.*
>
> —Woman 2 (GO-2)

> *And according to religious rules, women have more sin than men. If a latrine has no walls, men can see women, and that is a sin too. Men can sit anywhere, but women can't. In every step of work, for women to violate religious rules is sinful.*
>
> —Woman 3 (GO-2)

People make a special effort to provide hospitality to visiting relatives, especially in-laws. Among other things, this means offering the use of a good latrine. If people do not have their own facilities, they may arrange for visitors to use neighbors' latrines, although there is some embarrassment ('shame') associated with having to do this. According to a young housewife in Barisal District (GO-Don-4), social pressure will ensure that people continue to use latrines. As she put it, "People hate a family that does not have a latrine."

A great many people said in one way or another that household latrines enhance women's lives, because women—especially the majority group of Muslim women and mature girls trying to maintain *purdah*—formerly had to avoid elimination until night time hours to make sure their bare bodies were not seen by others while they were defecating or urinating. The constraints of *purdah* help to explain women's strong support of household latrines. Local sanitation campaign leaders understood this well and used this to enlist women in campaign efforts.

> *"Women agreed that they cannot go outside for defecation. Men go to different places to work, and they can defecate outside whenever they need to. It is primarily a women's headache to make proper toilets/latrines for the family. One woman said, "To me the latrine issue is most important. I think about where I will go to the toilet after eating any food." Women are responsible for maintaining latrines. Men do the purchasing. Both men and women work together in installation of latrines in poor families."*
>
> —Focus Group Discussion in (G-Don-4)

Other positive benefits of latrine use were said to be that it has religious value by enhancing 'purity' and cleanliness, and that it reduces anxiety and generally improves living conditions.

Some negative features of latrines also were mentioned in group discussions and other types of interviews. In three different unions, the team heard adults and children both tell that ghosts may lurk in latrines at night and attack people. In at least three unions, someone said that the bad smells of poorly maintained latrines made them utterly disgusting and impossible to use. One child mentioned fear of snakes, and another who had once slipped in a latrine was afraid to use one.

Household survey respondents with latrines were asked about social, health, and other benefits of latrine use for them and their families. Responses are summarized in Tables 26 and 27.

4.4 Satisfaction with Current Defecation Place

Survey respondents using an improved or shared latrine were asked whether they were satisfied with their current arrangement. As Table 28 shows, the better the quality of the latrine, the more likely users are to express satisfaction. Better quality in this sense means more durable types.

Households with latrines that were observed to be "clean" by this study's criteria are significantly more likely to be satisfied with their place of defecation than users of latrines the team designated as "unclean." (See Figure 13.) Figures 14 and 15 show household satisfaction by both

TABLE 26: TOP FIVE REPORTED PERCEIVED SOCIAL BENEFITS OF LATRINE USE (MULTIPLE RESPONSES), PERCENTAGES BY APPROACH

Social Benefits	CLTS	Non-CLTS	GoB Donor	GoB Only	Total (n)
Convenient/nobody can see/got relief from shame	34.9	30.4	19.4	30.6	**29.9 (415)**
Less pollution of environment/feces not seen on the street	18.9	29.7	49.5	27.6	**29.3 (407)**
Live with dignity/nobody can say bad things about us	27.2	15.2	14.1	14.6	**17.5 (243)**
Social prestige enhanced/people value	19.2	7.2	14.6	15.6	**14.7 (204)**
No bad smell/no air pollution	10.3	12.5	26.2	12.7	**14.1 (196)**

TABLE 27: TOP FIVE REPORTED PERCEIVED HEALTH BENEFITS OF HAVING A HOUSEHOLD LATRINE (MULTIPLE RESPONSES), PERCENTAGES BY APPROACH

Health Benefits	CLTS	Non-CLTS	GoB Donor	GoB Only	Total (n)
No/fewer diarrhea episodes/less disease	59.4	77.2	90.5	64.3	**69.4 (1,003)**
Germs do not spread	16.6	25.1	9.0	28.0	**22.2 (321)**
No bad smell/less air pollution	9.1	10.3	7.6	15.8	**12.1 (175)**
Fewer diseases, save money on health care	12.8	1.5	6.2	7.8	**7.5 (109)**
Fewer mosquitoes and flies/flies do not sit on food	10.9	3.4	9.5	5.5	**6.9 (100)**

TABLE 28: PERCENTAGE OF HOUSEHOLDS SATISFIED WITH CURRENT DEFECATION PLACE, BY LATRINE TYPE

Category of Improved/ Shared Latrine Used	Current Defecation Place: Satisfaction Level			
	Satisfied (n = 1,103)	Moderately Satisfied (n = 957)	Unsatisfied (n = 427)	Total (n = 2,487)
With no cover, no water seal	26.9	48.9	24.2	**100**
With cover or polyethylene flap	37.0	45.2	17.8	**100**
With intact water seal	65.7	25.5	8.9	**100**
Total	**44.4**	**38.5**	**17.2**	**100**

"clean/unclean" latrine status and wealth rank of the survey respondent. While poor people have more "unclean" latrines than others; poor people like everyone else, like their latrines more if they are kept in a condition that the researchers defined as "clean." A related finding is that respondents who share latrines with other households also are significantly less likely to be satisfied with their defecation arrangement than those who do not share. This last finding is expected because sharing was almost always due to financial or spatial constraints rather than preference (see Section 3.2.1).

4.5 Pockets of Dissent

The study team found people in the majority of in-depth study unions to be generally enthusiastic about the idea of everyone giving up OD. The in-depth study team found

FIGURE 13: PERCENTAGE OF HOUSEHOLDS SATISFIED WITH CURRENT LATRINE—"CLEAN" VS. "UNCLEAN" (n = 2,487)

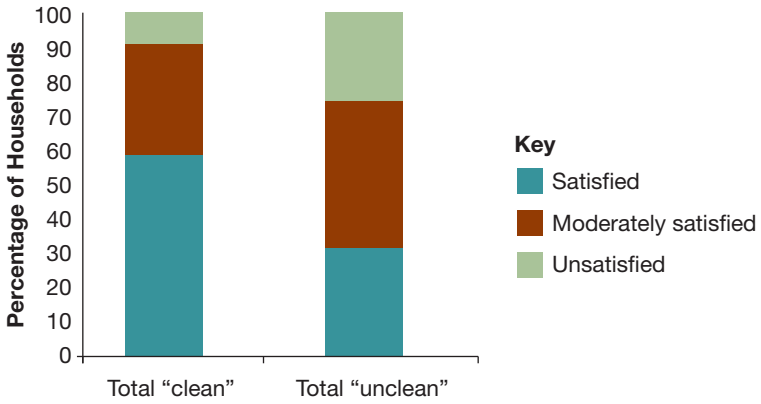
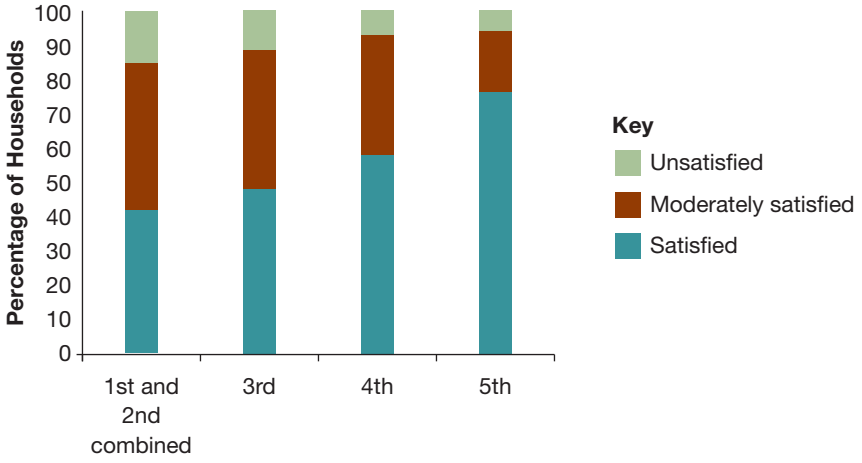


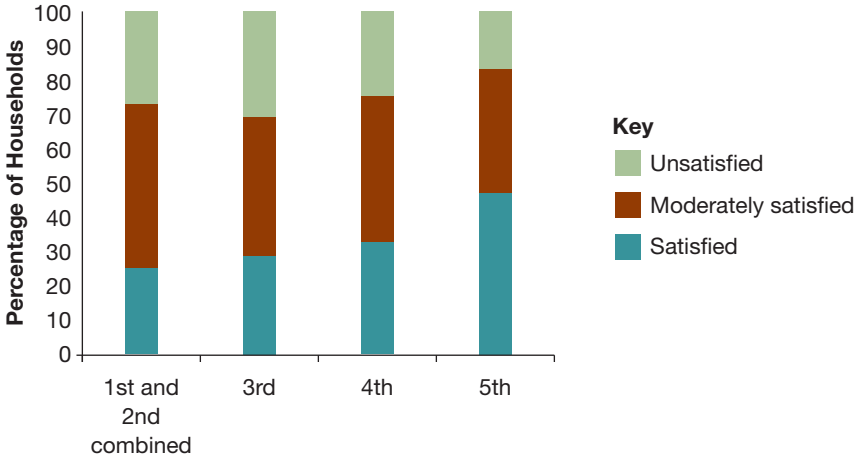
FIGURE 14: PERCENTAGE OF HOUSEHOLDS SATISFIED WITH CLEAN LATRINE BY WEALTH QUINTILE (n = 2,487)



highly positive comments among FGD participants and key informants in nine of the unions visited. However, the team found pockets of dissent in five in-depth study unions, including some in which the majority opinion was generally positive. For example, family groups or focus groups expressed strong doubts about the value of giving up OD, and there were places where the practice continued more or less unabated. These views were found in specific villages, neighborhoods, or homesteads only; not throughout the unions.

Interviewees in six unions—comprising two CLTS, three non-CLTS NGO, and one GoB-Donor—were found to lean toward negative attitudes; at least about the situation

FIGURE 15: PERCENTAGE OF HOUSEHOLDS SATISFIED WITH UNCLEAN LATRINE BY WEALTH QUINTILE (n = 2,487)



in their own unions. Their reasons had more to do with local social and leadership dynamics than with any health concerns. Some were angry about not getting handouts, or they did not trust the elected union leaders. One group did not feel the sanitation promotion campaign had anything to do with them, and there were others who obviously had not participated five years back.

Four factors account for weak public acceptance of the ODF idea:

- Some unions have extreme social divisions between ethnic and/or social class groups. Indigenous people in one union, for example, do not appear to have been influenced by any sanitation promotion program; nor has a village peopled by newly arrived settlers. In a Sylhet District union (GoB-4), an area with many luxurious homes, there are a number of "colonies" where renters live in slum-like conditions and do not participate in any local development activities. Their sanitation is deplorable, but there is no interest on the part of any local agency in working with them, as they are considered to be temporary residents, even though some have been there for 20 years or more.
- Insecure land tenure is an important concern in one Chapai-Nawabganj union (CL-3), where many people live on government-owned (*khaash*) land and are reluctant to invest in home improvements, lest they be evicted someday. Indigenous people (*Santals*) in the same union have a similar problem. They do not have secure rights to the land they occupy; and they reportedly are reluctant to become too involved with (or dependent on) UP leaders. One whole village in a Bogra District union (NG-1) is disputed territory. A neighboring municipality is trying to annex it against the wishes of area residents and the UP Chairman. The ambiguity has gone on for some time, with the result that the union distributes benefits of all sorts without full consistency or commitment. In this case it is the union that is insecure.
- Certain people are less than enthusiastic about ODF due to cynicism about local leaders. In three places villagers spoke about chairmen or others demanding bribes, which they could not pay, in exchange for getting "free" latrine sets. It is not clear whether this is true or not, but it did come up in discussions of ODF.
- Practical problems may reduce people's confidence in the viability of latrine technology. In CL-3 and CL-2, for example, water is quite scarce in the dry season, making the pour-flush pit latrine burdensome for water collectors. In a Narsingdi District union, the soil is so hard that many poor families can afford neither time nor money to dig latrine pits. Deep floods coming every year to sections of study unions in Laksmipur and Noakhali districts make latrine pits overflow and defeat the already weak motivation of some local households to install latrines. In this low-lying area, all homestead land must be built up artificially with extra earth that is purchased and brought in from outside locations, which makes it quite expensive. Such practical problems are overcome in many places with strongly positive attitudes, so it is clear that in themselves they are not the main reasons why people reject latrine use in favor of continuing OD.

4.6 Sanitation Experiences of Poor Households

Unlike families with ample resources, poor families have always had to struggle to purchase and maintain latrines. They are likely to share latrines with other households. With weak social support networks and relatively small households, they are vulnerable to major setbacks when illness or disability hits. Many said that they would like a latrine, but could not even afford enough food or the school fees for their children.

However, a number of poorer people gave sanitation some priority and managed somehow to purchase, improve, or share a latrine, even if it was just one concrete ring and a slab. They had various reasons for making this change. For some, it was fear of jail or other punishment by the UP. For others, it was a marriage or a wish to improve the family's social status and "dignity" in relation to better-off neighbors. Some families chose to install a latrine rather than fixing up their house, producing situations of very expensive latrines near very modest homes.

One owner of a well-built village bathroom, complete with overhead water tank and washbasin, in CL-1, for example, has a house with a thatched roof. Some poor people have made latrine changes recently, as equipment they received during the campaign five years ago broke down, or pits filled up.

The recent Sidr and Aila cyclones inflicted serious damage in the coastal belt areas. It is important to note that poor people hit by these storms gave high priority to rebuilding latrines, all of which were destroyed.

> *"SIDR- and Aila-type disasters are increasing. They destroy our poor people's houses and assets. They completely tear apart their latrines. Sidr broke many latrines in our village this time. I don't have a list, but it could be at least 50. All these poor families rebuilt their latrines. None got support from either government or NGOs to do this. So, they reverted back to simpler types of latrines. People who had had ring-slab latrines with water seals set up simple pits with slabs on top of them."*
>
> —A Village Policeman (GO-Don-4)

Several poor women interviewed by the in-depth team took the initiative to build their own household latrines, digging the pits themselves, etc. (See Case Studies 1 and 2.) Two women mixed their own concrete. One UP Chairman has set up a latrine production center with an all-female staff of masons who go out to homesteads and install the latrines that they manufacture.

BOX 4: POOR WOMEN MAKE THEIR OWN LATRINE PARTS

Hafsa, a poor woman aged 40 who lives in Barisal District (GO-Do-4), has struggled hard to overcome the stresses of her impoverished life. Her husband is a wage laborer, and she has four daughters, three of whom are married and living elsewhere. She worked in a rice mill in Banaripara town for six years, after which she went to live in Dhaka; here her daughters work in garment factories. She returned to her home village two years ago. She invested Tk. 20,000 ($292) in a shop that she managed herself. The SIDR cyclone threw trees onto her house and destroyed it. After that she had no kitchen and no latrine, so she used her brother's latrine for a while. As she is "not a person who depends on others," she quickly started doing repairs. She borrowed Tk. 22,000 ($321) to set up a new shop. Then she needed a new latrine. "I observed that most of the rings and slabs they sell in the market were of poor quality," she said. "So I told my husband to get some metal rods and cement for making a slab. We bought two concrete rings and reinforced them further with the metal rods. My husband, my daughter, and I worked together to dig the pit. We made it nice and round, and put in our sturdy concrete parts. Now our latrine is nice and durable. We have used it for a year without any problems."

Safeya, a poor woman living in Narsingdi District, took it upon herself to build a latrine after her husband left to work in Malaysia. Her brother-in-law asked their UP Member to help with some latrine parts, but he did not respond promptly. So she bought 2 kg. of cement for Tk. 100 ($1.46) from a nearby bazaar and got some sand from her father's house, which is near a river where suitable sand is easily available. She knew it was the type of sand used in road construction. After collecting the cement and sand, she mixed them with water and created a new sitting slab to use in her latrine. As the soil is very hard, no rings were needed. 'Most of our villagers used to defecate in open places, but I cannot do this, because it is a great sin according to Islam'. To avoid sin and to maintain the purity of her body and soul, she installed this latrine. She knows it is not hygienic, but it was the best she could manage with all the other crises affecting her life.

4.7 Purity, Pollution, and Purdah: The Cultural Context of Sanitation Change in Bangladesh

The sanitation campaign of 2003-2006 appealed to people's strong feelings and cultural values related to defecation. The appeal was made consciously by some intervention programs and less directly by others. Three deeply ingrained cultural principles influenced much of the change in defecation practice covered in this study. They are 'purity,' 'pollution,' and *purdah*. Like people elsewhere on the South Asian subcontinent, virtually all Bangladeshis (especially those whose mother tongue is Bengali) are mindful of these principles as they go about their day-to-day lives. Hindus and Muslims both attend to these concerns, though in somewhat different ways, as do Buddhists living in the southeastern Chittagong Hill Tracts.

'Purity' (*pobitro* or *paak*) is a physical and spiritual state of wholeness, order, safety, and peace of mind. It may be related to cleanliness, but it is an entirely different notion, one with extremely important social and spiritual implications. Maintaining this state requires certain physical and mental routines, some of which relate to defecation and urination. Purity is a requirement for offering Muslim prayer or Hindu *puja*.

'Pollution' (*aapobitro* or *naapaak*) is the opposite of 'purity.' It is a disturbance of order, integrity, and wholeness. If not removed, it can cause many kinds of social and spiritual problems. It is considered to be contagious, so one must avoid contact with polluting substances or people in a polluted state. One must remove polluting substances from one's own body in a careful manner. Certain human excretions are considered to be dangerously polluting: especially feces, menstrual blood, sexual fluids, urine, and saliva. Water is the chief purifying agent, so bathing or washing with water can remove most types of impurity. People who have the traditional family occupation of handling feces, namely Hindu Sweeper (Methor) caste members, are rebuked and avoided by others. These people continue to be regarded as "untouchables" by Muslims and Hindus alike in Bangladesh. This has had programmatic implications for community organizing in South Asia, not only in sanitation.

"If people defecate openly and insects that sit on feces also alight on food, you are in effect eating your neighbor's feces." This message was established in water and sanitation programs during the 1990s and integrated into games, stories, and educational exercises by many organizations during subsequent decades. The CLTS approach emphasizes this message. In the South Asian context it has special meanings and emotional power because of the importance of the 'purity/pollution' principle in people's lives.

Another key cultural principle, *purdah*, is based on an ideal of feminine modesty and separation between the sexes. *Purdah* is a system of restrictions on visual and social contact between males and females of certain social categories. It takes various forms in different segments of the population,

BOX 5: A FARMER IS COMPELLED BY REVULSION TO STOP DEFECATING OPENLY

A poor sharecropper in Bogra District (Union NG-1) had an experience that compelled him to have a latrine in 2004. All those around his homestead, including him, were defecating on agricultural land up to that time. One day he was weeding his croplands in the morning. Suddenly he noticed a feces smell coming from his hand. He saw some fresh, "raw feces" (*kacca paikhaanaa,* also called *guu*) under his fingernails. The feces went further into his nails when he tried to clean them. This was very disturbing to him. He stopped work and went home to bathe. While bathing, he made up his mind to have latrine at any cost. This hateful (*ghriina*) thing he remembered for fifteen days whenever he took meals; and as a consequence he ate very little. After discussions among themselves, the family decided to install a high-quality latrine that would last a long time. At last he built a "hygienic latrine" (*shaasto saamoto paikhaanaa*) by selling two cows. He set up an offset latrine with five rings and a brick (*pucca*) superstructure at a cost of Tk. 14,000, an extremely high cost relative to his meager income.

Bogra District (NG-1)

BOX 6: A MAN AVOIDS USING THE SAME LATRINE AS HIS DAUGHTERS-IN-LAW

One man, aged 50, is a timber trader and always moves around the villages and union. His home is just half a kilometer southwest of the union's main bazaar. He has three sons. Two of them are married. His elder son lives in separate house with four family members. They and the five other *bari* members, including the respondent, use one latrine, which was constructed four years back by his elder son. Prior to construction of this latrine, they used to defecate in the nearby bushes. The latrine is an offset one and the pit is "12 hands" [approximately 18 feet] deep. His two sons dug the hole and purchased one ring and one slab from local bazaar at a cost of Tk. 400 ($5.84).

When asked, "Where do you defecate?" he replied that he has not used the latrine even two or three times ever since it was installed because he did not like to embarrass his daughters-in-law or himself. They are to clean their menstrual blood. Rather he feels comfortable to defecate in the bushes. Today, he found another person defecating there. Around 20 people (all are men) defecate outside. When he roams around for his timber business, he defecates in nearby bushes and has not faced any obstacle or resistance to do it. But the regular decrease in the number of bushes might make open defecation difficult in the future.

(NG-3)

and there are regional differences in practice. *Purdah* can be observed very strictly (e.g., by full veiling of a Muslim woman, or using the sari to hide the heads and faces of either Muslim or Hindu women). It also can be observed through decently restrained behavior in the presence of outside men and not going out much into the public sphere.

In brief, *purdah* ideas require that certain males not see the bodies of women. *Purdah* norms affect life within an extended family, limiting contact between some men (especially outsiders and elders) and some women. They also mandate that women travel away from home as little as possible. Women do travel away from home, of course, but they do so with careful attention to *purdah*, as it is essential to their personal dignity and family honor (*sommaan* or *morjaadaa*). Violation of *purdah* norms produces the opposite of dignity, namely 'shame' (*lojja*).

These cultural principles affect defecation behavior in numerous ways. Purity/pollution concerns are expressed in the following actions:

- Feces/latrines are kept at a distance from living spaces or used spaces. Preferred open defecation spaces are at property boundaries, edges of homesteads, near water bodies (river/canal banks), railroad tracks, path edges (not in paths).
- The presence or smell of others' feces causes anxiety and quarreling. Household latrines cause problems if they are not kept clean.
- Urine and feces are deposited in different places in many homes. It is common in Hindu households, where urine is considered somewhat less polluting than feces, to find a small urinal near to the kitchen, while the latrine is farther away from bedrooms and cooking areas. Muslims are less likely to use such close-in household urinals, as they consider urine to be as polluting as feces.
- People are careful to purify themselves somehow after defecation, usually by washing the anus.
- Contact with others' feces, except for those of young children, requires a bath or some other kind of major purification procedure.
- Household members responsible for routine maintenance try to clean toilets before the daily bath. Pit emptiers bathe carefully after doing their day's work. One pit cleaner (emptier) in G-Do-4 said he does not touch his children until he has bathed. Another bathes and then conducts a daily prayer (*puja*) to restore his purity each night after work.

FIGURE 16: CLAY BALLS (KULUB/KULUF) FOR CLEANING AFTER ELIMINATION (GO-DON-4)

- Observant Muslims are taught two things: avoid orienting latrines in an east-west direction, so as not to face Mecca while defecating; and cleanse the anus and genitals with clay balls *(dhila-kulub/kuluf),* brick pieces, or toilet paper, to make sure that all traces of feces and urine are removed from the body after elimination. See Figure16.

4.8 Gender Considerations

Purdah norms influence the behavior of women more than of men:

- As previously mentioned, women choose times and places carefully when they defecate outdoors: very early morning, late evening, and sheltered locations near their homesteads. Before the widespread use of household latrines, it was common for women to force themselves not to defecate except at times when privacy could be ensured.
- Women traveling far from home use household latrines wherever they go. "Unknown families will never refuse a woman's request to use their toilet," as one Laksmipur District (G-Do-3) woman said. Women in many other unions said the same thing.
- Women laborers working in fields or as maids use others' latrines, not open spaces, if at all possible.
- Women without household latrines may use others' latrines in daytime but go outdoors at night. In one Chandpur District union (G-Don-2) women reportedly bury their feces with sand when they defecate outside.

Indoor toilets promote women's social well-being and thus provide a certain type of "freedom" and comfort not hitherto available. Public latrines and community latrines, however, are not likely be used by large numbers of women in any plains area of Bangladesh if they have any other, more private options.

The introduction of widespread household latrine use has been adapted to pre-existing customs and cultural norms. Some households with two ("inside/outside") latrines were found in villages of Lalmonirhat, Noakhali, Laksmipur, and Barisal Districts, although the percentage of such arrangements is small. In the southeastern part of the country, males use the outside latrines and females use inside latrines. In the southern area closely related men and women both use the inside latrine.

A comment in a G-Don-2 FGD showed that having separate latrines helps avoid awkward encounters between men and women who should not see each other or communicate. One woman said, "I should not meet my husband's father, or his elder brother, or his uncle." In the neighboring Laksmipur District, key informants and focus group participants said that it was important for fathers-in-law to avoid using 'inside' latrines lest they have awkward encounters with their daughters-in-law. Men were said also to avoid using the same latrines as their mothers-in-law. Such statements refer to intra-household avoidance behavior patterns that make up a special form of purdah observed by both Hindus and Muslims in the northern parts of the South Asian subcontinent.

> *"So, the times are changing. When we were young, we girls went out to the bushes or jungle to defecate, and men used to run away. But now, if a young woman goes out, men definitely will follow her to watch. Now we worry about men's eyes and snakes."*
>
> —Elderly Woman (NG-3)

> *A woman of the same union said, "Fifteen years ago, I didn't have a latrine. Men defecated in the bushes, and*

> *we installed a simple, unlined pit latrine for the women of our house to use. We feared men's eyes, and we needed to protect our* purdah, *our modesty (*shorom*). Later we built a clay wall around that pit. Eventually we set up a brick wall and put in a concrete ring-slab latrine.*
>
> —Woman (NG-3)

4.9 Summary of Findings for Study Objective No. 2

The purpose of Section IV has been to understand the perceived benefits to households and communities from experiencing open-defecation-free approaches since declaring ODF at least four years earlier.

Numerous perceived benefits of universal latrine use were mentioned: social convenience and dignity as well as less disease, especially less diarrheal disease. In terms of knowledge that their locality is ODF and no one defecates in public, people in CLTS areas and GoB-only areas were more aware than those in locations covered by other approaches; but the great majority of interviewees in all areas considered latrine use to be very important. Some negative views in specific pockets serve as useful reminders that the leadership and economic context will influence people's receptivity to new ideas. Poor people's efforts to install and repair latrines, even in cyclone-affected areas, demonstrate remarkably high levels of motivation and skill related to use of improved latrines, considering their extreme economic constraints; but not all can manage. Deeply ingrained feelings about purity and pollution formed an essential framework for changes in defecation habits. Women's needs to maintain *purdah* standards motivated many to start using household latrines.

Individuals and rural society were profoundly changed by the sanitation campaign. The next section will discuss the institutional aspect of this transformation and factors likely to influence future changes.

V. Institutional and Community Support for Sustainability

The issues discussed in this section relate to Study Objective No. 3: *To understand whether programmatic inputs from local and national governments and civil society sanitation programs have been sustained to support communities to maintain their ODF status and help the poor to obtain access to latrines.*

This section specifically discusses past and present institutional efforts to promote sanitation improvements in study unions.

Key Findings

Four and half years after UPs in this study were declared ODF:

- **Approximately two-thirds of UP chairmen were found still to be trying to promote sanitation changes in their unions,** but formal monitoring had ceased. Funds from the Ministry's (MLGRDC) block allocations to unions were being used to fund sanitation activities in 12 out of 17 unions for which information was available. The national policy and strategy for sanitation that was put in place between 2003–2005 continue to offer guidance to local governments to take action on sanitation.
- **Households who reported having been exposed to a follow-up program were 1.8 times more likely to have an improved or shared latrine compared to those who did not receive a follow-up program.** Additionally, households that were visited by someone who advised them on latrine use were 1.4 times more likely to have an improved or shared latrine compared to those who did not report receiving a visit (see Section 3.1 for analysis). This suggests that ongoing programs that reinforce latrine use may have a positive effect on sustained behaviors.
- **Advocacy from the central government down to the local governments, led by the Minister of Local Government, Rural Development and Cooperatives, was a key factor in unifying the country around sanitation**. The national goal of 100 percent sanitation coverage coupled with a clear policy and strategy, and leadership at the local government level were instrumental to scaling up rural sanitation. While the intensity of the campaign is over, the guidance and direction for local government remains in place.
- **Local government funds for latrine parts went to households in all wealth quintiles not just the poorest,** suggesting that the poor are not adequately targeted and possibly improved targeting mechanisms are needed.

5.1 Local Sanitation Histories and Campaigns

The following statements refer to union-level ODF campaigns conducted four to five years ago. They left a strong impression on people who live in study unions, especially UP chairmen, members, and other stakeholders.

> *"This was a big social revolution (biplob). We needed a strong dictator."*
>
> —UP chairman (GO-Don-4)

> *"The ODF campaign was a "revolution" that made our villages free of bad smells. City people didn't want to visit us before because of the bad smells."*
>
> —UP member (NG-3)

> *"It was a genuine, collective "awakening" (jagaron)."*
>
> —UP Secretary (GO-2)

> *"It's been "revolutionary." It was like our 1971 independence struggle."*
>
> —UP Secretary (CL-5/D)

> *"We did a revolution like 1971. The sanitation revolution and '71 revolution had the same character."*
>
> —UP Chairman (CL-2)

5.1.1 Early History of Sanitation Promotion

In the in-depth study unions, some people reminisced about the first latrines ever used in their villages. A key

informant in one Naogaon District union (CL-2) said that their subdistrict (Manda Upazila) has a long history of sanitation promotion by local and national NGOs, including the Grameen Bank. Some study unions have experienced more than one major "sanitation campaign" during the past 30 years.

In unions with this influence, there has been less distribution of latrine parts than in other places. The two approaches—one emphasizing "hardware" and the other "software"—were combined in different ways in different places during the recent ODF campaigns in study unions.

5.1.2 The ODF Campaign

The ODF campaign of 2003–2006 was quite different from previous campaigns, which were led mainly by NGOs, UNICEF and DPHE. In the most recent campaign, the Government of Bangladesh worked closely with representatives of national NGOs to shape public messages and develop outreach strategies and training. The Government disseminated long-tested NGO sanitation promotion techniques and ideas directly to UP chairmen. The national government gave this campaign high priority, and the response from elite groups, government workers, civil society organizations, school children, and others was whole-hearted. Our queries at the union level verified that this broad-based effort engaged and stimulated people at all levels of society.

> "*Sanitation is a global issue and global decisions are needed to make it happen. By 2015, all poor countries should meet the MDG goals. After knowing about the global decision, local government started working on sanitation in 2002 in Bangladesh. The government recognized the 100 percent covered unions. In this union we started earlier than that, though, around 2000.*
>
> *[The CLTS NGO] helped a lot in making our achievement possible. They started on a pilot basis in small areas, sharing their insights with us and extending the program gradually. In nine wards there are 54 watsan committees. They were not all set up at the same time. The experience of one place was transferred to another place, and so on. Public representatives had information but no practice. Sanitation is only one of ten mandatory works we must attend to.*"
>
> —UP Chairman in a Chittagong District union (CL-1), where CARE-SAFER worked in the 1990s

During the 2003–2006 national campaign, several committees and task forces were established at all levels of government, from the national center down to the union ward, all of which reportedly performed their government-prescribed tasks. These committees now exist in name only. Two types of union-level stakeholders participated: institutions such as local councils, schools, and clubs; and individual volunteers.

Children served as watchdogs in CLTS areas but also in other types of areas, such as such as NG-3, in ODF campaigns. In the Social Mobilization for Sanitation campaign during the 1980s and 1990s school children had been designated as leaders, finding open latrines targeted for destruction by village police.

Some of the intervention programs have given special emphasis to children's practices. Children are especially aware in five CLTS unions: CL-1, CL-2, CL-3, CL-4/D, and CL-5/D. Communication materials (e.g., wall-writings, leaflets, and posters) were provided to communities in most unions. Children read and remembered their messages. Textbooks also educate them about hygiene principles. The words they recognize and frequently repeat are, "no open defecation" (*khola paikhaana-na*) and "no outdoor defecation" (*baire paikhaana-na*).

Children also have learned from TV programs. Ads describe illnesses that follow OD and emphasize social shame. The "Meena" cartoon series is quite popular. Meena knows how to protect herself from diarrhea: by handwashing and staying clean. She also tells about how to prepare homemade oral saline solution. *Porishkaar porichhonota* (maintaining cleanliness) through personal hygiene is the main message.

Even before Meena, there was a primary school curriculum introducing hygiene concepts. The concept of *kaabiyaa* (sanitation and ways that a student can become a good citizen) is promoted in schools. Parents and neighbors tell children about hygiene and latrine use, and vice-versa.

> *If Master Nabi had not forced us, we never would have installed our latrines.*
>
> —Resident (CL-2)

> *I didn't get any formal training on latrine installation. I got this knowledge from my neighbor. He explained to me about digging a pit and covering it with a slab.*
>
> —Resident (CL-2)

Community leaders, described as "catalysts" in CLTS working areas, supported by sanitation program staff often were people who already commanded respect among their neighbors. The efforts of program staff served to expand their influence beyond their immediate villages. Some with exceptional powers of persuasion were encouraged to visit other places, both to learn and to teach about the importance of giving up open defecation.

There was a difference in the ways that the Campaign was conducted in CLTS and Non-CLTS areas. GoB-only areas especially emphasized/emphasize distribution of latrine parts and strict rules against open defecation. CLTS unions did less latrine distribution and gave more attention to promoting self-help and innovation of low-cost technologies.

Common activities in all types of intervention areas were:

- a general meeting at the subdistrict (upazila), followed by a union-level meeting;
- formation of various taskforces and committees;
- a survey of present sanitation status in each ward by hired NGOs or task force members;
- rallies, posters, leaflets provided by the central government, and "miking" (loudspeaker announcements from mobile units) to sensitize and mobilize rural people; and
- courtyard meetings.

In addition:

- Communities were sensitized and mobilized.
- Imams, schoolteachers, and students were especially active. Imams disseminated campaign messages in Friday sermons (*khutba*) and on other occasions.

FIGURE 17: AWARD GIVEN TO OPEN DEFECATION FREE UNION PARISHADS

- Village police (*chowkidars*) were said to have played a strong role on behalf of the UP in some, but not all unions.
- Notices were served saying that anyone found to practice open defecation would be punished.
- If NGOs were involved, they sometimes facilitated meetings of the mandated union- and ward-level committees and task forces.
- Final status surveys were required by the central government at the end of the campaigns, just before the "100 percent" declarations in all unions. An upazila task force crosschecked and verified these surveys. (See Figure 17)
- Latrine sets were distributed either free of cost or at subsidized prices in some, but not all unions, depending on the approach taken. Most were three-rings and one slab, but one-ring-only sets also were given in some rushed situations.
- Upazila-level monitoring and coordination was important in all places, along with its disbursement of funds.

> *Before the ODF campaign, we went house-to-house to check on who was using latrines and who was not. After the campaign, people asked us to make reports.*
>
> —Village Policeman (GO-Don-4)

In unions where the CLTS approach was followed, the ODF campaign strategy had some special characteristics in addition to the above-mentioned activities:

- It started with pilot efforts in smaller regions and then expanded to full unions.
- NGOs initiated activities and then engaged the UP.
- Social volunteers, including local leaders, and children were organized to serve as observers, or watchdogs, to stop open defecation.
- Low-cost technologies were introduced in order to encourage latrine use.
- The CLTS unions tried to use a "bottom-up," grassroots approach to social change. They provided training for UP leaders, officials, and community leaders.
- The CLTS area chairmen appear to be more knowledgeable about sanitation than those whose ODF campaigns were conducted under other auspices. They got many training opportunities. One UP chairman (in CL-2) spoke like an NGO activist, arguing for empowerment of the poor by building self-sufficiency instead of giving free things, showing people how to help themselves, and so on. In this union there has indeed been much less distribution of free latrine parts than in others. Changes in the mindset of these chairmen are striking.
- Differences between the two contrasting approaches are clear but not absolute. There was much exchange of ideas and cross-influence among unions during the 2004–2006 ODF campaign period.

5.1.1 The Vital Role of the Subdistrict Administration in ODF Campaigns and Later

As the representative of the central government at the subdistrict (upazila) level, the UNO's role was (and still is) to coordinate between the Local Government Ministry and multiple local or regional stakeholders (i.e., subdistrict governmental officers of various departments, UP chairmen, representatives of volunteer groups, and NGOs). During the ODF campaign time, the *Upazila Narbahi* Officer or Chief Administrative Officer of the subdistrict (UNOs) were activated. We interviewed six UNOs, who explained what they had done at that time to help the nation reach its goal of "100 percent sanitation." They cited the following campaign-related activities:

- chaired upazila water and sanitation committee monthly meetings;
- monitored union-level sanitation activities, taking reports from each chairman about his progress during the campaign, and noted the progress when they went to villages for other purposes;
- disseminated sanitation messages at meetings they chaired, regardless of the official meeting topic;
- solved disputes relating to sanitation/latrines/open defecation;
- visited and checked on a union situation before the "100 percent" declaration was finalized;
- checked on sanitation status of a union before allocating ADP funds (this activity continues); and
- worked with the local Department of Public Health Engineering officer to check on quality of latrine parts produced with ADP funds (this process reportedly continues).

5.1.2 Factors Mentioned as Contributing to ODF Campaign Successes

Key informants and stakeholders mentioned several aspects of the ODF campaign and follow-up activities that they thought had contributed to their success in achieving their 100 percent latrine coverage goal:

- special NGO allocations for distribution of ring-slab latrine sets to poor households (mentioned in NG-1, NG-3, NG-4, and GO-4);
- increased ADP allocations and other Ministry funds;
- use of other UP funds for sanitation, or making advance expenditures from the following year's budget in one or two cases;
- some who continued open defecation or use of hanging/open latrines got written notices warning them to stop (fear of punishment and/or a monetary fine motivated many people to get latrines);
- rich people, including some UP chairmen and members themselves, supported poor people's latrine purchases with money and land donations; and
- in some cases, UP chairmen made having a latrine a condition for getting other benefits, such as VGF (Vulnerable Group Fund) cards, which entitle very poor or disabled people to free food

distribution, renewals of licenses, issuance of UP birth certificates, or other documents and services. In one place, the chairman reportedly told teachers to hold back some money from poor students' stipends for purchasing latrines. Some mothers told us that they had gotten latrines from teachers. Strict terms and conditions of these types were no longer in effect in any of the places visited at the time of this study.

Household survey respondents were asked to recall any threats or punishments against people who did not give up open defecation during the ODF campaign. Fifty percent of respondents mentioned at least one. Their responses are presented in Table 29 according to the intervention approach followed. This table shows that there was less threat of confinement, or possibly being sent to jail, in the CLTS areas than in others; but more fear of monetary fines in CLTS areas. The survey findings show also that the experience of the ODF campaign was mixed in all areas. The differences are ones of degree rather than of sharply distinguished categories.

> *"Actually people changed the situation through change of their own practices. Harsh law enforcement worked to change their minds at first, but it did not affect them so much after a while. When people came to understand the disadvantages of wrong defecation practices, then they changed themselves."*
>
> —Woman (GO-2)

5.2 Approaches Used in the Sanitation Campaign

This report has analyzed most latrine characteristics by the approach used in the sanitation campaign. Making definitive statements about the impact of any specific approach, however, was impossible under the conditions of this study. The campaign ended so long before the study began, that many intervening events (including follow-up programs) had occurred. The analysis did, however, reveal some patterns that can at least hint at some differences among the impacts of the approaches on the current sanitation status. These differences will be discussed in Section VII.

Three general differences among the approaches are clear. One is their geographic focus. As Table 30 shows, the unions covered by the CLTS approach were mostly located in arid/plains geographic areas. The unions covered by GoB-donor approaches (DPHE-Danida and UNICEF/ESHWRA programs) were in flood-prone areas (mostly DPHE-Danida), hilly, or geographically mixed areas. Non-CLTS NGO programs and the GoB-only approach were both more evenly distributed among different types of areas. These differences in region are important. For example, they indicate the types of hazards (floods, cyclones, or flash floods) likely to affect latrine structures.

A second difference between the approaches was their sanitation-promotion emphasis. CLTS and GoB-only programs

TABLE 29: PERCENTAGE OF THE TOP FIVE FORMS OF PUNISHMENT OR FINE RECALLED, BY APPROACH (MULTIPLE RESPONSES)

	Approach				
	CLTS (n = 402)	Non-CLTS (n = 103)	GoB Donor (n = 321)	GoB Only (n = 630)	Total (n = 1,456)
Confinement in the PS/Hajot/Union Parishad or fear of it (1 to 3 days)	29.6	40.8	49.2	43.3	**40.7**
Monetary penalty/fine (Tk.50 to 500)	48.3	21.4	12.5	24.9	**28.4**
Scolding/make ashamed/dishonor/rounding village of shoe	8.2	38.8	18.4	22.7	**18.9**
Burning unhygienic latrine or fear of it	8.7	10.7	47.7	24.9	**24.5**
Physical punishment/sit-up holding ear/chasing with stick	12.2	8.7	9.7	7.8	**9.5**

put strong emphasis on latrine installation and use. The two other approaches were broader, promoting latrine use along with hygiene (especially handwashing) and safe water. These are not rigid distinctions. The GoB-donor programs, for example, were implemented through NGOs; and the lead NGO for the DPHE-Danida program was the Dhaka Ahsania Mission, which had participated in training programs developed by the main CLTS-promoting umbrella organization, WaterAid Bangladesh, which also is well known for promoting safe water and hygiene.

A third difference among approaches was the intervention strategy. In this case, the GoB-only unions tended to make use of their authority and were more likely to use coercive methods, forcing people to install latrines, whereas the other three approach types made more use of persuasion and voluntary action. Again, the distinction is not rigid; it is more a matter of degree or emphasis. Numerous volunteers of all ages—women and men—were activated in solely union-led campaigns; and the NGOs implementing sanitation campaigns did use threats (albeit bogus) of imprisonment and other coercive methods, as Table 29 shows.

5.3 Current Efforts of Union Parishad Leaders

In most study unions, chairmen and elected council members were interviewed in detail and were observed working with their constituents. If study team members could not meet the chairmen, they made general assessments of the chairmen's levels of interest in sanitation based on UP meetings and observations while developing "union profiles."

TABLE 30: UNION PARISHAD LOCATION BY GEOGRAPHIC AREA AND APPROACH

Geographic Area	Approach				Total
	CLTS	Non-CLTS NGO	GoB Donor	GoB Only	
Flood-prone	1	4	5	4	14
Coastal belt	1	1	0	1	3
Char	0	0	0	3	3
Arid/plains	7	2	0	3	12
Hilly	0	0	1	2	3
Mixed	1	2	2	10	15
Total	**10**	**9**	**8**	**23**	**50**

TABLE 31: PRESENT ACTIVITY LEVEL OF UNION CHAIRMEN TO MAINTAIN AND IMPROVE SANITATION IN 53 UNIONS (PERCENTAGE)*

Union Parishad Chairman	Approach to Open Defecation Free Campaign				Total Percentage (n)
	CLTS	Non-CLTS NGO	GoB Donor	GoB	
Very Active	30	22	50	30	32 (17)
Moderately Active	50	33	25	22	30 (16)
Inactive	20	45	25	48	38 (20)
Total	**100**	**100**	**100**	**100**	**100 (53)**

*Three unions were covered by RRA and reconnaissance teams but not included in household survey of 50 unions.

The study team found approximately one-third of the 53 UP chairmen they encountered to be very actively trying to maintain and improve sanitation practice in their unions. Another 30 percent were found to be interested in the issue but working less consistently. The rest of the UP chairmen did not seem to be especially interested in sanitation matters. In some unions, UP members were observed to be more actively involved in sanitation issues than the UP chairmen. One formerly active UP chairman had died (GO-2). See Table 31.

The more active chairmen were known to have visited villages recently to conduct sanitation-related problem solving. Their personal attention and interest communicates a sense of the importance of good sanitation to rural populations. They also make public announcements over mobile loudspeakers ("miking") or put up posters. Some reportedly speak about sanitation on formal occasions such as dispute-resolution sessions (*shaalish*), as well as informally. Qualities of the most active and effective chairmen include the following:

- continually reminding their constituents of the importance of 'hygienic' latrine use whenever they visit villages or speak to local gatherings;
- providing latrine parts to poor families with ADP funds;
- declaring local rules against open defecation and following up on complaints with the help of village police;
- routine checking up on compliance with rules against open defecation;

Union assistance with free latrine parts was reported by households of all wealth ranks, with a somewhat lower percentage of ultra-poor households than others.

- struggling to install public latrines or challenging their unions' Bazaar Committees to improve maintenance of existing ones; and
- organizing National Sanitation Week activities in their unions together with other stakeholders.

5.3.1 Supporting Role of the Subdistrict (Upazila) Administrator

Union chairmen who continue to work on their sanitation problems depend on the upazila administration, which in turn continues to get instructions from the MLGRDC. In monthly meetings with UP chairmen of their subdistricts, the chief upazila administrative officers (UNOs) all reportedly discuss sanitation issues and help with developing and implementing plans. The more active UP chairmen rely on the moral and financial support of their UNOs in pursuing their local sanitation goals.

5.3.2 Use of Allocated Governmental Funds

In some in-depth study unions, the research team was able to ascertain whether the UP was currently using union block allocation (ADP) funds to support sanitation improvements. Very few showed us their records; out of 18 unions, 10 were known to be using ADP funds for latrine production and distribution, and five told us that they were no longer allocating their ADP funds for this purpose.

One of these five, G-Don-1 had used ADP funds to help families rebuild latrines after two recent cyclones. Two of the 10 were channeling their ADP funds for latrine hardware through NGO sanitation programs working in their unions. ADP funds were used to establish one public latrine and one community latrine in Noakhali District and a community latrine in a CL-1 village.

BOX 7: A UP CHAIRMAN AND TWO WOMEN IN BOGRA DISTRICT (NG-1)

One night, a UP Chairman was going through the village on his motorcycle. He saw two women going into the jungle with a lantern. The Chairman was curious. He stopped to wait until they came back out from the jungle. He asked them why they had gone in there. They felt shy to say the reason. Assuming that they had gone for defecating, he asked them about it. "Did I not give you any latrine? Why you did do open defecation?" One woman replied, "You didn't give us one. You gave a latrine to my brother." The next morning, the Chairman sent a ring-slab latrine set to the family. They promised him that they would not defecate in open places in the future. The Chairman said to us, "In this way I cleaned out open defecation from my union."

Study team members later heard the same story from another source during a visit to this union.)

TABLE 32: PERCENTAGE OF RESPONDENTS WHO ARE AWARE OF FREE DISTRIBUTION OF LATRINE PARTS TO THE VERY POOR IN THE AREA BY THE UP/GOB, BY WEALTH QUINTILE (PERCENTAGE)

	Awareness			
Wealth Quintile	Yes (n = 420)	No (n = 2,575)	Don't Know (n = 5)	Total Number (n = 3,000)
1st	24.3	75.2	0.5	(602)
2nd	16.9	82.8	0.3	(598)
3rd	13.8	86.2	—	(600)
4th	10.2	89.8	—	(599)
5th	4.8	95.2	—	(601)
Total	**14.0**	**85.8**	**0.2**	**100**

5.3.3 Union and NGO Investments in Latrines for Poor Households: Survey Data

Depending on the program approach taken, some UPs and NGOs distributed latrine parts to union residents either free of charge or at subsidized prices during the initial campaign. Altogether, only 11 percent (n = 337) of survey households reported ever receiving free latrine parts from their UP. This is an unexpected finding, considering the amount of attention that free latrine distribution received.

Tables 32 and 33 present survey findings on receipt of free latrine parts**.** The materials were said to come mainly from the UP. Union assistance with free latrine parts was reported by households of *all* wealth quintiles, with a somewhat *lower* percentage of ultra-poor households than others. NGO aid, possibly through the Targeting the Ultra-Poor program, went more frequently to the ultra-poor than to those of other wealth-quintile groups.

In all unions visited by the in-depth study team, chairmen and UP members said that their monetary allocations were insufficient to meet current demand for latrine parts. One UP Chairman in Kurigram District (GO-5) added some local UP revenues to the ADP funds in order to produce latrine rings and slabs for free distribution to poor households. A UP Chairman in Bogra District (NG-1) complained that the amount he gets from the government to produce a standard three-ring/slab latrine set is only Tk. 450, but that a good quality latrine (one with five rings) actually costs Tk. 2000. He argued that the UP was being discriminated against because the NGO working in his union did not have the same spending limit. A UP Chairman in NG-3 said that funds should be given for superstructures, not just for rings and slabs.

5.3.4 Local Rules

Rules in effect were set in most cases by the UP at the time of the ODF campaign. Most rules were about latrines: forbidding hanging latrines, *kachha* [literally 'crude,' meaning simple, uncovered pits], or other latrines considered "unhygienic."

> ***Are there rules here for new construction?***
>
> *There are none in rural areas, only in urban areas. City Corporations, they require building permits. Pourashavas do too. But there is nothing like that in any union of Bangladesh.*
>
> —UP Chairman (CL-1)

Some of the more active UP chairmen and members have worked to foster the illusion that there are more rules than there actually are. Two or three confided to the study team that they did not want their constituents to know it, but they have very little ability to enforce any of their declared rules. One way to give the illusion of enforcing a "rule" is to send out a village policeman or some other official with some kind of written notice. Writing a formal complaint in itself is strong action in this litigious society.

Several UP chairmen do take complaints, formal or otherwise; and the active ones will follow up personally or send a UP mem-

TABLE 33: PERCENTAGE OF RESPONDENTS WHO HAVE EVER RECEIVED LATRINE PARTS FREE FROM THE UP/GOB, BY WEALTH QUINTILE

	Ever Received Free Latrine Parts			
Wealth Quintile	Yes (n = 337)	No (n = 75)	Don't Know (n = 4)	Total Number (n = 420)
1st	74.0	25.3	0.7	(146)
2nd	83.2	13.9	3.0	(101)
3rd	81.9	15.7	2.4	(83)
4th	88.5	9.8	1.6	(61)
5th	79.3	17.2	3.4	(29)
Total	**80.2**	**17.9**	**1.9**	**100**

Formal monitoring of latrine coverage or other sanitation issues is not being done by the UPs in any regular manner.

ber or village policeman to solve a sanitation related problem. People complain, for example, about neighbors' latrines emitting foul odors.

> ***Linking latrines to other improvements***
>
> *In GO-5, an NGO conducting follow-up activities provided tube well platforms to poor households. Before providing these popular improvements, the NGO visited houses to check whether they had an improved or shared latrine. Having an improved latrine was a condition for getting help with a tube well platform.*
>
> *Poor households getting help with their tube wells also got low-cost plastic latrine pans for their latrines from the NGO.*
>
> *In G-Do-3, the implementing organization that continued to work after the ODF campaign ended made having an improved latrine a condition for getting a tube well through the program.*
>
> ***What do the police do if there's a complaint?***
>
> *If a claim comes, I myself go to the bari and tell the people to install a hygienic latrine. If there is no result, then DPHE goes there with a written notice. The police come as a last resort and "pressure" the people. One such case has required this full process during my time as chairman. I sent the police to the bari. The house owner phoned me while they were there. I asked the police to give the family some more time. There really is no "system" to punish anyone, but we at least can scare them.*
>
> —UP Chairman (GO-3)

5.3.5 Monitoring

Records maintained by the UP Secretary include population census information, numbers of voters, land use data, and numbers of tube wells, but nothing on household latrines.

Informal monitoring systems do exist, however. One UP chairman in Bagerhat District keeps a diary in which he writes down information on union latrines and any sanitation problems that come to his attention.

Village police, who have many duties involving village visits, often check up on problem latrines, or to see if a newly acquired latrine has been installed. UP members also may be called to arbitrate informally if there are problems relating to latrines.

NGO monitoring is done only for the duration of its program, except in a CLTS/Dishari area, where the NGO is still doing periodic latrine surveys on behalf of the UP. In one union (CL-1) an NGO had set up a simple latrine coverage monitoring system on an office white board for the UP to use after the NGO's work ended it had not been updated.

5.4 Follow-up and Current Sanitation Programs

Other organizations besides the UP helped to continue sanitation promotion in some places after the ODF campaigns ended. Follow-up programs of some sort were conducted in 26 of the 50 study unions. Some were continuations of the programs in place during the campaigns; others started up after the campaigns ended. A number of had ended by the time of this study.

In 18 unions, sanitation programs were ongoing at the time of this study. They were being conducted either by large national NGOs (such as BRAC-WASH or WaterAid/VERC), by DPHE-UNICEF (SHEWA-B), or by DPHE-Danida (HYSAWA). In the unions covered under the Dishari program, a UP Water and Environmental Sanitation/WES post had been created with funding from PLAN Bangladesh. Two WES officers seemed active in visited unions.

Elsewhere, there were more limited local initiatives targeting specific areas or populations within the union. The program called Special Targeting the Ultra Poor (STUP) includes provision of improved latrines along with other assets to eligible households identified through strict guidelines.

Survey respondents were asked whether anyone now comes to their homes to talk about installing latrines or the benefits of making sanitation improvements. As Table 34 shows, 41 percent of respondents in "follow-up" unions (i.e., those which had formal, ongoing sanitation programs after the ODF campaign) mentioned someone coming to discuss sanitation with them, but only 9.9 percent of people in non-follow-up unions did so.

TABLE 34: PERCENTAGE OF HOUSEHOLDS INDICATING WHETHER ANYONE HAS VISITED THEM TO DISCUSS USING AN IMPROVED LATRINE, BY PROGRAM FOLLOW-UP

Response	Follow up (n = 1,440)	Non-Follow up (n=1,560)	Total (n = 3,000)
Yes	41.0	9.9	24.8
No	59.0	90.1	75.2
Total	**100**	**100**	**100**

TABLE 35: WHO COMES TO DISCUSS SANITATION, PERCENTAGE BY PRESENCE OR ABSENCE OF CURRENT SANITATION PROGRAM (MULTIPLE RESPONSES)

	Current NGO Sanitation Program in Union		
Who Comes	Yes (n = 494)	No (n = 251)	Total (n = 745)
Local leaders	0.2	4.0	**1.5**
UP chairman/member	6.5	43.0	**18.8**
Health/NGO worker	95.7	57.0	**82.7**
Student	—	0.4	**0.1**

It is interesting to note in Table 35 that in unions without ongoing sanitation programs, UP chairmen and members and other local leaders were mentioned by almost 47 percent of respondents as coming to discuss sanitation. In the unions *with* NGO programs currently in place, however, local leaders and elected officials were mentioned as coming by only 6.7 percent of respondents.

5.5 The Role of Schools in Maintaining Sanitation Awareness

Schools were important during the ODF campaigns and continue to give strong institutional support to latrine use and hygiene, especially handwashing. Schools in six of the in-depth study unions celebrated International Handwashing Day on October 15, 2009. At least three of the study unions reportedly celebrated National Sanitation Month. Special school activities—such as rallies—maintain awareness in the population and not just among the children themselves.

Based on comments from 111 school-age children interviewed, we can say with confidence that children are learning much from the hygiene curriculum and carrying their lessons home to their families. During interviews, several children recited slogans and told what they had learned from their textbooks. They also mentioned extra-curricular educational activities (*Kabiya*) that teach through games. Several children said they tried to persuade their families to use an improved latrine. They expressed frustration and bewilderment if they were not successful.

The school hygiene curriculum, which promotes latrine use, is not capable of producing large-scale behavior change on its own. It served to help children understand about the importance of sanitation, which reinforced and supported the campaign and continues to do so.

School latrines themselves could serve as a model for general latrine use practice, but in many cases there are too few of them to serve this purpose. There is considerable variation among schools, but all or most of the government schools have very few latrines. If a school has only two latrines, as many of them do, the teachers may reserve one for their own use and require that hundreds of students use the other one or that students go home to use the toilet. Students and teachers clean latrines in primary and middle schools. Separate bathrooms for boys and girls are found mainly in high schools and in madrasas. Some school latrines are damaged by passers-by who use them at nighttime.

> *"Who cares about us? We are untouchables. Gentlemen avoid us. . . . People have a very bad ideas about us. They think we don't bathe, and that we don't wash with water after we defecate. But we do wash with water, and so do our children.*
>
> *My daughter goes to primary school, where the teacher talks about handwashing. So, she washes her hands; sometimes with ash and sometimes with soap. Other children in our community (para) try to follow my daughter. We old people find it hard to change, but our children's habits will be better than ours."*
>
> —Paru, a very poor, 28-year-old woman of the low-status cobbler caste (Muchi)

5.6 Sources of Support for Poor People Wanting to Make Sanitation Improvements

Existing programs and UP activities help some kinds of poor people more than others. Families who own their homes may get help with free distribution of latrine parts; but rarely do renters or squatters on publicly owned lands. Their relationships with those who are in charge determine whether or not even the permanent residents get benefits from local governments. Social dynamics and ethnic divisions also have an effect.

Two UP members mentioned that poor people's demand for free or low-cost latrine parts has been increasing in the past few years. They said they do not have enough resources to meet these demands, but they found the demands in themselves to be signs of a big change in thinking. According to one UP member, giving out free latrines during the initial campaign period stimulated interest and motivated poor people to make rapid changes in behavior.

Many rural areas see large numbers of seasonal migrants and agricultural laborers. These people are not likely to benefit from any sanitation service except public latrines. There also are nomadic groups (Bedde) who visit at certain seasons, "floating people" (homeless), itinerant vendors, collectors of recyclable goods, and even street children in the rural areas visited. None of these groups is likely to benefit from the kinds of sanitation promotion activities currently underway. Thirteen percent of children aged 6 to 16 do not attend school in sample unions. Thus, they have less access to information than those who attend school. School dropouts are almost all poor. This fact suggests that poor children were less likely than other children to have participated in the sanitation campaign.

Opinions differ regarding what kinds of help are most helpful to poor people. A widespread view is that poor families need free or subsidized latrine parts, distribution of which is paid for by ADP funds or charitable donations. Another view emphasizes development of motivation and a self-help mentality among poor people. Yet another approach suggests that the internal dynamics of rural communities should be activated to help the poor, rather than getting them dependent on any outside agents or resources.

In areas visited by the in-depth study team, poor people expressed a wish to get some material help from those who pressure them to give up using hanging latrines, open latrines, or other "unhygienic" latrines. In the unions where the local policy has been to not give practical assistance, there is more open defecation than in areas where some

BOX 8: TARGETING THE POOREST FAMILIES IN KURIGRAM DISTRICT

A young woman, Akela, has a 9-year-old daughter in school. She is living on a tiny bit of land set near open fields. She got the land from her father. Her husband is a day laborer *(kaamlaa)*. She is not a member of any NGO group. She got a package of free items recently from BRAC: two goats, one cow, and a new ring-slab latrine. The assembled group explained that: BRAC did a survey here and found that 12 households are very poor. They gave these kinds of things absolutely free of cost. No one here takes loans from NGOs.

assistance was given along with the pressure. But there also is a stronger sense of self-efficacy among poor people than in other places.

5.7 Summary of Findings for Study Objective No. 3

The purpose of this section was to *describe whether programmatic inputs from local and national governments and civil society sanitation programs have been sustained to support communities to maintain their ODF status and help the poor to obtain access to latrines.*

This study found mixed results of sustained programmatic inputs from government and civil society. Formalized institutional support for sustaining ODF status is weaker than it was during the sanitation campaign period. Committees set up at that time to monitor the situation are not functioning. Rules against open defecation are less likely to be enforced than they were during the campaign period. Funding is available for distribution of free or low-cost latrines to the poor in some places, but there are not enough funds to meet demand for latrines in any union. No UP is officially monitoring local sanitation coverage. Subsidized latrine distribution has not always been done according to objective criteria of need. An unexpected finding was that only 11 percent of sample households had ever received free latrine parts from their UP or other government source; and they were not all poor.

Despite the fact that the large-scale sanitation campaign is now "low-intensity" at best, personal efforts among elected officials and others do continue. Motivation is strong among government officials and the majority of elected UP chairmen to continue building on their sanitation campaign achievements. They are supported in their efforts by UNOs, with whom they meet regularly, and who reportedly continue to communicate the message that sanitation is a national priority. UP chairmen and members who still are actively working on sanitation also can rely on their constituents' sense of pride in their communities as places where almost everyone uses latrines. Those who were actively involved in the 2003–2006 sanitation campaign have good memories and a sense of confidence in their ability to promote positive local change. Increasing numbers of people, including poor people, are expressing a wish to install good latrines in their homes. There also are many individuals of all ages who remember the glory days of the sanitation campaign and remain committed to voluntarily persuading their neighbors to maintain sanitation standards.

In areas where sanitation programs continue to operate, there is substantial reinforcement of messages and monitoring; but these activities are not going to reach full union populations, and they will end when NGOs shift their operations to other areas. There are some indications that UP chairmen and members take less initiative in areas where NGOs are working on sanitation than in places where there are no NGO programs.

There is a need for further study of the uses made of the MLGRDC block allocation to UPs. Operations research on UP sanitation monitoring systems that are easy to maintain would also be useful.

VI. Sanitation Products and Services

This section addresses whether *the growth or attrition of sanitation products and services (masons, latrine parts sellers, pit cleaners, financing) have affected sustainability of sanitation behaviors and facilities, and ODF status.*

The national sanitation campaign stimulated the emergence of a group of necessary suppliers of products and services. This section presents findings based on interviews in 17 districts with 26 latrine parts sellers and 16 pit cleaners. Alternate ways that people obtain household latrines are described, along with cost information and issues related to quality of materials. This section reviews the ways that people have obtained and paid for their latrines, how sanitation businesses became established, the cost and availability of pit emptying services, and related supply chain issues.

Key Findings

Four and half years after UPs in this study were declared ODF:

- **At least 95 percent of households reported that they have access to latrine materials and skilled masons** in the local market. The sanitation campaign generated new businesses around latrine parts and construction. However, latrine-selling businesses that were established only to answer campaign-generated demand were less viable than those that also included other products or services. The existence of a mature private sector is a positive factor that supports continued use of latrines.
- **The cost of cement, sand, brick chips, and metal rods has increased during the past five years, but prices of latrines have not increased accordingly**. This has led to a decline in the quality of latrine parts being sold.
- **Only 16 percent of households indicated they knew where to access financing for building a latrine**, and 96 percent of households reported that they used their own funds to build their latrines. With costs of quality latrine parts rising, there appears to be opportunities for strengthening the private sector by connecting them to finance institutions so they can offer credit/installment plans to consumers.

6.1 How Households Get Latrines

The study team interviewed 26 latrine parts sellers and 16 pit cleaners across 17 different districts. The household survey asked respondents how they had attained and paid for their improved latrines. We also analyzed respondents' perceptions of availability of materials and services.

> *"A UP Chairman in Laksmipur District (GDo3) said they had achieved 100 percent only four months after meeting with the UNO and learning about the sanitation campaign. During these four months, household latrine coverage moved from 30 percent to 100 percent. The Chairman arranged with a latrines parts producer to manufacture latrine parts for poor people and said he would pay him later. The Chairman did not actually pay him, and the businessman lost money."*

Households get latrines in six different ways:

- by purchase from a private business, or (in one union) a production center established by the DPHE;
- through free or subsidized UP distribution;
- through free or subsidized NGO distribution;
- as donations from wealthy individuals or volunteer associations, such as youth clubs;
- by making their own latrines from locally available materials rather than concrete items; or
- by using borrowed or unused items from other households.

6.2 New Latrine Selling Businesses Arose in Response to Demand

In three study unions where earlier sanitation programs had been active,[26] demand for latrine parts existed before the ODF campaign began. In other places, large-scale demand arose only during the time of the ODF campaign.

Private businesses and commercial suppliers were found to be the main source of latrine parts in places where ring-slab

[26] GO-Don-1 & 4 in Banaripara Upazila of Barisal District and CL-1 in Chittagong District

TABLE 36: PERCENTAGE OF HOUSEHOLDS WITH ACCESS TO LATRINE MATERIALS

Materials Are Available	Total (n = 2,686)
Yes, easily	68.9
Yes, with some effort	29.0
No	1.6
Don't know	0.5
Total	100

models are popular. Many of these businesses started up during the ODF campaigns. UPs helped to get some businesses started by making large orders to produce latrines for free or subsidized distribution. NGOs also made orders; and some continue to do so. As the ODF campaigns ended, private suppliers became the principal source of concrete latrine parts. A sufficient level of demand had been stimulated among households that could pay for latrine parts to maintain a few businesses in each union. In all but three in-depth study unions (Kurigram/GO-5, Bogra/NG-1, and Lalmonirhat/CL-4/D), latrine suppliers increased their sales and the numbers of businesses gradually increased after the 2004–2005 period.

Weak demand for concrete rings and slabs is found in places where alternative technologies, such as unlined pits, pottery rings, and bamboo pit liners, are popular—and in places where the earth is so hard that concrete rings are not needed to line the pits. Such places have fewer latrine-selling businesses than elsewhere. Larger percentages of survey respondents in these unions said that materials for making ring-slab latrines were available only "with effort": Kurigram (55 percent), Lalmonirhat (44 percent), and Narsingdi (20 percent). In a Lalmonirhat union, where bamboo pit liners are popular, there was no such business. However, for people in unions lacking such businesses there was access to vendors in neighboring unions or in subdistrict towns.

TABLE 37: PERCENTAGE OF HOUSEHOLDS WITH ACCESS TO SKILLED LABOR TO INSTALL/REPAIR LATRINES

Skilled Masons Are Available	Total (n = 2,686)
Yes	94.9
No	3.9
Don't know	1.2
Total	100

Differences between levels of business activity in different regions may have as much to do with population characteristics as with sanitation promotion programs. In places where people have more income earning opportunities, businesses seem to be doing better. People of the far northern districts (Rangpur, Kurigram, and Lalmonirhat) are generally poorer than those in other parts of the country. Employment opportunities are better elsewhere. Sending relatives to work abroad also increases poor households' incomes, making them more likely to buy latrine parts than others without high rates of emigration.

Tables 36 and 37 present survey findings for the full household sample on perceived availability of latrine materials and installation or repair services. There were no significant

FIGURE 18: LOCAL BUSINESS TRANSPORTING SLAB

TABLE 38: COST (MATERIALS, LABOR, AND OTHER) OF THE PRESENTLY USED LATRINE, PERCENTAGES

	Frequency	Percent	Cumulative Percent
No cost	34	2.5	2.5
Up to Tk. 500 (US$7.30)	368	27.1	29.6
Tk. 501–1000 (US$7.31—US$14.60)	285	21.0	50.6
Tk. 1001–1500 (US$14.61—US$21.90)	112	8.2	58.8
Tk. 1501–3000 (US$21.91—US$43.80)	193	14.2	73.0
Above Tk. 3000	259	19.1	92.1
Old material used	13	1.0	93.1
Joint latrine, no cost involved	68	5.0	98.1
Don't know	26	1.9	100
Total	**1,358**	**100**	

differences among approaches or between areas with or without follow-up sanitation programs. Figure 18 shows a local supplier transporting a newly purchased slab.

6.3 Cost of a Latrine

Table 38 presents information on the total cost of survey respondents' currently-used household latrines. The median price paid for materials was Tk.640 (US$9.34); for labor, Tk.260 to 300 (US$3.80–US$4.38); and Tk.90–100 (US$1.31–US$1.46) for other (i.e., superstructure and transportation). As Table 39 shows, median expenditure amounts increase with wealth quintile. The mean amount spent on a latrine ranged from Tk.1, 055 (US$15.40) to almost Tk.16,500 (US$240.88), depending on economic level of the household. The average (mean) for all was Tk.4555 (US$66.50), which is approximately the same as the average rural household monthly income of Tk. 4000–5000 (US$58.39–US$73.00), as reported by the Bangladesh Bureau of Statistics (2007, Table No. 1.01).

Better latrines tend to be more costly than those of lesser quality. The median amount spent on a latrine conforming to the GoB's definition of "hygienic" was Tk.1675 (approximately US$24), while the median amount spent on an "unhygienic" facility was less than half that amount, only Tk.700 (approximately US$10). A latrine conforming to the JMP definition of "improved" facility cost on average (median amount) Tk.1000 (around US$15) as compared to Tk.700 (US$10) for an "unimproved" latrine. It is important to note that even the "lower" expenditure amount of Tk.700 still represents a hefty portion of the monthly budget of an average rural household.

People in some unions—especially poor people—mostly install their own latrines from purchased parts rather than hiring masons. In such unions the only expenses related to latrine installation are materials purchased and transportation cost. The unions with few or no latrine sellers are close to commercial centers and have good roads. In the watery, coastal belt unions of Barisal District, large markets are easily accessible by boat and river transportation is considered affordable. On the other hand, in Noakhali District, transportation costs are reported to be very high. People in our Noakhali study union do not install their own latrines, so even poor people hire masons. This makes latrine installation more costly there than elsewhere.

The distance from village to market is more important for poor households than for others, even if communication

TABLE 39: MEDIAN AMOUNT SPENT ON LATRINE, BY WEALTH QUINTILE

Wealth Quintile	Median Amount Tk. (USD)	Number of Households
1st	500 ($7.30)	273
2nd	600 ($8.76)	247
3rd	1000 ($14.60)	289
4th	1500 ($21.90)	241
5th	7000 ($102.19)	201
Total	1,000	1,251

is easy, because greater distances increase costs of transporting latrine-making materials from markets.

6.4 Sources of Funds to Purchase Latrines

Most households (96 percent) paid for their latrines with their own funds or with help from friends or relatives. Only 7 percent of households said they had borrowed money. Of these households 55 percent borrowed from private sources, 40 percent from an NGO, and 5 percent from a cooperative or a bank. In Laksmipur District, national micro-credit organizations reportedly give loans for latrine purchases. In Bogra District, an NGO that had provided loans for this purpose in the past was no longer giving such loans at the time of this study. An NGO working in Naogaon District was providing loans to microcredit group members wanting to purchase household latrines. The BRAC-WASH project in one study union was distributing materials for twin-pit latrines free to poor households. As Table 40 shows, loans are considered to be more easily available in areas with follow-up sanitation programs than in places without them, but still only by 19 percent of household respondents.

Business owners, when they produce rings and slabs, reportedly plan on making some concessions to poor customers: deferred payments, lower prices, or 'pay-as-you-can' (flexible) installment arrangements. Kinship is important: neighbors and friends get help from kin. Examples were found in GO-2 and G-Don-2. Business owners mentioned offering 10 percent–20 percent discount on prices to poor households in GO-4.

6.5 How Latrine Parts Businesses Were Established

The number of latrine-selling businesses in the in-depth study unions ranges from zero to eight, with an average of four. The two unions with eight businesses (CL-1 and G-Don-1) are places where sanitation campaigns were conducted in the 1980s and 1990s. There is no direct relationship between the population of a union (which might be expected to reflect the level of demand) and the number of latrine parts sellers.

Two types of latrine-selling businesses can be distinguished in study unions. One was entirely built up around campaign-driven demand. The other was selling

The cost of cement, sand, brick chips, and metal rods have increased during the past five years, but prices of latrines have not increased accordingly. The result has been a decline in quality—such as low ratio of cement-to-sand in the concrete and poor-quality brick chips.

TABLE 40: PERCENTAGE OF HOUSEHOLDS WITH ACCESS TO FINANCING LATRINE INSTALLATION/IMPROVEMENT

	All Approaches		
Loans Easily Available	Follow-up (n = 1,333)	No Follow-up (n = 1,353)	Total (n = 2,686)
Yes	19.0	13.6	16.3
No	61.7	73.4	67.6
Don't know	19.3	13.0	16.1
Total	**100**	**100**	**100**

FIGURE 19: LOCAL BUSINESS SELLING A VARIETY OF PRODUCTS

mainly to households and likely to sell diversified products, not just latrine parts. The former type has been less viable than the latter type. (Figure 19.)

Owners who were masons seem to be doing better than those who are not masons. Examples were found in Chittagonj, Noakhali, Chandpur, and Narsingdi districts. In G-Don-4, located in Barisal District, the successful business owner is not a mason, but he is very knowledgeable about latrine parts production. He is also a part owner of a brickfield. His shop sells cement and many other items. Latrine products are only a small part of their business model. The shop also sells house pillars, cow-feeding pans, decorated ventilator panels, rinks needed for chicken houses, and other concrete objects needed in all seasons.

6.6 Costs of Raw Materials Versus Prices of Latrine Parts

- The costs of cement, sand, brick chips, and metal rods have increased during the past five years, but prices of latrines have not increased accordingly. The result has been a decline in quality—low ratio of cement-to-sand in the concrete and poor quality brick chips, for example.
- Reinforcement of concrete rings with wire and slabs with metal rods is necessary to ensure strength and durability of the products. But, in one union of Lalmonirhat District, a business was selling concrete parts lacking any metal reinforcing rods or wire. The owner's explanation was that people did not want to pay for quality items.
- Durability of latrine parts has been negatively affected by such practices, posing injury risks to the latrine-buying public in some places.

Tables 41, 42, and 43 present prices of raw materials to construct latrine parts, and what producers are charging for a good and poor quality latrine parts. The poorer quality

TABLE 41: A CHITTAGONG DISTRICT LATRINE SELLER'S COSTS: PAST AND PRESENT

Item	Past Price	Present Price
Cement	In 2001, 1 bag (40 kg) Tk. 225/260 (US$3.28/US$3.80)	In 2010, 1 bag (40 kg) Tk. 350/380 (US$5.11/US$5.55)
Sand	In 2004, 5 tons of sand with fair Tk. 2000.00 (US$29.20)	In 2010, 5 tons sand with fair Tk. 4800.00 (US$70.07)
Cable	In 2004, per kg. Tk. 15/18 (US$0.22/US$0.26)	In 2010, per kg. Tk. 48/50 (US$0.70/US$0.73)

TABLE 42: A CHITTAGONG DISTRICT LATRINE SELLER'S PRICES

Item	Size	Price Per Piece (Best Quality)	Price (Normal Quality)
One ring	30" X 1'	Tk. 150 (US$2.19)	Tk. 100/120 (US$1.46/US$1.75)
One slab	According to ring shape	Tk. 300 (US$4.38)	Tk. 250 (US$3.65)
Ring pit cover	According to ring shape	Tk. 300	Tk. 250

TABLE 43: GOPALGANJ DISTRICT LATRINE SELLER'S PRICES

Item	2006 Price	2010 Price (Good Quality)	2010 Price (Poor Quality)
One ring	Tk. 80 (US$1.17)	Tk. 150 (US$2.19)	Tk.120 (US$1.75)
One slab	Tk. 100 (US$1.46)	Tk. 200 (US$2.92)	Tk.150

has a lower price point, but consumers also recognize that the quality is not good.

6.7 Product Quality and Injury Risk

The in-depth study team heard several complaints about the quality of concrete latrine parts, whether purchased or received through UP or NGO distributions.

- Latrine installation (self or hired) also was found to be faulty in some places. Such defects pose significant risk of injury.
- The team heard reports of nine latrine-related accidents, including one death.

One woman fell into a latrine and drowned during a storm in a village of GO-4 because no one heard her calls for help. A child and adults fell into latrine pits after pans cracked, but were rescued by relatives. These accidents happened in three unions: Bogra District (NG-1, three incidents), in NG-4, two incidents; and in GO-Don-4, two incidents. One overweight man in GO-5 fell into a latrine pit after stepping on the plastic pan and breaking it. Materials that failed in these cases were mostly concrete slabs and rings, but also one stone slab (in the one fatal accident) and a plastic pan.

6.8 Pit Emptying Services

The single-pit, ring-slab latrine needs regular emptying in order to be sustainable. It is up to each household to clean its own latrine pit somehow. The availability and perceived affordability of pit emptying services is a key issue in sustaining latrine usage. High percentages of household survey respondents said that getting pit emptying services was possible either always or sometimes (Table 44). Many focus group participants and key informants, however, complained about pit emptying costs, which have gone up in recent years. Pit emptying services reportedly are usually available to households that can pay what the services charge (Figure 20). But poor people often consider pit cleaners' services not to be affordable. Even some who are not poor say that they are annoyed by having to spend money for this purpose. Ring-slab sets thus at times remain filled up, or may be under-utilized because people worry so much about pit emptying costs.

Pit emptying costs are negotiated between latrine owners and cleaners. Based on reports from group discussions, household visits, and interviews with pit cleaners, we can say that the cost is Tk.50 to 100 per latrine ring (US$0.73–US$1.46) or Tk.150 to 300 (US$2.19–US$4.38) for a typical three-ring, direct pit latrine.

BOX 9: POOR-QUALITY LATRINE PARTS IN BOGRA DISTRICT

Ahmad lives in a village in a study union in Gopalganj District. He is 28 and makes his living as a sharecropper, working 24 decimals (.24 acre) of land. Ahmad installed his 5-ring direct pit latrine in 2006 by spending 80 taka per ring and 100 taka for the slab. A latrine accident occurred 15 days ago. His nephew had gone to Ahmad's latrine very early in the morning and fallen down into the pit. He had a minor injury. The latrine slab, made of low quality materials, could not hold Ahmad's nephew's weight. Ahmad's mother added, "Rings and slabs don't stay now. They make them with just cement and sands, and they break within 1–2 years." Ahmad told his ward member about this accident and asked for some help, but he didn't respond. Ahmad borrowed an old slab from his brother. He will return it very soon. Ahmad said, "Now latrine costs are very high—120 taka is for one ring and 150 taka for one slab; but the best quality ring costs 150 taka, and one slab is 200 taka. I am completely unable to buy them."

FIGURE 20: HINDU SWEEPER IN NAOGAON DISTRICT (CL-2)

Household survey respondents reported a median amount of Tk.150 for pit emptying. The large majority (98 percent) spent between zero (probably meaning they clean their own pits) and Tk.1000 ($14.60); and those with septic systems spent in the Tk.1100 to 5000 range ($16.18–$73).

Latrine pits with bamboo linings are usually not cleaned; rather, the latrines are replaced. Yet, one or two people did mention having them cleaned. In general, pit cleaners do not agree to clean the pits of bamboo-lined (*duli*) types or simple, unlined pit latrines.

If the cleaner must come from a distance, or if the latrine contents need to be carried to some distant place, charges will increase. Economically better-off households will be charged higher prices. Pit cleaners mentioned that they may charge less if a latrine owner treats them in a friendly manner.

Pit emptiers charge higher prices for cleaning household septic tanks and public latrines. Those charging by the job mentioned amounts in the range of Tk.1000 (US$14.60) to 2000 (US$29.20) for cleaning a public latrine; and Tk.3000–7000 (US$43.80–US$102.19) for cleaning a septic tank. One pit cleaner in CL-4/D takes care of a UP latrine, which a family next door also uses. He receives a salary of Tk.1000–1500 per month for his cleaning services, which probably also includes keeping the whole UP and any nearby market area swept up. Other pit cleaners also mentioned living on UP- or other government-owned property and their families' using public latrines on a daily basis.

Although they certainly are not rich, pit emptiers, who are still mostly Hindus of the Sweeper caste (*Methor*), have found new employment opportunities since the ODF campaigns. This has been a welcome change for these groups, for whom market-cleaning and other such public employment have been the only economically secure options for many decades, perhaps centuries, and who still are regarded as "Untouchables" because of their group's history of contact with human feces.

An interesting trend found in some in-depth study unions is the entry of poor Muslims to the pit emptying occupation, as it offers much better earning opportunities than rickshaw- or van-pulling, and possibly even daily-paid agricultural labor work. Some take up the work secretly after moving to different districts. They do not tell their families back home what they do for a living. Eventually, of course,

TABLE 44: PERCENTAGE OF HOUSEHOLDS WITH ACCESS TO PIT CLEANERS

	Post-ODF Sanitation Program		
Pit Cleaner Availability	Follow-up (n = 1,200)	No Follow-up (n = 1,287)	Total (n = 2,487)
Always	71.4	76.8	74.2
Sometimes	25.7	15.6	20.5
Never	1.2	7.0	4.2
Don't know	1.8	.6	1.2
Total	**100**	**100**	**100**

the information will get back to their home districts, but they feel that the income they can earn makes it worth the social risk (see Box 10 for an enlightening account by a Muslim pit emptier).

Muslim pit cleaners were found to be working in six out of 16 unions for which there is information. In a Chittagong District subdistrict headquarters, town interviews were conducted in one large settlement of Muslim pit cleaners. This group said that they charge less than Hindu pit cleaners in order to get enough work. Muslim pit cleaners do not experience social ostracism to the same extent that Hindu pit cleaners do, as handling human feces is not their traditional family or caste occupation. In Hindu Sweeper communities both men and women may do pit emptying work, but among Muslims only men do it. Hindu Sweepers in NG-3 expressed frustration at being forced to reduce their charges because of competition from Muslim pit cleaners.

6.9 Summary of Findings for Study Objective No. 4

This section describes whether *the growth or attrition of sanitation products and services (masons, latrine parts sellers, pit cleaners, financing) have affected sustainability of sanitation behaviors and facilities, and ODF status*.

Among household survey respondents, about 98 percent said that materials are available in their markets (or obtainable with some effort; and 95 percent said that skilled masons are available. Interviews with business owners show that the 2003–2006 sanitation campaign helped to get many of them started. Those that survived sell other products besides latrine parts; and those with a background experience as masons are doing better than those without such background.

There are some problems with quality of concrete products, as most business owners report that (a) the price of raw materials has increased more than the price of finished parts; and (b) many customers are unwilling to pay for good quality concrete products. So, they sell lower quality products for lower prices. The study team heard of nine accidents (including one death) involving broken latrine slabs; and some interviewees report that such accidents are common. In the places where accidents were reported, news of the incidents was frightening to neighbors and especially to children, diminishing people's enthusiasm for latrine use.

There were some problems with availability of pit-emptiers in some study unions, and in-depth interviews revealed that pit emptying is considered to be too expensive by a large number of people. Despite these problems, however, there is enough business for pit emptiers that some Muslims are taking up this occupation. Some do it openly, but more are secretive about it. They are not as affected by the social stigma as the traditional Hindu pit-emptiers, but they are concerned about the long-term social effects of this occupation on their families.

In general, the study found supplies and services to be available to people wanting improved latrines, which positively supports the sustainability of sanitation behaviors and facilities.

BOX 10: SOME MUSLIM PIT EMPTIERS (CLEANERS) IN CHITTAGONG DISTRICT DISCUSS THEIR NEW OCCUPATION

Now due to poverty we have no choice except do this work. None of our previous generation was involved in the pit emptying occupation. We empty latrine pits, change rings, and install new rings if necessary. Every day early in the morning we take our bucket, ropes, and one spreader and call out, 'Do you want to clean the pit? We are the pit cleaning people'! . . . 'I told my parents that I was working here as a day laborer. But one day one family member came to visit me and saw the work I do. He took a picture of me back home. Since then I've really had trouble with my family and the others in my 'society' *(samaaj)*.

The work is not as profitable as it used to be, because too many people are now taking up this occupation. Work in the city is more profitable than the rural areas. In the city we clean the septic tank or the comet. For cleaning a [septic] tank the charge is about 8000 taka. If we work in the villages we get low payment, but in the city we get a good amount of money and they also provide food.

Now we are working with feces, but we do not feel bad for that. We feel happy if we find a latrine full of feces, because it our livelihood. We do not hate our profession.

Our monthly income is not the same in all months. It varies according to the availability of work. The highest monthly income we can earn is around 7000 taka, and the lowest is 3000 taka.

The work is not nearly as hard as pulling rickshaw.

We cannot arrange marriages for our sons or daughters to families of the other occupational groups. Even if we do it secretly, one day they will know our profession and send back our daughters to us. Now we are thinking to arrange marriages just within our Muslim Methor community.

People, especially poor people, often do the installation work themselves, paying only for materials and transportation. Very little use was made of formal loans of any sort in purchasing the currently used latrine. Of the 7 percent who borrowed money for this purpose, more than half borrowed from relatives or friends and most of the rest (less than 3 percent of the total) borrowed from NGOs. More than two-thirds of household survey respondents said credit for purchase of latrines was *not* easily available.

VII. Factors Responsible for Sustaining or Not Sustaining Changed Sanitation Behaviors

Based on the findings from the previous sections, this section summarizes factors of *why households and communities have or have not sustained improved sanitation behaviors since ODF declaration.*

Key Findings

Four and half years after UPs in this study were declared ODF:

- **The social norm of defecating in open is now generally rejected**, and is a powerful factor in sustaining use of latrines.
- **High access to latrine parts and services** has likely contributed to sustained use of latrines.
- **Some form of follow-up program that reinforces sanitation messages and behaviors is associated with using an improved or shared latrine**.

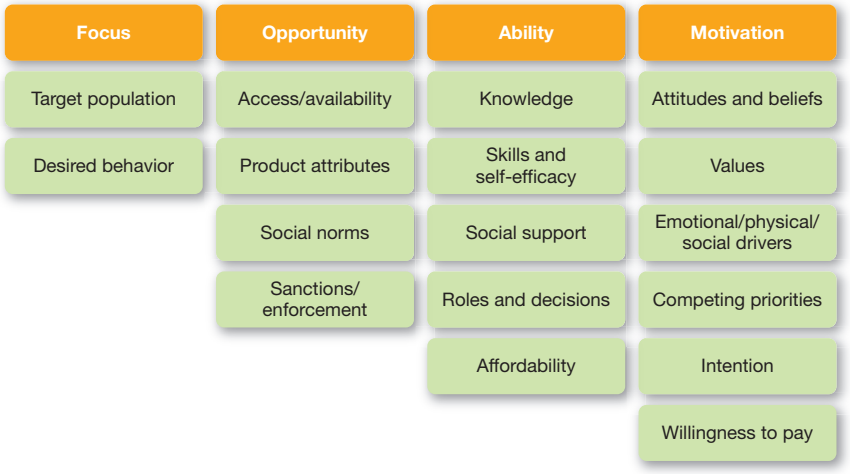
7.1 Factors Thought to Contribute to Sustained Sanitation Behaviors

Many of the factors discussed in the previous sections can be linked to behavioral determinants that facilitate sustained use of latrines. A behavior change framework called SaniFOAM[27] describes a common set of determinants for sanitation behaviors. This section maps the evidence generated through this study to various determinants described in the SaniFOAM framework. By linking to these determinants, sector professionals can better distill the findings from this case study and consider whether these determinants and findings are relevant to their current or future sanitation interventions in or outside of Bangladesh.

The SaniFOAM framework (Figure 21) categorizes determinants into three groups, Opportunity, Ability, and Motivation. Within each group there are several determinants that affect sanitation behaviors. These were identified from a review of relevant literature and program experience.

[27] J. Devine, "Introducing SaniFOAM—A Framework to Analyze Sanitation Behaviors to Design Effective Sanitation Programs" www.wsp.org/wsp/sites/wsp.org/files/publications/GSP_sanifoam.pdf

FIGURE 21: SANIFOAM BEHAVIOR CHANGE FRAMEWORK



7.1.1 Opportunity

Social Norms

Defined as the rules that govern how individuals in a group or society behave. Any behavior outside these norms is considered abnormal. While difficult to quantify, this may be one of the more important determinants in positively supporting sustained use of latrines in Bangladesh.

During the 2003–2006 campaign, the confluence of national government leaders, local government authorities, community leaders, mass media (radio and television), and NGO community workers all promoting that households need to use a latrine and stop open defecation was engrained in rural Bangladesh. This likely helped shift the social norm of defecating in the open as an acceptable practice to one that is now rejected by most households. An example of this shift in social norms is that having a good household latrine will increase the chances of one's child marrying into a respectable family; and conversely, not having one will create social problems (i.e., relatives' refusing to visit or feeling uncomfortable when they do visit). See Section IV for more details of perceived benefits of being ODF and using latrines.

Access and Availability

Defined as access to and availability of products and services. This study showed that access and availability to latrine parts and skilled masons was very high in most UPs, which is an important determinant in giving households the opportunity to replace, repair, or upgrade their latrine as needed. By being able to readily make repairs or improvements, households are likely to maintain or increase satisfaction with their latrine and continue to use it.

Access to pit cleaning services is also important for continued operation and maintenance of the latrine, which affects its usability. Almost 96 percent of households indicated that pit cleaning services were either sometimes or always available. This is a positive factor that supports regular operation and maintenance, and sustained use of latrines.

Product Attributes

Defined as the characteristics that a population seeks in a sanitation facility such as comfort, convenience, privacy, pleasant (or at least not unpleasant) smell, cleanliness, absence of flies, ease of cleaning and maintenance, durability, and ventilation. These are a few examples of product attributes for latrines.

This study highlighted that one of the defining elements of the ODF campaign was the innovation around low cost and low-tech latrines. The range of options other than the typical pour-flush latrine allowed households to experience using a latrine for the first time. The assumption was that once people had adopted the latrine-use habit, they would upgrade or replace their latrines as they filled up or disintegrated. That assumption has been confirmed by this study's findings.

About 20 percent of households have upgraded their latrine, 23 percent replaced their latrine with a similar type, and 47 percent have continued using the same latrine leaving the remaining 10 percent downgrading their latrine. A number of alternative latrine types and varied materials are still in use, so desirability of the product attributes for many households is likely a positive factor contributing to sustained use of latrines. As previously mentioned, the opportunity to upgrade, repair, or replace was facilitated by the high access to parts and services. Eighty-three percent of survey respondents indicated that they are satisfied or moderately satisfied with their current latrine, while the other 17 percent stated they are unsatisfied with their latrine. The high rate of satisfaction is a positive sign that households are relatively content with their latrines, which positively supports their continued use.

Sanctions and Enforcement

Defined as formal rules of society—either coercive or non-coercive—that influence behaviors. In the SaniFOAM framework, the presence of sanctions and their enforcement is identified as a possible factor facilitating the adoption and maintenance of particular sanitation behaviors. The various approaches implemented during the campaign used different methods of enforcement. In some areas enforcement was more threatening where local authorities burned hanging latrines, threatened imprisonment, or issued monetary fines. In some places, more so in CLTS areas, sanctioning was less formal and took place by social policing such as children calling

out people who defecated in the open. This also included recognizing communities or areas as being open defecation free and promoting the fact that open defecation is rejected.

It was noted by some respondents that enforcement played a more prominent role during the campaign in shifting households from open defecation to using a latrines; however, the threat of sanctions appears to be less now and it is more the social norms around open defecation that influence behavior. With that said two-thirds of UP Chairman were taking some action on sanitation, which includes sending the messages that there are rules against open defecation.

7.1.2 Ability

Knowledge

Acquired through learning and may pertain to objects or products, behaviors and even outcomes. The ODF campaign messaging communicated the linkage of latrine use to disease and poor health. Almost five years after the campaign, knowledge around open defecation and its linkages to disease has been sustained. This is evidenced by a significant proportion of respondents citing less disease as a perceived health benefit of using a latrine and being ODF. The ODF campaigns of 2003–2006 produced general awareness of the health risks associated with OD and the public health value of widespread latrine use.

Affordability

Defined as one's ability to pay for a sanitation product or service or to engage in a sanitation behavior. This study showed that the top three wealth quintiles are more likely than the two lowest wealth quintiles to have an improved or shared latrine. It is not surprising that wealth is a key factor in being able to afford to purchase and maintain an improved latrine. The majority of households who own a latrine paid for it with their own funds or with help from friends or relatives. It appears that the range of options including low-cost technologies was able to help people afford a basic level of improved sanitation; however, this still remains a challenge for the poorer segments of society. Additionally, 37 percent of households share an improved latrine, which allows a large segment of families to leverage household income to afford a latrine.

Social Support

Defined as the physical and emotional comfort given to individuals by family, community members, friends, co-workers and others. An example of this is UP Chairman or NGOs providing free latrine parts in follow–up programs for those who are struggling to sustain the use of a latrine. Although percentage of households that reported receiving a free latrine parts was relatively low.

The other important factors that are associated with using an improved or shared latrine include: (1) having a follow-up program, and (2) having been visited by someone advising latrine use. The positive effect of having a follow-up program reflects the potential value of reinforcement efforts.

The analysis also indicates that households that live in CLTS have a higher percentage of shared latrines compared to other programmatic areas. While there may be several reasons for this, one possible explanation is the community empowerment aspect of CLTS and the promotion of community efficacy to solve their issues collectively. It is unknown if there is was a strong sense of social capital in these areas prior to CLTS being implemented whereby CLTS built upon a strong social fabric, or if CLTS helped develop social capital through its activities. The key point is that sharing latrines helps households avoid open defecation if households are not able have their own latrine, and if programmatic approaches can help build social capital to foster a sense of community responsibility to end open defecation its seems that this can have a positive effect on sustained use of latrines.

7.1.3 Motivation

Values

Represent important and enduring ideas shared by the members of a community about what is good or desirable and what is not. There are three important cultural values that appear to have a positive effect on sustained use of latrines, which are 'purity,' 'pollution,' and *purdah*.

The ODF campaign raised the knowledge among rural Bangladeshis about the polluting nature of open defecation and how it contaminates the environment, food, and water sources. This increased knowledge combined with religious

"Most of our villagers used to defecate in open places but I cannot do this because it is a great sin according to Islam."

and cultural values of 'purity' and 'pollution' around feces appears to have had an effect on sustaining use of latrines.

In addition, females appear to be motivated to use latrines by a need to maintain *purdah* standards that are in line with religious values. These religious values also lead into *emotional/social* drivers discussed below.

Emotional/Social Drivers

Defined as strong internal thoughts and feelings that motivate behavior. They can be positive or negative, and can stem from unmet physical, emotional, or psychological needs. Some examples of drivers include: safety (for example from snakes or other elements, for children and women in particular), comfort, privacy (for women in particular), status, disgust, pride and self-esteem.

The cultural value of *purdah* is likely strong driver that taps into a woman's desire to have privacy for defecation, urination, or menstrual management. Previously when latrines were less common, women would wait to relieve themselves until nighttime when men would not see them, causing significant inconvenience. The fact that they have access to a place that provides a sense of safety and privacy is a positive factor that supports latrine use particularly among women.

A negative emotional/social driver that affects both men and women is disgust. The concept of disgust is a prominent feature of CLTS that intentionally or unintentionally violates the cultural values of 'purity' and 'pollution' by highlighting that open defecation leads to consuming someone else's feces. This violation of values is likely a factor that was engrained in people during the ODF campaign and has helped contribute to sustained use of latrines.

A positive driver is the sense of pride that comes along with being ODF and using an improved latrine. The ODF campaign from 2003–2006 was compared on several occasions to Bangladesh's independence revolution of 1971. The pride people have in achieving ODF, and how they related it to the national pride of fighting for and gaining independence as a nation is likely positive factor that cuts across socioeconomic levels to help sustain sanitation behaviors.

7.2 External Enabling Environment Factors

Some positive factors that are at play beyond individual behavioral determinants include horizontal learning and continued political will. Union chairmen's learning was enhanced by exchange visits during the ODF campaigns. Horizontal communication among local government leaders further supported the dissemination of good ideas. People were encouraged to visit other areas, some even going to India or Cambodia, to observe new approaches and to share their own experiences. Some UP chairmen participating in such exchanges were (and still are) very knowledgeable about sanitation, as they had been through previous campaigns, such as the Social Mobilization for Sanitation or CARE-SAFER.

Their long experience benefited others. In CLTS areas, other types of local leaders also were encouraged to join in horizontal learning experiences.

The study team assessed UP chairmen's current levels of interest in making further sanitation improvements. The fact that almost two-thirds were still interested and active is a positive sign for the future. In these places, the chairmen's interest has specific results. They send their village police (*chowkidars*) out to check on problem situations. They convey a sense that there are rules against open defecation. Some take complaints and follow up on them. They also do "miking" (i.e., sending mobile units through the villages issuing loudspeaker proclamations about the importance of latrine use and not defecating outdoors). At least ten out of 18 UPs are known to continue to spend some part of their ADP revenues on latrine production and distribution.

Within each union, schools provided strategic support to general awareness raising during the ODF campaigns. They continue to do so. Indeed, the hygiene curriculum in government schools has promoted latrine use, handwashing, and other sanitation practices from the late 1970s onward. This consistent flow of information and ideas may well have made the general public receptive to campaign messages. The messages were not entirely new, although the majority had resisted making behavior changes before their unions' ODF campaigns.

7.3 Factors Thought to Contribute to Not Sustaining Sanitation Behaviors

Like Section 7.1, this section categorizes behavioral determinants and external factors that help explain why households did not sustain use of an improved or shared latrine.

7.3.1 Opportunity

Access and Availability

Even if a household owns it plot of land, lack of space can also make it difficult to install a latrine in situations where there is extreme crowding in some rural settlements. This also creates difficulties in finding space to dispose of pits fill up and need to be emptied.

Access to financing options to build, repair, or upgrade a latrine is fairly low. Only 16 percent of households said that they know where to get a loan to build a latrine, while 84 percent indicated that they didn't know nor were unsure where they could get financing. Financing is particularly an issue for the two lowest wealth quintiles who struggle to gain access to an improved latrine.

While most households reported having access to suppliers of latrine parts and skilled labor, there was a small percentage that did not. Lack of access to markets and high transportation costs to deliver parts and services due to long distances affects households' ability to afford parts and services for repairing or upgrading their latrines.

Product Attributes

The durability and usability of a latrine can be affected by not having a roof, because monsoon rains can weaken the earth that supports rings and slabs rendering it unstable. About 48 percent of household latrines in the study did not have a roof.

Poor construction quality of concrete latrine parts is also a challenge. Businesses reported that households are not willing to pay higher costs for quality built latrine parts, so they construct parts of a lesser quality by using improper sand to cement ratios or removing metal reinforcement. This compromised quality poses safety hazards and affects durability of slabs and rings, and threatens user satisfaction and consumer confidence in the market.

Sanctions and Enforcement

The study found that house and land rental occurs on a large scale in some areas, and in these areas landlords do not always invest in latrine installation. In some places, there is a lack of regulation requiring landlords to install proper latrines, and enforcement of regulation that might exist is also problematic. This same lack of enforcement applies to construction of new houses (rentals or owner occupied) as well.

7.3.2 Ability

Knowledge

While some people install their own latrines in order to save money, some of the self-installed facilities are not set up properly. Proper knowledge to self-install a latrine is lacking, and as a result poorly installed latrines threaten

sustainability. Tilted, cracked, and broken slabs were found in many unions. The reason to self-install a latrine is likely driven by the desire to minimize costs.

Affordability

The two lowest wealth quintiles are where there is the highest concentration of households that do not have access to an improved latrine and who defecate in the open. Poverty is an issue that affects households' ability to afford to install a latrine. The chief policy response to assist poor households has been to distribute free latrine materials; however, distribution of free latrine parts does not always reach the poorest that need them the most. With less disposable income, poor households have competing priorities and tend to give sanitation a lesser priority.

Social Support

In eight unions there were more than 20 percent of households using an unimproved latrine, and a common characteristic among these unions is that none had a chairman very actively working on sanitation at the time of the study. In addition, five of the unions had no sanitation follow-up program. Indicating that institutional support to promote latrine use is possibly a factor that affects sustained use of latrines.

Sharing of latrines is a common practice in rural Bangladesh (37 percent of households shared their latrines in this study), which has had a positive effect in helping people gain access to an otherwise improved latrine especially among poor households. Sharing can however lead to problems with maintenance and over-use. This study found cases of very large numbers of people using a single latrine, and sharing is negatively associated with latrine cleanliness. In some cases these arrangements are not sustainable and are not generally liked by the users, which can lead people to defecate in the open.

Roles and Decisions

Security of land tenure strongly influences whether households invest in home improvements. People living on government-owned land and people who rent their homes are less likely over the long term to invest their own money on improving a latrine that they do not own.

7.3.3 Motivation

Attitudes and Beliefs

While the social norm of defecating in the open is largely rejected, there were pockets of areas where households were actively engaging in open defecation. In these cases it was often negative attitudes toward local leaders or poorer households against wealthier households, which manifested itself as a social rebellion against these groups, and led to intentional open defecation.

7.4 Negative External Factors

There were eight unions that had more than 20 percent of households using an unimproved latrine, and six out these eight unions had been hit by severe natural disasters within the previous three years (cyclones, floods, or a tornado).

Rainwater and floods can make latrine use impossible in lowlands during the flood season. If a latrine is built on lower-level ground than the homestead courtyard, it is likely to be flooded, pushing the household to defecate openly until the flood ends. Rainwater damages a latrine superstructure, especially if there is no roof.

Cyclones in the coastal belt zones and tornadoes or strong storms in the northern part of the country seriously damage latrines and houses. Flash floods in hilly areas frequently damage latrine superstructures. Landslides also occur in hilly areas, damaging latrine structures along with others.

In some areas, soil characteristics pose challenges. For example, very hard soil made it difficult and expensive to dig latrine pits; although once dug; the pits were sturdy and did not need to be lined with concrete rings. Very sandy soil is a problem in other places, making it difficult to dig latrine pits and insert concrete rings.

7.5 Summary of Findings for Study Objective No. 5

This section describes *why households and communities have or have not sustained improved sanitation behaviors since ODF declaration.*

The influence of social norms on sustaining latrine was not able to be quantified in this study, but the qualitative

research clearly showed that this is a powerful factor that influences households' decisions to use an improved or shared latrine. The process that Bangladesh went through to change social norms through the collective effort by government and civil society is a lesson that other countries can learn from.

Cultural values such as *purdah*, 'purity,' and 'pollution' are also important factors that likely help sustain use of latrines, and are often unknown or unrecognized by sector professionals. In designing sanitation promotion programs, understanding these cultural values along with the other behavioral determinants discussed in this section can help tailor sanitation and hygiene messages to be more effective and efficient in changing and sustaining behaviors.

Access to latrine parts and services is likely a significant factor in helping sustain latrine use. By having access, households have the opportunity to repair, upgrade, and replace their latrine as needed. With regards to sustainability and having continued access to suppliers, it is important for sanitation sector professionals to note that the businesses identified in this study that currently sell latrine parts have product lines that go beyond sanitation parts. This is something to consider in thinking about strengthening the private sector's capacity to deliver supply over the long-term.

Often a default response by the sector is to set up sanitation centers that exclusively sell latrine parts. If demand is great enough as was the case in Bangladesh during the time of the campaign, these latrine parts providers can a fill a gap; however, this study found that the businesses that currently exist in a mature market are diversified providers of latrine and non-latrine parts. Working with producers of non-latrine parts or helping small businesses think about a diversified product line can help them with their longer term sustainability that ultimately influences households' sustained use of latrines.

A key factor for poor households that do not currently use an improved latrine is access to cash or credit. Most households that do not have access to an improved latrine are likely to be in the two lowest wealth quintiles. The political economy of elected leaders providing subsidies is complex, as subsidies in the form of free latrine parts did not always reach the poorest households as was intended, but often went to wealthier households. The qualitative research indicated that there is demand by poor households to have improved latrines, but households were requesting some form of assistance. Given that latrine subsidies did not always make it to the households that needed them, further thought on innovative financial instruments or a more effective subsidy program needs to be determined.

VIII. Conclusions and Insights for Sustaining Future Sanitation Programming at Scale

This section briefly highlights some conclusions and implications for sector professionals to consider when planning sustainable sanitation programs.

Government has to have the political will to prioritize sanitation at the central and lower tiers of government. Bangladesh is an excellent example of how sanitation was included in the country's poverty reduction strategy, which provided the road map for all levels of government and civil society to take and sustain action on sanitation. Advocacy from the central government down to the local governments, led by the Minister of Local Government, Rural Development and Cooperatives, was a factor in unifying the country around sanitation.

Sustained sanitation programs are needed to support behavior change. Local government authorities require some level of sustained financing for continued sanitation promotion for an undetermined period of time. This study showed that follow-up and reinforcing messages appear to help with sustained use of improved latrines. Bangladesh offers a good example of institutionalizing sanitation by 1) establishing a sanitation secretariat in the government, 2) celebrating sanitation month each year helping keep it on the government's agenda, and 3) using Annual Development Program Allocations issued by the central government for sanitation.

Financing mechanisms are needed for households that want to replace or upgrade basic latrines, or move out of sharing arrangements. This could be accomplished by connecting microfinance institutions with service providers giving them the cash flow to offer their services/products on credit or in installments. This may allow them to charge a fair price for a better quality product. Moreover, some form of financing or subsidy option is needed for the poorest that still have not achieved a level of basic sanitation. Better targeting the poor with subsidies by using community-based and self-selection methods may be more effective than means-tested systems[28]

Sanitation marketing can help sector professionals better understand consumer's constraints and aspirations to help them achieve an affordable level of service that gives them the most satisfaction. The barriers and benefits to using a latrine are likely to be different for those that continue to defecate in the open compared to those who share a latrine. Market research can help target these different segments of the population with an affordable level of service that gives consumers the most satisfaction, increasing the likelihood of sustained use of latrines.

[28] *Financing On-Site Sanitation for the Poor – A Six Country Comparative Review and Analysis;* available online at www.wsp.org/wsp/sites/wsp.org/files/publications/financing_analysis.pdf

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Annex 1: Sanitation Program Approaches

SIX SANITATION APPROACHES (FROM WATER AND SANITATION PROGRAM, STUDY TERMS OF REFERENCE)

	CLTS NGO		Non-CLTS NGO		GoB Donor		GoB Only (local government)
Element / Approach	DISHARI: Decentralized Total Sanitation	Wateraid: Community-Led Total Sanitation	NGO Forum: Village Approach to Total Sanitation	BRAC: Health Program	DPHE-Danida Rural Water Supply and Sanitation Program (Coastal Belt)	DPHE-UNICEF: Environmental Sanitation, Hygiene and Water Supply (ESHWRA)	GoB: Total Sanitation
A. Sanitation Objective Context	Decentralized total sanitation with local government centered implementation process	Achievement of Total Sanitation led by community		Total Sanitation as an end to improved rural heath	Improve hygiene practices through the provision of safe water supply and sanitation facilities and by involving local organizations toward long term sustainability (In eight coastal belt districts, 1997–2009)	Total sanitation to improve standard of hygiene and behavior on a sustainable basis while ensuring safe water	100% Sanitation including no open defecation, hygienic latrines for all, and proper maintenance of latrines for communal use, and improved hygiene
B. Implementation Approach Driver	UP members, supported by Upazila teams	Local forums, community groups; VERC as facilitator	Total Sanitation with decentralized implementation process and strategies for village-based sustainable model	BRAC village organizations. Support from village institutions and old UP members	Local Government Support Unit (LGSU) in the Department of Public Health Engineering (DPHE); Regional Project Management Units (PMU), NGO facilitators. The three immediate objectives of the project are: 1. To improve hygiene behaviors/ practices; 2. To promote community-led total sanitation; and 3. To increase the coverage of safe water supply services	Multiple stakeholder and division of responsibilities; schools and institutions entry points; integrate ward plans into UP plan	Local government institutions with active support and monitoring by higher levels

	CLTS NGO		Non-CLTS NGO		GoB Donor		GoB Only (local government)
Element / Approach	DISHARI: Decentralized Total Sanitation	Wateraid: Community-Led Total Sanitation	NGO Forum: Village Approach to Total Sanitation	BRAC: Health Program	DPHE-Danida Rural Water Supply and Sanitation Program (Coastal Belt)	DPHE-UNICEF: Environmental Sanitation, Hygiene and Water Supply (ESHWRA)	GoB: Total Sanitation
C. Messages of IEC Activities	Let people decide on the behavior they want to change; and provide information and support to develop and disseminate messages	12 messages to bring about behavioral change; the emphasis is on covering food and handwashing at critical times	UP members driven; program implementation through partner NGOs and Village Sanitation Centers	Prepare messages through participatory process; main messages: washing hands with soap after defecation; after washing children's bottom and before preparing food and wearing sandals to latrines	Improved hygiene behavior with the use of safe water and hygiene practices • All households use and maintain sanitary latrines • Community sanitation facilities established, used and maintained	Washing hands with soap after defecation; washing hands with soap after cleaning children's bottom; wearing sandals to latrines; washing hands before having or preparing food; cutting nails at least once a week	Stopping open defecation, use sanitary latrines, improve personal hygiene, reduce medical expenses; and Sanitation for All 2010 target
D. Arrangements to Improve Human Resources and Institutions	Train community members, UP members and chairmen, and other implementation agents	Train community members, UP members and chairmen, and other implementation agents	Handwashing at critical times; adequate cleaning of latrine pans; covering of food; and collection, storage and use of safe water	Train SSs and SKs who can be important to the community even after the program is over		Training community, field workers, implementers and government officials	Through review meetings; demonstration of technology use; NGOs expected to provide training support

continued

	CLTS NGO		Non-CLTS NGO		GoB Donor		GoB Only (local government)
Element / Approach	DISHARI: Decentralized Total Sanitation	Wateraid: Community-Led Total Sanitation	NGO Forum: Village Approach to Total Sanitation	BRAC: Health Program	DPHE-Danida Rural Water Supply and Sanitation Program (Coastal Belt)	DPHE-UNICEF: Environmental Sanitation, Hygiene and Water Supply (ESHWRA)	GoB: Total Sanitation
E. Technical Options	Project engineer works with community in providing people a range of technology options	Range of technology options (more than 30 models) starting for simple pit latrines to twin pits latrines	Train community members, UP members and chairmen, and other implementation agents	Range of technology options but BRAC prefers the pour flush pit latrines	- Approximately Ring/slab latrine sets were distributed	Range of technical options - developed by DPHE	Multiple options, encourage local and cheap materials to include poor, ring-slabs given in subsidy
F. Subsidy	No subsidy for household latrines (handpumps provision being supported for very poor). Financial support provided for latrines in public places	None for household latrines but 80% for sanitation facilities in girls' high schools and public places	Range of technology options (DPHE developed) through village sanitation centers run by partner NGOs	Subsidy for hardcore poor households only		No subsidy for sanitation hardware except in schools, institutions and *madrashas* (religious schools)	Subsidy support for very poor households (75% of program budget); for schools and public places too; cash reward scheme for ODF UPs
G. Monitoring and Evaluation	Ward reports go to unions and upwards; implementation agency monitoring for program management	Community strong role in M&E using graphic formats Evaluation committee of community sets reviews	No subsidy for household latrines but incentives for community latrines and school sanitations/ institutions	Baseline survey; BRAC MIS; quality assurance jointly by program and BRAC monitoring unit		Cluster monitoring reports progress on the basis of community action plans; national sanitation; external monitors and inspection	UP and village task forces as a part of the national monitoring system (housed in DPHE) comprising Upazilas and districts

	CLTS NGO		Non-CLTS NGO		GoB Donor		GoB Only (local government)
Element / Approach	DISHARI: Decentralized Total Sanitation	Wateraid: Community-Led Total Sanitation	NGO Forum: Village Approach to Total Sanitation	BRAC: Health Program	DPHE-Danida Rural Water Supply and Sanitation Program (Coastal Belt)	DPHE-UNICEF: Environmental Sanitation, Hygiene and Water Supply (ESHWRA)	GoB: Total Sanitation
H. Sustainability Measures	People's involvement; local resources; UP permanent structure – strengthening local government		Village-level, partner NGO-level, and national-level monitoring	SSs local resource persons who will remain in the village; presence of village organizations/ credit groups; orientation on health and hygiene, and minimum maintenance	Sustainability of the facilities are given due importance through enhancing the capacity of the users, communities and local bodies and by involving the Union Parishads (UP) as the focal points for implementation of all activities	Exit strategy; community involvement; sanitation and water supply components integrated in UP plans; intense hygiene behavior change; continued inter-personal communication	Clear budgetary allocation; continued allocation to ODF UPs for promotional activities (75%) and hardware (25%) for public sanitation; calendar-based set of activities; rewards for performing UPs

Source: Interviews with agencies and WSP (2006) study entitled, "A Study on Performance of Rural Sanitation Implementation Approaches in Bangladesh"

Annex 2: Characteristics of Study Unions

SL No	Division	District	Union ID code	Geographical Area	Approach in ODF Campaign	Post-ODF Follow-up NGO/ Program	Present NGO/ Program
1	Dhaka	Dhaka	G-8	Char	GoB only	BRAC	BRAC
2	Dhaka	Manikganj	G-9	Mixed	GoB only		
3	Dhaka	Rajbari	NG-10	Flood prone	Non-CLTS	BRAC	BRAC
4	Khulna	Magura	G-18	Mixed	GoB only	BRAC and SHEWA-B	BRAC and SHEWA-B
5	Khulna	Jessore	G-7	Mixed	GoB only		
6	Khulna	Bagherhat	G-19	Flood prone	GoB only		
7	Khulna	Satkhira	G-21	Flood prone	GoB only	EECHO	EECHO
8	Khulna	Satkhira	G-14	Mixed	GoB only		
9	Khulna	Satkhira	NG-6	Coastal belt	Non-CLTS		
10	Dhaka	Faridpur	G-11	Char	GoB only	BRAC	BRAC
11	Dhaka	Gopalganj	NG-4	Flood prone	Non-CLTS	BRAC and SHEWA-B	BRAC and SHEWA-B
12	Dhaka	Gopalganj	NG-9	Flood prone	Non-CLTS	BRAC and SHEWA-B	BRAC and SHEWA-B
13	Dhaka	Madaripur	G-DO-5	Mixed	GoB donor (ESHWRA)	Local NGO	Local NGO
14	Barisal	Barishal	NG-7	Mixed	Non-CLTS		
15	Barisal	Barisal	G-DO-4	Flood prone	GoB donor (DPHE-Danida)	DPHE-Danida	
16	Barisal	Patuakhali	G-DO-9	Flood prone	GoB donor (DPHE-Danida)	DPHE-Danida	
17	Barisal	Bhola	CL-8	Coastal belt	CLTS		
18	Barisal	Bhola	G-22	Coastal belt	GoB only		
19	Rajshahi	Lalmonirhat	CL-4/D	Flood prone	CLTS	PLAN Bangladesh	PLAN (funding UP WES post)
20	Rajshahi	Rangpur	G-15	Mixed	GoB only	SHEWA-B	SHEWA-B
21	Rajshahi	Kurigram	G-23	Char	GoB only	EECHO	EECHO
22	Rajshahi	Kurigram	G-5	Arid/plains	GoB only	MJKS/WaterAid	
23	Rajshahi	Gaibandha	G-DO-7	Flood prone	GoB donor (ESHWRA)		
24	Rajshahi	Bogra	NG-1	Arid/plains	Non-CLTS		BRAC
25	Rajshahi	Sirajganj	G-DO-6	Mixed	GoB donor (ESHWRA)		
26	Rajshahi	Pabna	G-20	Mixed	GoB only		SHEWA-B
27	Rajshahi	Chanpai	CL-10	Arid/plains	CLTS		
28	Rajshahi	Chanpai	CL-9	Arid/plains	CLTS		

SL No	Division	District	Union ID code	Geographical Area	Approach in ODF Campaign	Post-ODF Follow-up NGO/ Program	Present NGO/ Program
29	Rajshahi	Chanpai	CL-3	Arid/plains	CLTS		
30	Rajshahi	Rajshahi	CL-6	Arid/plains	CLTS		
31	Rajshahi	Rajshahi	CL-7	Arid/plains	CLTS	EECHO/VERC	EECHO/VERC
32	Rajshahi	Rajshahi	G-10	Arid/plains	GoB only	ESTO, Star, Setu, Samata	
33	Rajshahi	Naogaon	CL-2	Arid/plains	CLTS	EECHO/VERC	EECHO/VERC
34	Rajshahi	Natore	G-12	Flood prone	GoB only		
35	Dhaka	Tangail	NG-8	Arid/plains	Non-CLTS	BRAC	BRAC
36	Dhaka	Mymensing	G-16	Arid/plains	GoB only	BRAC	BRAC
37	Dhaka	Gazipur	CL-5/D	Arid/plains	CLTS	PLAN Bangladesh	PLAN (funding UP WES post)
38	Dhaka	Narayanganj	G-24	Mixed	GoB only	BRAC	BRAC
39	Dhaka	Dhaka	G-1	Flood prone	GoB only		
40	Chittagong	B-Baria	NG-5	Flood prone	Non-CLTS		
41	Sylhet	Sylhet	G-4	Hilly area	GoB only	BRAC	BRAC
42	Sylhet	Sylhet	G-13	Hilly area	GoB only	BRAC	BRAC
43	Dhaka	Narshingdi	NG-3	Mixed	Non-CLTS		
44	Chittagong	Chittagong	CL-1	Mixed	CLTS		
45	Chittagong	Rangamati	G-DO-8	Hilly area	GoB donor (ESHWRA)		
46	Chittagong	Lakshmipur	G-DO-3	Flood prone	GoB donor (DPHE-Danida)	DPHE-Danida	
47	Chittagong	Noakhali	G-DO-2	Flood prone	GoB donor (DPHE-Danida)	DPHE-Danida	
48	Chittagong	Chandpur	G-17	Mixed	GoB only		
49	Chittagong	Chandpur	G-2	Mixed	GoB only	BRAC and SHEWA-B	BRAC and SHEWA-B
50	Chittagong	Comilla	G-6	Mixed	GoB only		
51*	Barisal	Barisal	G-DO-1	Coastal belt	GoB donor (DPHE-Danida)	DPHE-Danida	Caritas
52*	Dhaka	Narsingdi	NG-2	Arid/plains	Non-CLTS	None	BRAC-Pushti
53*	Dhaka	Munshiganj	G-3	Flood-prone	GoB only	None	None

*Unions studied by qualitative methods only; not covered by HH survey

Annex 3: Qualitative Study Activities

Interview/Observation	Number	Number of People Interviewed*	Number of Unions
Business site interviews (latrine parts producers and sellers, including some masons)	26	26	17
Interviews of pit cleaners	16	27	14
Focus group discussions	24	Approximately 145	13
Other group discussions	14	79	10
Child interviews, done in pairs or threesomes; children mostly ages 9-12, some younger	—	111	13
Key informant interviews with local men and women	52	52	17
Stakeholder interviews in unions and subdistricts (upazilas)	32	Approximately 50	13
Observations of UP elected leaders' household latrines	12	—	6
Observations of UP office latrines	53	—	53
Public latrine observations	27	—	—
Community latrine observations	4	—	3
Case studies	Approximately 100	—	17
Homestead (*bari*) maps	13	—	13
Social maps of villages, including information on defecation places	13	—	6

* Numbers fluctuated during the discussions in some groups

Annex 4: Factors Relating to Presence or Absence of Open Defecation in 18 Unions

District (Union Code)	OD Score [5= most OD and 1= least OD]	UP Chairman's Activity Level on Sanitation	Poor/ Ultra-poor, Survey HH (Percentage)	Approach	Geographical Zone	Social/Other Observations [special conditions in bold-face]
Bogra (NG-1)	4	Medium	57	Non-CLTS NGO, with follow-up	Arid/plains	NGO sanitation program going on; but **Kin group conflict** interferes with unified action against OD in one village; poor quality latrines have broken and caused injuries; **UP not very active** in promoting sanitation improvements; delegating the task to the NGO program
Lalmonirhat (CL-4/D)	4	Medium	68	CLTS/Dishari, with follow-up (at UP level only)	Seasonally flooded/ plains	**Weak efforts of UP**—more emphasis on local donations than on UP distribution; officer posted in UP to look after sanitation, but **no current NGO sanitation program**; much use of alternative latrine technology; **many very poor people**; **space too limited** to replace/move latrines; **no local latrine selling businesses in the union**.
Narsingdi (NG-3)	3.5	High	28	Non-CLTS NGO, no follow-up	Plains-mixed/ some low-land areas seasonally flooded	UP chairman actively interested in sanitation promotion; not a poor area; ample fruit-growing and poultry farm employment opportunities. Many HH members live abroad. Some **homeless/"floating" people** reported by children to sleep in school grounds and defecate in front of the school entrance verandahs. Open defecation found mainly in **village that is farthest away from UP headquarters**; **soil very hard** to dig, so latrine installation is difficult and expensive; not a densely populated area, many open areas invite open defecators. Even HHs that can afford latrines do not install them. **Social norms against open defecation are weaker than in some other places.**

continued

District (Union Code)	OD Score [5= most OD and 1= least OD]	UP Chairman's Activity Level on Sanitation	Poor/ Ultra-poor, Survey HH (Percentage)	Approach	Geographical Zone	Social/Other Observations [special conditions in bold-face]
Chapai-Nawabganj (CL-3)	3.5	Medium	47	CLTS, with follow-up	Arid/Barind Tract	**UP chairman works irregularly** on sanitation. Many **people are living on government owned land**; some **crowded settlements**; **one new settlement formed by river erosion refugees was built with no latrines**; large number of **agricultural laborers** staying in the union; people go for OD on land of **absentee land-owners**.
Naogaon (CL-2)	3	High	58	CLTS, with follow-up	Arid/plains	Chairman and UP not using any coercive techniques. Chairman objects to coercion on humanitarian grounds. **Villagers do not perceive rules against open defecation to be especially strong**.
Kurigram (GO-5)	3	High	65	GoB, with follow-up	Plains/*char* area but no floods or river erosion	**High percentage of very poor people**, few employment opportunities; **agricultural laborers** replanting rice seedlings; demands of poor for latrine parts not yet met by UP at time of study; sources of ring-slab latrines not widely known. **Pit cleaning cost** an obstacle to some poor HHs' latrine use.
Chandpur (GO-2)	2.5	Low	38	GoB, with follow-up	Plains/not seasonally flooded	NGO sanitation program going on, energetic UP chairman died, **low cost latrines break down.**
Chittagong (CL-1)	2.5	High	42	CLTS, no follow-up	Mixed-hilly and coastal belt, floods and flash floods	All open defecation observed in **one crowded, extremely poor settlement**. None in two other villages. Union has long history of sanitation program coverage.
Noakhali (G-Don-2)	2.5	Medium	22	GO donor, with follow-up	Plains/ seasonally flooded	Some poor people express a **cynical attitude** about ODF and resent not getting free latrines; hanging latrines still in use in some places.
Laksmipur (G-Don-3)	2.5	Medium	50	GO donor, with follow-up	Plains/ seasonally flooded. Some river erosion	Demand exists, but **large percent of poor households received no free latrines**; UP Chairman facing a corruption case; **party politics problem**; **ADP funds not being released** to the union; **water damages latrines**; many poor have broken, unused latrines.

District (Union Code)	OD Score [5= most OD and 1= least OD]	UP Chairman's Activity Level on Sanitation	Poor/ Ultra-poor, Survey HH (Percentage)	Approach	Geographical Zone	Social/Other Observations [special conditions in bold-face]
Gazipur (CL-5/D)	2.5	Medium	12	CLTS/Dishari, with follow-up (at UP level only)	Plains/not seasonally flooded	Large population of well-off people and **large population of "floating"/homeless** and people staying on publicly owned lands; some very **crowded settlements**; some **new construction without latrines**; no current sanitation program, but one officer posted in UP looking after sanitation. Former NGO staff says **people's motivation to re-build broken latrines is low**. [RRA methods used, not full, in-depth study]
Barisal (G-Do-1)	1.5	Low	N.A. (no survey done)	GO donor, with follow-up	Coastal belt (many water-ways)	ODF campaign and **earlier sanitation programs** have been successful in raising public awareness about sanitation. Number of latrine sellers is increasing, reflecting increased demand for ring-slab latrines. UP Chairman not actively promoting sanitation improvements. When latrine pits fill up, some open them up and drain contents into the canal.
Dhaka (GO-1)	1	High	12	GoB only, no follow-up	Flood-prone and erosion-prone sand-bar island (*char*) area	Union located near the capital city, Dhaka, and **influenced by urban practices. Employment opportunities and education levels better than in many other rural areas**. Many poor families have relatives living abroad and sending **remittances**. Most of larger national NGO's working in the area. ODF campaign attracted attention from national-level political leaders, and people of all levels of society—rich and poor alike. **"Floating" people and migrant laborers in the union, but they use school, mosque, and public or employers' latrines. UP continues to organize sanitation related meetings in schools and has village police follow up on problem cases**. ADP funds used to supply free latrines to poor households; four latrine parts sellers in the union.

continued

District (Union Code)	OD Score [5= most OD and 1= least OD]	UP Chairman's Activity Level on Sanitation	Poor/ Ultra-poor, Survey HH (Percentage)	Approach	Geographical Zone	Social/Other Observations [special conditions in bold-face]
Munshiganj (GO-3)	1	High	N.A. (no survey done)	GoB only, no follow-up	Flood-prone, low-lying area	The UP Chairman conducted an energetic ODF campaign after being inspired by sanitation promotion messages issued by the central government. Wealthy local volunteers provided material support with latrine donations, and schools were involved. **Present level of UP interest in sanitation remains high, and Chairman and UP members cooperate well with each other. UP has recruited a volunteer to follow up on sanitation** and other issues (arsenic in drinking water). **Union located near the capital city**, Dhaka. **Food-surplus area with relatively good employment opportunities.** Many poor families have relatives living abroad and sending **remittances**.
Narsingdi (NG-2)	1	Medium	N.A. (no survey done)	Non-CLTS NGO, no follow-up	Plains/high-land, not seasonally flooded	ODF campaign engaged participation of local elites and students, and **UP supplied ring/slab sets to poor people. Awareness levels high, social norms make open defecation unacceptable.** UP uses ADP funds to continue latrine distribution; **latrines are expected to be installed when new houses are built**. Some latrine owners clean their own pits, but pit cleaners available in a neighboring union. Eight latrine parts sellers in the union.
Sylhet (GO-4)	1	Medium	22	GoB only, with follow-up	Hilly	Social divisions between rich and poor, and between residents considered 'insiders' and 'outsiders' are strong. Renters living in "colonies" surrounded by barbed wire are not covered by any development programs; nor do they have adequate latrine access (55 households share one pit latrine); but they **cannot enter open lands**. Institutional support from the UP for sanitation not strong. Principal reason for absence of OD seems to be conservatism of local population. **Purdah is strictly observed. Social norms against open defecation are strong.** People less likely than people elsewhere to go onto others' lands for any purpose, even if they are not fenced-off. This mostly because **extreme class differences** limit social and physical communication. Absence of commons areas.

District (Union Code)	OD Score [5= most OD and 1= least OD]	UP Chairman's Activity Level on Sanitation	Poor/ Ultra-poor, Survey HH (Percentage)	Approach	Geographical Zone	Social/Other Observations [special conditions in bold-face]
Gopalganj (NG-4)	<1	Medium	37	Non-CLTS NGO, with follow-up	Coastal belt, seasonally flooded	Problems such as high transportation costs and limited availability of pit cleaners. Distribution of latrines by an NGO to ultra-poor households has increased coverage; clay rings popular for lining latrine pits. Social forestry programs in the ample jungle areas include regular monitoring and a sense of local ownership, discouraging open defecation in jungle areas.
Barisal (G-Do-4)	<1	High	35	GO donor, with follow-up	Coastal belt (many water-ways), seasonally flooded and often affected by cyclones	Canal-side defecation has been absolutely stopped and all hanging latrines over canals removed. This process took about 20 or 25 years to be completed. **UNICEF and DPHE-Danida have worked there for a very long time** and are generally known by the people. **Strong pressure from the UP and numerous local volunteers made this change**. Even pit cleaners were found to promulgate rules against open defecation. Canal water now used for all purposes except drinking; **people are very aware that removal of hanging latrines has eliminated pollution of this water source.** People at all levels of society were found to be enthusiastic about giving up open defecation for this and other reasons.

Annex 5: Maintenance Characteristics Checked of Improved or Shared Latrine During Field Observations

- Whether latrine feces are deliberately drained to an open ditch, field or water bodies (this is done by households to save pit emptying costs);
- Whether a strong bad smell emanates from the latrine;
- Whether feces are visible on the latrine floor or pan;
- Whether there is a gooseneck intact to the pan and whether feces are visible within the gooseneck;
- Whether flies or insects are visible near/within the latrine;
- Whether the latrine has an exit vent pipe and is in good condition;
- Whether the pit/ ring is leaking profusely;
- Type of latrine slab and the pan;
- Distance of water source from the latrine;
- Height of the latrine pan/floor as compared to living area; and
- Distance of the latrine from the main bedroom.

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