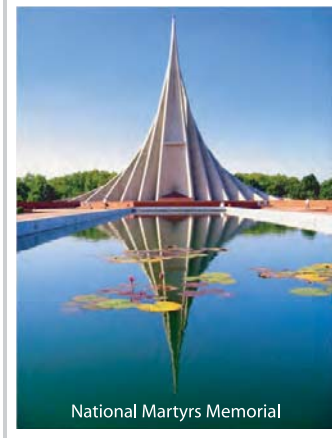
BANGLADESH COUNTRY PAPER

Fifth South Asian Conference on Sanitation

SACOSAN-V, 2013

Kathmandu, Nepal

Sanitary latrine in rural Bangladesh



National Martyrs Memorial

Handwash in Practice

Local Government Division
Ministry of Local Government, Rural Development and Cooperatives
Government of the People's Republic of Bangladesh

Father of the Nation

Bangabandhu Sheikh Mujibur Rahman

(1920-1975)

Fifth South Asian Conference on Sanitation (SACOSAN-V)

Bangladesh Country Paper

22-24 October 2013
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Glossary of Abbreviation and Terms

ADB	Asian Development Bank
ADP	Annual Development Programme
BAEC	Bangladesh Atomic Energy Commission
BBS	Bangladesh Bureau of Statistics
BDHS	Bangladesh Demographic & Health Survey
CBO	Community Based Organization
CC	City Corporation (largest Municipalities)
CHT	Chittagong Hill Tracts
CLTS	Community-Led Total Sanitation
DCC	Dhaka City Corporation
DPHE	Department of Public Health Engineering
EED	Education Engineering Department
ESA	External Support Agency
FSM	Faecal Sludge Management
GDP	Gross Domestic Production
GoB	Government of Bangladesh
GLAAS	Global Analysis and Assessment of Sanitation and Drinking Water
HDRC	Human Development Resource Centre
HIS	Health Impact Study
HtR	Hard to Reach
icddr,b	International Centre for Diarrhoeal Disease Research, Bangladesh
ICWG	Inter Country Working Group
IDWSSD	International Drinking Water Supply and Sanitation Decade
INGO	International Non-Government Organization
JMP	Joint Monitoring Programme
LGD	Local Government Division
LGED	Local Government Engineering Department
LGIs	Local Government Institutions (e.g. UpazilaParishad, Union Parishad, Paurashava)
MDGs	Millennium Development Goals
MICS	Multiple Indicator Cluster Survey
MoLGRD&C	Ministry of Local Government, Rural Development & Cooperatives
NAMIS	National Management Information System
NFWSS	National Forum for Water Supply and Sanitation
NGO	Non-Governmental Organization
NILG	National Institute of Local Government
NSS	National Sanitation Strategy 2005
ODF	Open Defecation Free
Paurashava	Municipality
PRA	Participatory Rural Appraisal
PSP	Private Sector Participation
PSU	Policy Support Unit
SAARC	South Asian Association for Regional Cooperation
SDP	Sector Development Plan
SIP	Sector Investment Plan
SMC	School Management Committee
SOCMOB	Social Mobilization
UNO	Upazila Nirbahi Officer
Upazila	Sub-district
UP	Union Parishad (Lowest tier of Local Government)
WASA	Water Supply & Sewerage Authority
WASH	Water Supply, Sanitation and Hygiene
WatSan	Water Supply and Sanitation

1 INTRODUCTION

1.1 Country Profile

Bangladesh emerged as an independent and sovereign country in 1971 and it is one of the largest deltas of the world. Having a total area of 147,570 sq. km and population of about 155 million, the population density is about 1050 person per sq.kilometre. Bangladesh has a long coastline with Bay of Bengal in the South and a border with India in the West and North and Myanmar in the East. Nearly 72% of the country's population is living in rural areas while 28% in urban settings. GDP growth rate is 6.18, with GDP per capita reaching USD 1044 (2012-13, BBS). Despite an overall decline in the incidence of poverty and despite rises in household income, gaps in poverty across different occupation groups, gender and region still persists.

Bangladesh has 7 Administrative Divisions, 64 Districts, 486 Sub Districts (upazila), 4546 Union Parishads, 11 City Corporations and 319 Paurashava (Municipalities) where the Local Government Division, Department of Public Health Engineering (DPHE), Local Government Engineering Department (LGED), Water Supply and Sewerage Authorities (WASAs), Local Government Institutions (LGIs) providing sanitation services to the rural and urban population in Bangladesh. The development partners, INGOs, NGOs and civil society organizations are also contributing significantly to improve the sanitation scenario of Bangladesh.

2 INSTITUTIONAL SET-UP FOR SANITATION SECTOR

The statutory responsibility for the sanitation sector is vested in the Ministry of Local Government, Rural Development and Cooperatives (MoLGRD&C). Within this Ministry, the Local Government Division (LGD), shares the responsibility of policy decisions, sectoral allocation and funding, as well as project appraisals, approval, evaluation and monitoring with the Planning Commission and the Ministry of Finance. LGD is also responsible for the administrative control of DPHE, LGED, WASAs and LGIs. WASAs established in selected City Corporations are responsible for the development & delivery of water supply, sewerage and drainage. DPHE is responsible for public water supply & sanitation development activities in rural and the urban areas not covered by the WASAs. As a Lead government agency in sanitation sector, DPHE starts piloting on sanitation with the assistance of WHO for demonstration of hygienic & low cost sanitary latrines in 1962. Since then, DPHE is the pioneer for country wide sanitation movement through promoting of affordable technologies, private sector & NGOs participations, monitoring & co-ordination all activities at field level through Sanitation Secretariat established within DPHE by LGD. In addition to DPHE, LGED, also implements infrastructure development project including components of sanitation & drainage projects mostly in urban areas and NILG performs capacity development on good governance issues of local government bodies including municipalities. Ensuring the quality of sanitation services for all is the responsibility of the lowest tier of Local Government Institutions (LGIs).

LGIs also play a significant role in financing of sanitation and extending support for sanitation to the poor. A study to assess the impact of withdrawal of the sanitation subsidy conditionality on the Annual Development Program (ADP) block grant to Union Parishads (Ups) (WaterAid et al, 2011) found that:

- The targeting of sanitation subsidies to non-eligible households was very low (<4%)
- The removal of the 20% conditionality hadn't reduced the allocation by UPs for sanitation.

This indicates that UPs could be considered an important public financier of rural sanitation (after households themselves) at an estimated 12 million USD per year and that financial support for the poor reaches the poor.

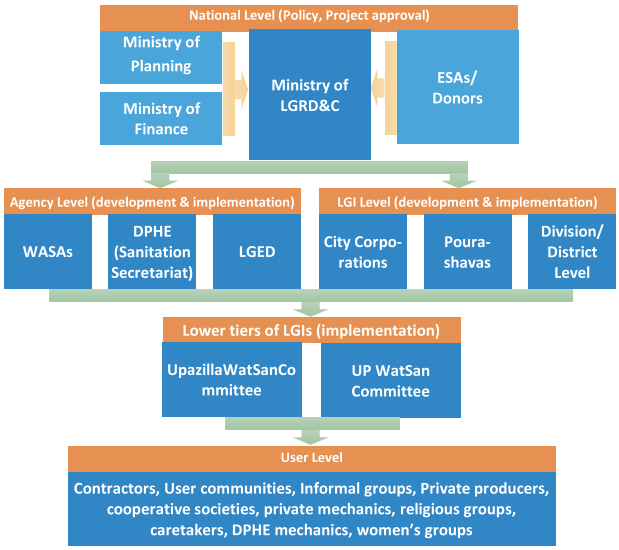

Figure 1: Institutional set-up of the sanitation sector in Bangladesh

Coordination at the national level between government agencies, NGOs, development partners and the private sector is done through the National Forum for Water Supply and Sanitation (NFWSS) established in LGD. Coordination at the local level is undertaken by Water Supply and Sanitation Committees (WatSan Committees) established in the LGIs. The sector is also supported by multilateral agencies, development partners, international & national NGOs. The institutional set-up of the sanitation sector in Bangladesh is shown in Figure 1.

3 STATE OF SANITATION AND CHALLENGES

A nationwide baseline survey conducted for the first time in 2003 revealed that improved sanitation coverage was only 33% and 42% of the population had no latrine for defecation. After hosting the first SACOSAN in October 2003, the Government, NGOs, Civil Society and media came together to improve the sanitation situation. The political commitment of the government and a multi-stakeholder approach were instrumental in improving the sanitation coverage in Bangladesh. According to the JMP report in 2012, only 4% of the population are practicing open defecation, 15% of the population are using unimproved latrines, 25% of the population are sharing improved latrines and 56% of the population are using improved latrines (WHO/UNICEF, 2012). According to JMP, open defecation reduced from 33% in 1990 to 4% in 2010 (Figure 2).

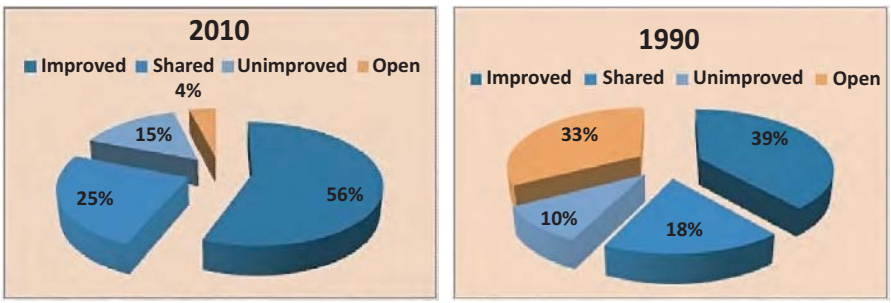

Figure 2: Progress in sanitation coverage in the last two decade (WHO/UNICEF, 2012)

Within South Asia, Bangladesh is performing relatively well compared to others for the elimination of open defecation and the population covered by improved sanitation (Figure 3).

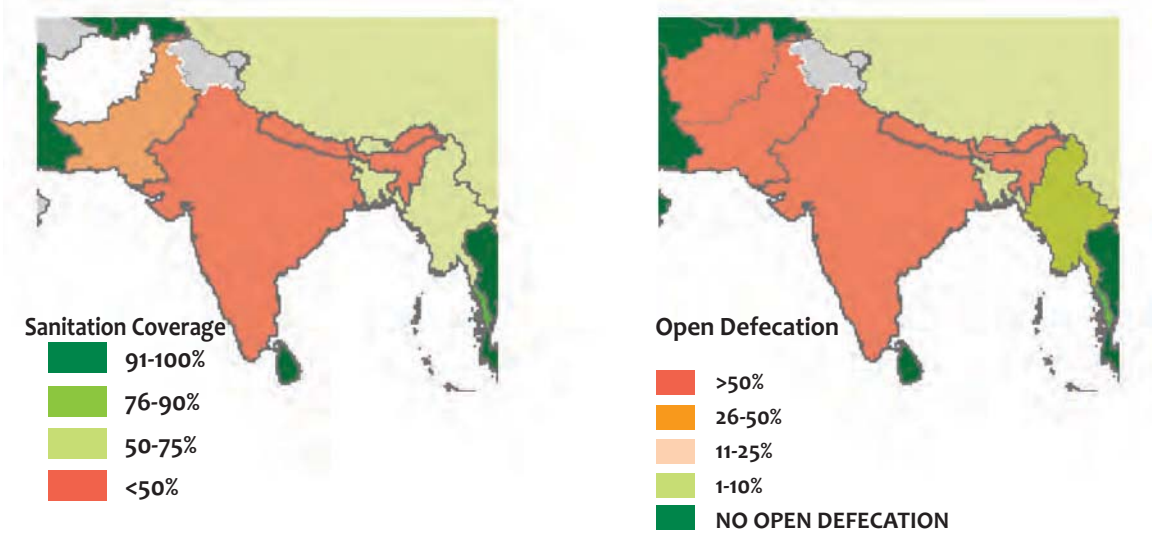

Figure 3: Sanitation situation in respect of coverage and open defecation in South Asia. (WHO/UNICEF, 2012)

Most importantly, Bangladesh has significantly reduced the percentage of the poor defecating in the open. This was also appreciated by the Nobel laureate Amartya Sen. In an interview to The Guardian newspaper on 16 July 2013, coinciding with the publication of his latest book, An Uncertain Glory, co-authored with Jean Dreze, he expressed that in tiny Bangladesh only 8 percent of houses lack toilets compared to 49.2 percent in India.

Bangladesh has made significant progress on MDG 7 in reducing the population without access to improved water supply and basic sanitation facilities.The excellent progress of Bangladesh in the sanitation sector is however, challenged by quality of service provision issues particularly in the Hard to Reach Areas i.e. hilly regions, riverine islands (chars), swamp (beels and haors), tea gardens, water-scarce areas. There are still challenges in providing access in the climate change vulnerable areas, as well as in rapidly growing urban slums. Moreover appropriate sanitation system for the floating people is also an issue of concern. In the Hard to Reach Areas, only 35.8% families have improved sanitation facilities. Frequent floods, cyclones and other natural disasters have caused damage to sanitation facilities lowering the sanitation coverage in these affected areas. Challenges are also there regarding sustainability, hygiene issues and total sanitation coverage.The status of sanitation indicators in the areas indicated by the 5th Inter Country Working Group (ICWG) is shown in Table 1.

Figure 4 shows the trend in progress of sanitation based on the JMP report 2012 indicating that Bangladesh will soon eliminate open defecation and by 2015 only 12% of the population will be using unimproved latrines. However, the country is not on track to achieve the MDG target with improved sanitation coverage likely to be about 8% below the MDG target at the end of the 2015.

With its high population density, approximately 25% of the population in Bangladesh use shared latrines - which is not classified by JMP as improved sanitation. If shared latrines are considered to be 'improved', then Bangladesh has already surpassed the 2015 MDG target and at the current rate will exceed this by about 18% in 2015. However, hygienic condition of shared latrines is also a matter of concern.

Table 1: ICWG sanitation status indicators

Indicator Area	Selected Indicators	Status (Year)
Access/ Practice	% of population using improved sanitation	56 (2010)[1]
	% of population practicing open defecation	4 (2010)[1]
Health and Education	% of schools with functional toilets separate for boys and girls	73 (2011)*
	% of schools having functional hand washing facilities	17 (2011)[2]
Equity	The gap in improved sanitation coverage by wealth quintile (between poorest and richest)	53 (2008)[3]
	% of total sanitation budget allocated and utilized for poor and marginalized	Around 20 (2003-2012)**
Finance	% of total sector (WASH) budget allocation to sanitation and hygiene	32 (2010-11)[4]
	% of total sanitation and hygiene budget utilization	90 (2010-11)[4]

(1. JMP Report 2012, 2. HRDC 2011, 3. BBS/ Unicef 2009, 4. WaterAid, 2012)
** 59% in poor sanitary condition and unusable (HRDC 2011)*
** * 20% of the ADP Block Grant to Upazila Parishad allocated for sanitation of the poor and marginalized (LGD)*

According to Figure 2, the progress in population coverage by improved sanitation (< 1% per year) is less than the rate required to attain the 2015 MDG target (1.24% per year) which indicates the progress is not satisfactory if shared latrines are not considered to be improved.

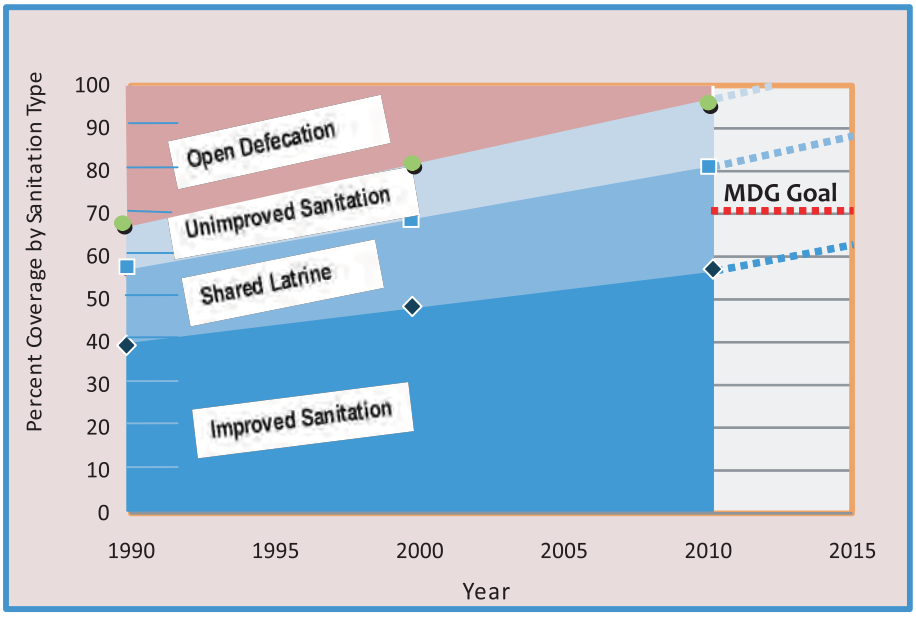

Figure 4: The trend in sanitation coverage in Bangladesh (WHO/UNICEF, 2012)

4 SANITATION POLICY AND STRATEGY

The political commitment of the Government of Bangladesh (GoB) to sanitation has been the major driving force for the sanitation movement in the country. The high level of Government's commitment has been reflected in the various policy reform initiatives to improve effectiveness and efficiency of service delivery in this sector. The Policy Support Unit (PSU) of LGD with support & assistance from DPHE & other stakeholders,

provides the technical assistance to the Government of Bangladesh to develop water supply and sanitation related policies, strategies and guidelines. The women, children, differently able people, indigenous communities, disadvantaged and hard core poor people and floating population are mainstreamed in the national policies, strategies and guidelines of the water supply and sanitation sector in Bangladesh. The major policies and strategies guiding the sanitation movement in Bangladesh are:

- The National Policy for Safe Water Supply and Sanitation, 1998
- The National Strategy for Accelerated Poverty Reduction, 2005 & 2008, & The Medium Term Budgetary Framework, 2008
- The National Water Policy, 1999 & National Water Management Plan, 2004
- The National Sanitation Strategy, 2005
- The Pro-Poor Strategy for Water and Sanitation, 2005
- The Sector Development Plan, (2011-25)
- The sixth Five Year Plan (SFYP), 2011

Since SACOAN-IV in Colombo, 2011, the Government of Bangladesh has approved the following new strategies and policies for the sector

- The National Strategy for Water and Sanitation in Hard to Reach Areas of Bangladesh, 2012
- The National Hygiene Promotion Strategy for Water Supply and Sanitation Sector in Bangladesh, 2012.
- The National Cost Sharing Strategy for Water Supply and Sanitation in Bangladesh 2012.
- The Water Act, 2013

The National Policy for Safe Drinking Water Supply and Sanitationis the basic policy document governing water supply and sanitation sector. This is supported by the national sanitation strategy, providing a uniform guideline for all to delineate the ways and means of achieving the national targets. The pro-poor strategy for water and sanitation services has been developed to address poverty, as well as to serve the hard-core poor. The Government of Bangladesh (GoB) also approved a Sector Development Framework (SDF) in 2004 that guides the planning, coordination and monitoring of all future sector development activities with a focus on devolution of authority to LGIs, user participation, economic pricing, public-NGO-private partnership, and gender-sensitivity.

In 2011, the government revised the Sector Development Program (2005) and prepared the Sector Development Plan for 15 years (FY 2011-25) for the water and sanitation sector. This path-breaking initiative undertaken by LGD has sought to sketch a bottom-up road map for providing safe drinking water and sanitation for all in a coordinated manner by all the sector stakeholders.

The Govt. of Bangladesh approved Sixth Five Year Plan (SFYP) on July 2011 with key focus on strategies, policies and institutions to help guide the private sector in helping Bangladesh achieve the goals set in government's long term socio economic target `Vision 2021' and the Perspective Plan 2010-2021. It is a strategic and indicative plan rather than traditional investment plan. The set target, if achieved will transform the country's socio-economic environment from a low income economy to the first stages of a middle income economy (MIC). The SFYP is also based on other targets like Millennium Development Goals, SAARC Development Goals and other agreed global and regional development goals. According to the targets of SFYP proportion of urban & rural population with access to sanitary latrines will be 100% & 90% respectively by 2015 and both will reach 100% by 2021.

The 'National Cost-Sharing Strategy for Water Supply and Sanitation in Bangladesh, 2012' provides functional ways and means to make services equitable and sustainable, at an affordable cost. The "National Strategy for Water and Sanitation in the Hard-to-Reach Areas of Bangladesh, 2012" has been formulated to improve safe drinking water and sanitation coverage in hydro-geologically and socio-economically difficult areas where access to services is low. The "National Hygiene Promotion Strategy for Water Supply and Sanitation in Bangladesh, 2012" has been formulated to promote the sustainable use of improved water supply and

sanitation facilities and to create an enabling environment framing for hygiene practices that reduce water and sanitation related diseases through an integrated and coordinated approaches.

The Government of Bangladesh has also recently approved The Water Act, 2013 where the use of water for drinking and household purposes has been identified as the 1st and 2nd priority respectively.

5 SANITATION MONITORING SYSTEM

The National Sanitation Strategy (2005) and the Sector Development Plan (FY 2011-25) have clearly described the sanitation monitoring, verification and reporting system from the field level to the national level. The Union Parishads and Paurashavas, as the lowest tier of the local government, are responsible for collecting information from the respective WatSan committees at the ward level. Where Community Based Organizations (CBOs) exist, they assist the WatSan Committees and Union Parishad to collect and update sanitation information. Ongoing WSS projects support the Union Parishads and Pourashavas in monitoring and reporting progress to the DPHE office at Upazila level. The DPHE, facilitates reporting at the upazila and district levels. The upazila level staff compiles monthly data on sanitation coverage collected through LGIs that is then reported to the Sanitation Secretariat located in DPHE via the District office. In addition, motivated community groups have developed and introduced innovative monitoring systems at the community level to collect, display and document sanitation related information (i.e. child-led monitoring, community–led mass monitoring).

At the national level, the LGD under the MoLGRD&C with collaboration from DPHE endeavouring to introduce standard monitoring formats for different government organizations and the NGOs to be collated through the National Management Information System (NAMIS). The System has been managed by the LGD (PSU)/DPHE and reports to the National Forum for WSS which monitors and coordinates different ministries & non-government organizations in the sanitation sector. Relevant sector data generated from MICS, Census, BDHS surveys are collated and made available by the Policy Support Unit of MoLGRD&C with assistance from DPHE.

6 SANITATION PROMOTION APPROACHES

Bangladesh first placed an emphasis on water and sanitation during the International Drinking Water Supply and Sanitation Decade from 1980-1990. In 1991, a 10-year national sanitation strategy was formulated and a social mobilization approach known as SOCMOB was launched in 1993 through DPHE-UNICEF joint collaboration. The project had a great role in awareness building, demand raising & social marketing on sanitation. The home-made latrines promoted during SOCMOB severely damaged during floods and the program was later discontinued in 1998. Sensitization for integrated approaches at grass root level was institutionalized with intensive care taker family training.

The sanitation movement in Bangladesh was reinvigorated with reinforced political commitment in 2003 by the 1st South Asian Conference on Sanitation (SACOSAN-I) and the declaration of a time-bound target to achieve sanitation for all.

A national baseline survey conducted by the Government of Bangladesh in October 2003 revealed that only 33% of the population were using hygienic latrines, 25% unhygienic latrines and an astounding 42% did not have access to any kind of latrine and were resorting to open defecation. These striking findings led the government to launch the National Sanitation Campaign to improve sanitation coverage in the country. The Government of Bangladesh adopted Community-Led Total Sanitation (CLTS) approach for its National Sanitation Program. CLTS involves the facilitation of a process to inspire and empower rural communities to stop open defecation

and to build and use latrines, without external subsidies. Through the use of PRA methods, community members analyse their own sanitation profile including the extent of open defecation and the spread of faecal-oral contamination that detrimentally affects everyone. The CLTS approach ignites a sense of disgust and shame once they collectively realize the terrible impact of open defecation. This realization mobilizes them into initiating collective action to eradicate open defecation and improve the sanitation situation.

Based on the success of ODF through community-led approach, many development partners in Bangladesh are now introducing some successful new or hybrid approaches to make sustainable shift into improved sanitation and hygiene from ODF. Amongst all the following are some approaches already made remarks in the sanitation development trend in the country-

a. Sanitation marketing and business development
b. Community managed WASH (CMWS)
c. Ecological sanitation
d. LGI led sanitation
e. Youth and child led WASH
f. Empowering women through WASH
g. Value based sanitation and hygiene promotion
h. Urban slum based water and sanitation

The sanitation movement in Bangladesh is a multi-stakeholder approach involving GO & NGOs, CBOs &development partners, the media &local leaders, LGIs and the private sector (Figure 5).

Figure 5: Framework for Total Sanitation Process

At the apex level, the Local Government Division along with the National Sanitation Taskforce Committee developed the National Action Program and undertook the monitoring of the program. This included a baseline survey, mobilization of community, the preparation of action plans and implementation of the plan and monitoring of the process. The most important activities are health and hygiene education campaigns to enhance awareness, change attitudes towards sanitation and promote hygiene practice followed by the construction, installation and usage of latrines and the monitoring of progress of installation of latrines and behavioural change. The chairman and members of the Union Parishads, influential members of the community, Imams (Religious Leaders) of the mosques, health workers and WatSan Committees, cultural and children groups formed for the campaign played the key roles in achieving Total Sanitation. The GOs and NGOs, worked as facilitators in the process to achieving total sanitation. The units achieved total sanitation have been shown in Table 2.

Political Commitment has been a major driving force for achieving progress in sanitation sector of the country. Sanitation Task force has also been formed at the District, sub-district, Union and Ward level and started observing the month of "October" as sanitation month each year since 2003. Government's willingness to work in partnership with NGOs, development partners, civil society, media and private organizations have provided a wider platform for forming multi stakeholders partnerships that played a catalyst role and created a synergistic effect in achieving the goal of sanitation for all.

Table 2: Number of administrative units achieved 'Total Sanitation'

Administrative/Local Govt. Unit	Administrative Head	Total No. of Units in the Country	Unit Achieves Total Sanitation
Union Parishad (UP)	UP Chairman	4527	1387
Upazila (Sub-district) Parishad	UNO (Upazila Nirbahi Officer)	486	114
Districts	DC(Deputy Commissioner)	64	4
Paurashava (Municipality)	Mayor	319	58
City Corporation	Mayor	11	-

7 DIFFERENT ASPECTS OF SANITATION

7.1 School Sanitation

Poor access to sanitation facilities in schools led the government to launch the school sanitation program. Importantly, the government encouraged a partnership approach with LGIs and NGOs, Development Partners and private sector, the School Management Committees (SMCs) and civil society to increase access to sanitation facilities in all schools.

As a lead government agency, DPHE has constructed a large number of school latrines as part of institutional sanitation with financial support from development partners. This includes the SHEWA-B project supported by UNICEF that has constructed separate latrines for girls & boys in primary schools & made hygiene education available in the class room. Student Brigades and SMC have been established for the proper use and maintenance of latrines as well as the overall cleanliness of the school premises. They conduct sanitation & hygiene promotion activities with participation from other students, regardless of whether they are boys or girls, rich or poor. Children are encouraged to spread this knowledge at home, among their peers and in their communities.
A special project in the name of `Third Primary Education Development Program (PEDP-3)' is being implemented jointly by DPHE and Ministry of Primary Education where DPHE is responsible to provide WASH

BLOCK (water supply and sanitation facilities) for primary schools in different phases. DPHE is also working with the Ministry of Education to provide water supply & sanitation facilities in 400 secondary schools of 125 Upazila under `Secondary Education Quality and Access Enhancement Project (SEQAEP)'. The lack of separate latrines for girls and menstrual hygiene facilities in secondary schools are a major factor in female absenteeism and dropouts.To address this issue, the project is working with the secondary school authorities to provide separate latrines with adequate water supply and waste disposal facilities for girls in addition to provide hygiene education in all secondary schools in the program areas.

In Bangladesh, although the access to water and sanitation facilities is higher than in many other countries, the conditions of a major portion of the existing WASH facilities in schools are poor, often due to overcrowding, inadequate maintenance of the facilities compounded by insufficient knowledge and acceptance of basic hygiene messages. The lack of access to safe and adequate sanitary facilities affects children, especially with girls of menstrual age being particularly affected, due to inadequate, or a complete absence of private and clean sanitary facilities forcing the girls to miss school for up to one week each month.

A recent study on access to WASH facilities in secondary schools, supported by UNICEF/HRDC (May 2011), indicated the challenges in spite of lot of success stories:

- 84% of the schools have access to drinking water source within the school compound however, 60% of these water sources were reported to be non-functional
- 73% of the schools have separate latrines for boys and girls however, 59% of these facilities were found to be in poor sanitary condition and unusable - primarily attributable to a lack of, or inadequate allocation of resources for regular cleaning and maintenance
- 17% of the schools provided soap/detergent at or near the hand-washing point however, the practice of hand washing before eating and after latrine use was very low, estimated at 5.5% and 5.9% respectively.
- 42% of the schools provided waste baskets.
- Hygiene and sanitation issues are not adequately covered in the curriculum.
- Almost no menstrual hygiene management facilities in schools.

7.2 Urban Sanitation

With rapid urbanization, the challenges of meeting the sanitation needs of the urban citizen are becoming more prominent. The progress in urban sanitation during last two decades is shown in Figure 6 with the major gains being in the elimination of open defecation amongst the poorest quintile.

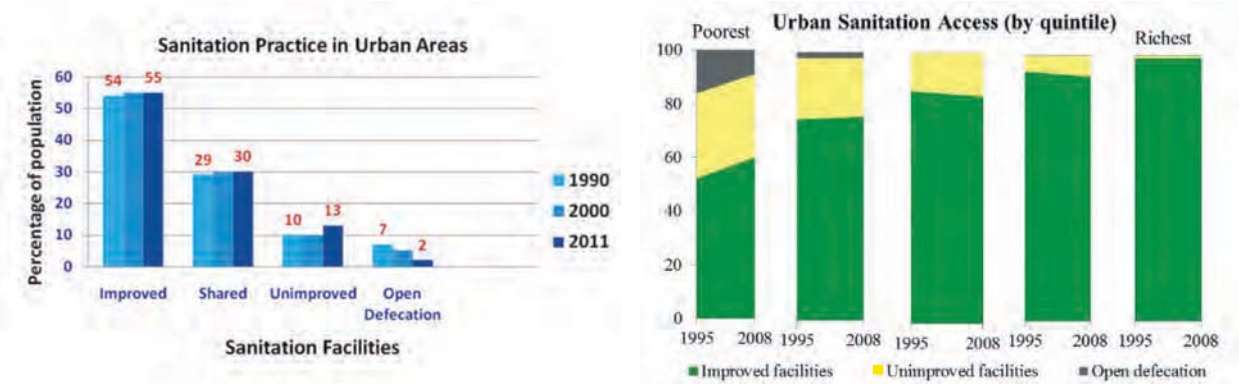

Figure 6: Urban sanitation progress (WHO/UNICEF, 2013 and BBS/UNICEF, 2009)

The Government of Bangladesh is implementing a number of projects under different govt. agencies to serve the urban sanitation needs of large cities and secondary towns. As a govt. mandated agency, DPHE is working on sanitation, drainage & waste management issues especially for the small town cities like municipalities or growth centres. The main investments in urban sanitation has been by nationwide sanitation projects as well as recently completed GOB-Danida& GOB-Unicef project which was implemented in different phases. Moreover a new project has been started with an intensive component of urban sanitation and financial support of the World Bank.

City corporations (CCs) and municipalities have been encouraged to collaborate with NGOs in addressing sustainable access to sanitation facilities, especially for low income communities. LGED, is another government agency working on urban sanitation, drainage and waste management area as a component by different urban development project funded by different development partners. The Urban Partnership for Poverty Alleviation Project (UPPR) being jointly implemented by LGED, UNDP and UN-Habitat with assistance from UKAid has played an important role in improving the sanitation situation in the urban slums in 24 largest municipalities and all city corporations in Bangladesh. During the past 10 years, more than 2,500 Community Development Committees (CDCs: Organization of slum people) was formed to provide improved sanitation services for more than 1.2 million poor and extreme poor of 235,000 households through construction of 68,700 twin pit latrines and 530 community latrines. In addition they have constructed 310 km drains to improve the living environment in the slums. CDCs have collected over US $2.1 million in operation and maintenance fund and deposited the amount in fixed deposit accounts in banks. The interest earned from this will be used for the ongoing maintenance of their community assets as decided by the community with additional support from the municipalities.

The Water and Sewerage Authorities (WASA) in some of the CCs has varying degrees of capacity and ability to respond to the needs of its citizen. Dhaka Water and Sewerage Authority (DWASA), the largest Water and Sewerage Authority among all WASAs, has faced an ever increasing demand as it has more than 0.2 million commuters every day and subsequently increased demand of public toilets. The Dhaka City Corporation (DCC) is seeking to develop better operation and maintenance models for public toilets with NGOs and private corporations. Mobile toilet services have also been initiated to commuters in Dhaka by some NGOs and DCC offers a similar facility for large gatherings during various festivals and functions. DCC has now been segregated into North DCC & South DCC in an attempt to ensure better services for its citizen.

Faecal sludge management is emerging as a challenge that needs to be tackled. Most of the faecal sludge is entering water streams via the storm drainage system. Only 20 percent of Dhaka city has sewerage system and no other cities or towns have a sewerage system. DPHE-Unicef project piloted construction of compost plants in different CCs & municipalities that were subsequently handed over to municipalities for operation & maintenance with transferred technologies to LGIs. Secondary Town Water Supply & Sanitation Sector (GOB-ADB) project run by DPHE, initiated a low cost technology of seepage/faecal sludge treatment plant at 16 Pourashavas last year. Some constructed septage/faecal sludge treatment plant have come in operation recently and at Laxmipur Paurashava it has proven successful at the initial stage both technically and financially. The basic concept of this technology is to collect septic tank water and sludge through 'vacutug' and convey to the sludge drying bed. Treated water discharges in agricultural land or sewer or water bodies and the composted sludge produces fertilizer for agricultural use. Opportunities for turning sludge into energy or fertilizer is an important option that deserves further consideration. Some INGOs and NGOs are also significantly contributing for faecal sludge management action research in Bangladesh like Water Aid, BRAC, IRC, Practical action.

Drainage is considered to be an essential part of environmental sanitation. To some extent, WASAs and municipalities have been able to provide drainage services in urban areas. Over the last couple of years GoB has made considerable investments in improving the drainage system of Dhaka city but greater investments need to be made in other cities.

Solid waste management is a growing challenge in the face of rapid urbanization. In most cities, collaboration with the private sector & NGOs has resulted in efficient house-to-house collection and recycling systems. In some cities, this is then linking up with the solid waste transfer & disposal systems where waste is being transformed into manure and used as landfills. Medical waste in cities is also an issue to address as not only an environmental hazard but also a health hazard.

7.3 Ecological Sanitation

The EcoSan urine diverting dry toilet was introduced in Bangladesh in 2004. Its structure is long lasting and can be constructed above ground at homestead level where faeces containing vaults are made water tight against the maximum flood level. In addition to being flood resistant, the EcoSan toilet users are able to use processed human excreta and urine as fertilizer displacing synthetic fertilizer and replenishing soil health.

Although the multi-dimensional benefits of the EcoSan toilet is already recognized in Bangladesh but its limitations are the comparatively high construction cost and repulsive smell of urine as a fertilizer. To make the EcoSan toilet affordable and user friendly, different kinds of research and study is going on. Development partners such as JICA and UNICEF, different NGOs and Government of Bangladesh are undertaking different initiatives on EcoSan toilets. DPHE has started piloting of EcoSan toilet with Japan Association of Drainage and Environment (JADE) in different areas of Bangladesh since 2004. Some other NGOs are also working on sustainability of EcoSan Toilets.

7.4 Sanitation and Health

Adequate sanitation, proper hygiene, and safe water are fundamental to good health and social and economic development. Improvements in one or more of these three components can substantially decrease the rates of mortality & morbidity, reduce the severity of various diseases, and improve the quality of life of numerous populations, particularly children in developing countries [Esray et al. 2003].

Diarrhoeal diseases are, globally, the fifth leading cause of mortality in children under five, making it one of the most important faeco-oral illnesses [WHO, 2011]. The World Health Organization (WHO) estimates that improving sanitation alone would reduce the diarrhoeal morbidity rate by 37.5%. At any given time, close to half of the urban populations in developing countries have a disease associated with poor sanitation, hygiene, and water.

Since the increase in sanitation coverage in Bangladesh, the under 5 child mortality rate is steadily decreasing throughout the country (Figure 7). Between 2003 and 2011, the under 5 child mortality rate declined from 88 to 53 deaths per 1,000 live births and the infant mortality rate declined from 65 to 43 deaths per 1,000 live births. At the same time, there is an 85% reduction of "confirmed" diarrhoea as a cause of death, from 8 percent in 2004 to 3 percent in 2011. There is also a reduction in the prevalence of diarrhoea reported in children under the age of 5 from 8% in 2004 & 10% in 2007 to only 5% in 2011 [BDHS 2011]. However, the diarrhoeal incidents among children has not reduced as expected over time for the past few years. Studies are being carried out to understand why the gains in sanitation in Bangladesh have not resulted in a significant decrease in the incidence of diarrhoea.

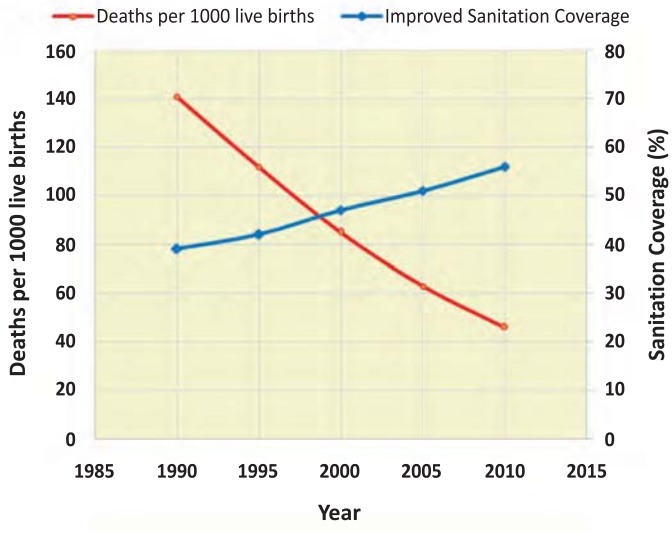

Figure 7: Decreasing trend under 5 mortality with increasing sanitation coverage (WHO, 2013)

In Bangladesh, the emphasis has been placed on the confinement of faces rather than the construction of a durable sanitary latrine. This is why the total economic impacts of inadequate sanitation in Bangladesh still amounts to a loss of BDT 295.5 billion (US$4.2 billion) each year or 6.3% of the gross domestic product in 2007 (WSP, 2012) with the major contributor to the economic costs being the health burden (Figure 8).

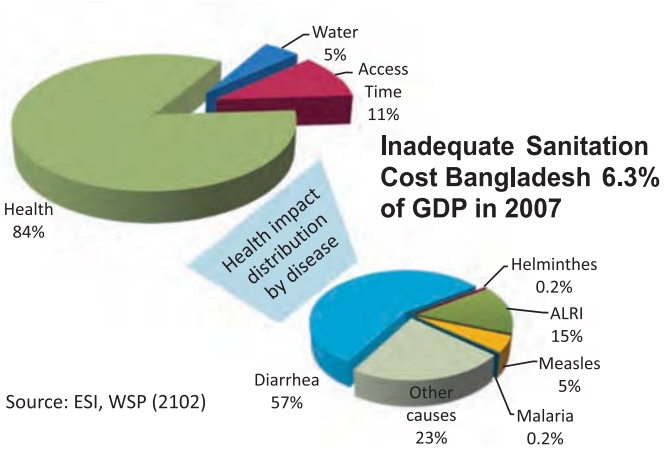

Figure 8: Impact of Inadequate Sanitation

Recent research about children in rural Bangladesh published by Lin and colleagues (2013) documents the link between poor sanitation, a chronic intestinal disease causing mal-absorption of nutrients (called environmental enteropathy), and reduced child growth. As an early paper in documenting this pathway, Bangladesh is continuing to be at the frontier of research into the catastrophic consequences of poor sanitation on child health.

Analysis of data on the relationship between sanitation and nutrition, demonstrates the high correlation between open defection density and childhood stunting (Figure 9). Each data point in this graph is a collapsed Demographic and Health Survey round; therefore, each point is a country in a year with the size of the circle representing the relative population of the country. The vertical axis is the average height-for-age z-score of children under 5 in that country-year (stunting), scaled using the WHO 2006 reference population. The horizontal axis is the log of the population density of people who defecate in the open, computed as the natural log of the product of the fraction of households in the country reporting open defecation and the population density of the country in that year (Spears, 2013). The steep increase in child-height-for-age in Bangladesh that is associated with a decrease in open defecation density could also be associated with the effectiveness of family planning, gender equality and oral rehydration salts (ORS) in Bangladesh.

Reproductive health must be considered when planning sanitation infrastructure and programs. Numerous studies throughout the world have demonstrated the strong relationship between poor menstrual hygiene practice and non-sexual reproductive tract infections (RTIs). Poor personal hygiene practice can also impact male reproductive health. Unfortunately, some sanitation programmes still remain silent on this urgent matter. Menstrual management tends to be ignored in latrine design and construction and is excluded from hygiene education in many parts of the world. Even reproductive health and preventive health programmes in developing countries often do not address this sensitive issue. However, there are hygiene awareness campaigns that have incorporated learning materials such as flash cards and dolls that appeal to adolescent females in order to overcome the lack of existing reproductive health education. Additionally, many partners have begun to incorporate menstrual management in latrine design, especially for schools. Nevertheless, there is still more attention and effort needed at the community level. Only in late 2005, development partners started community discussions on menstrual hygiene in Bangladesh. This is now an integral part of sanitation programs and has recently been included in the National Hygiene Promotion Strategy in 2012.

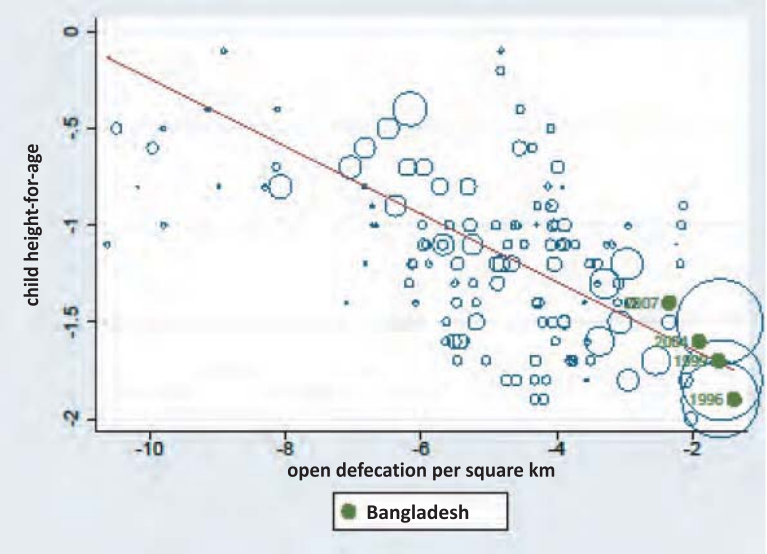

Figure 9: Open Defecation Density vs. Stunting

A recent study from Bangladesh reveals that 40% of the complementary food prepared for children is contaminated. Proper hygiene behaviour can reduce this contamination and break the cycle of infection and malnutrition among these children. Therefore, priority must be given to interventions addressing handwashing with soap during food preparation and child feeding. For instance, regular observance of "World Hand Washing Day" could depict the importance of personal hygiene. DPHE-UNICEF-ICDDR,B collaborative action research also advocates for such priority for comprehensive interventions.

Bangladesh received the UN award for its remarkable achievements in attaining the Millennium Development Goals (MDGs), particularly in reducing child mortality. Prime Minister Sheikh Hasina received the award on 19 September 2010 (Figure 10). Comparison of mortality rates over the last four years illustrate that infant, child, and under-5 mortality declined by about 20%. As a consequence of this rapid rate of decline, Bangladesh is on track to achieving the MDG 4 target for under-5 mortality target of 48 per 1,000 live-births by the year 2015. [BDHS 2011]

Figure 10:Prime Minister Sheikh Hasina receiving the UN MDG Award in New York on 19 September 2010

7.5 Reaching the Unreached

7.5.1 Reaching Hard to Reach (HtR) Areas

The Government of Bangladesh, with the support of civil society and external partners has made remarkable progress in improving access to protected water and basic sanitation facilities. However, there still exist pockets in Bangladesh where WatSan services are inadequate. These areas have been identified and classified as Hard-to-Reach Areas (HtRA) recognising that WatSan service providers face difficulties to provide services in these specific areas. Based on a composite series of indicators comprising of poverty & health impact, access to water & sanitation services, accessibility & disaster prone, the HtR areas and people have been defined as: "Areas with poor water and sanitation coverage due to adverse geological formation and frequent occurrence of natural calamities which in turn results in higher rate of child mortality and accelerates the vicious cycle of poverty, are referred as hard-to-reach areas and the people of those areas called as hard-to-reach people due to their social exclusion from adequate WatSan services.

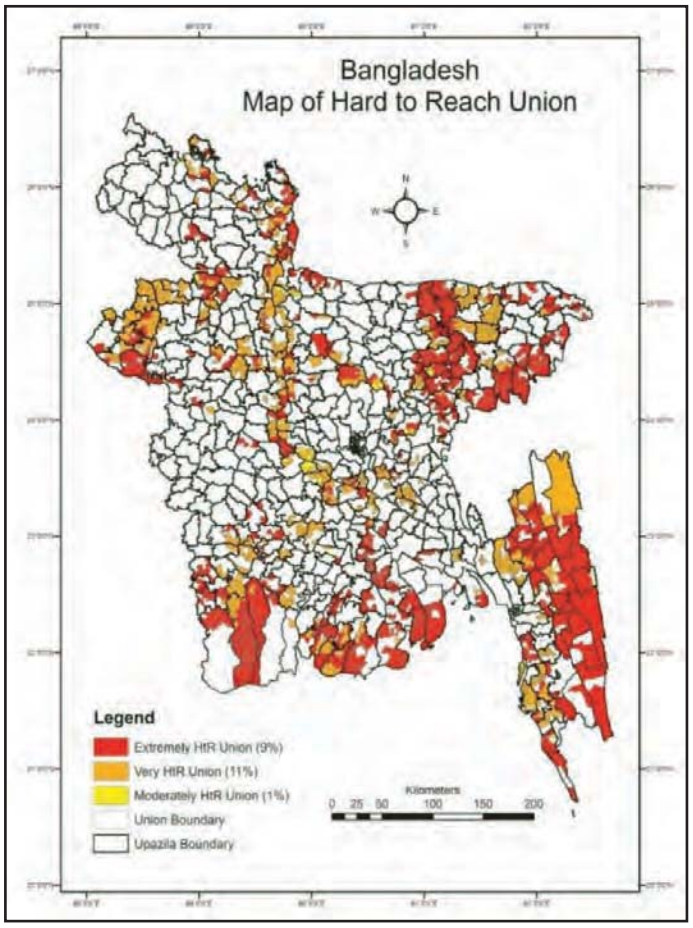

Figure 11: Map of Hard to Reach Areas of Bangladesh

The HtR area maps subsequently published by WSP identify six HtR areas namely the coastal offshore island and saline affected areas, Chars, Haors, Beels, Hills and Barind areas. A total of 1144 unions have been identified as hard-to-reach unions for water supply and sanitation in 257 upazilas of 50 districts (Figure 11& Table 3). The HtR area mapping identifies the areas facing a deficit in access to WSS services in Bangladesh. The HtR area mapping was also the basis for the Hard to Reach Area strategy formulation for planning, monitoring and evaluating targeted water and sanitation programs.

Table 3: Hard to Reach (HtR) unions based on category and extremity ranks

Sl. No.	Hard to Reach Areas	Number of Unions
1	Coastal Areas	213
2	Hilly Areas	227
3	Char Areas	353
4	Haor Areas	164
5	Beel Areas	64
6	Barind Areas	123
Total		1,144

Ranking of HtR Areas	Number of Unions
Extremely HtR Area	582
Very HtR Area	532
Moderately HtR Area	30
Total	1,144

About 21 % of the total geographical areas of Bangladesh are found to be HtR with approximately 28.62 million people living in these HtR areas. The distribution of population living in extremely, very and moderately HtR

areas is shown in Figure 12 highlighting the special consideration needed to achieve sustained sanitation coverage for all.

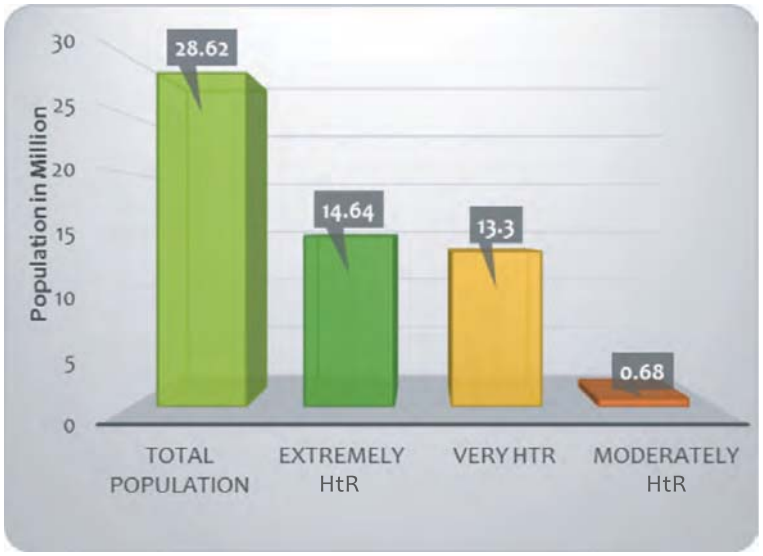

Figure 12: Population under HtR areas in Bangladesh

7.5.2 Strategies to Improve Water and Sanitation Services in HtR Areas

In 2012, the Bangladesh Government has approved the National Strategy for Water and Sanitation: Hard to Reach Areas of Bangladesh identifying area-specific strategies for ensuring the access to WatSan facilities by HtR people. The strategy develops targeted strategies to ensure cost effective, sustainable and appropriate water and sanitation facilities for the hard-to-reach areas of Bangladesh. Given the high incidence of poverty and vulnerability to natural hazards this includes further research and development of appropriate and affordable technologies and management systems.

The strategy document also describes the relation between the impact of climate change and hard-to-reach areas. For example the coastal areas of Bangladesh are subject to salinity intrusion into both surface and ground flow (due to variable precipitation) which have now been well established as impacts of global climate change. Furthermore, coastal areas are subject to recurrent severe cyclonic storms and inundation also due to climate change and are responsible for the damage of drinking water and sanitation infrastructure. The dynamics of seasonal flooding of char lands (River islands), water level fluctuations of Haor areas are linked to variable stream flow and precipitation that affects the drinking water and sanitation infrastructure. The accelerated growth of urban slums is primarily due to rural to urban migration as a result of river erosion also thought to be linked with climate change impacts. The growing scarcity of water availability in the Barind areas and in the Hills is also to be blamed as the adverse impacts of climate change. In this regard, allocating of exclusive climate funds along with government subsidies are proposed for the development of sustainable, climate resilient sanitation infrastructure, particularly in the climate vulnerable, disaster prone hard to reach areas.

7.6 Climate Change and Resilience of Sanitation Technology

Many of the sanitation technologies promoted in Bangladesh are not resilient to floods, cyclone and storm surges. Sanitation systems are partly or completely disrupted or destroyed by these climate change related extreme events.

As a result, the sanitation coverage falls in Bangladesh when these natural calamities occur. Climate resilient sanitation systems are required in the most vulnerable areas to sustain coverage. Sustained population coverage in the most vulnerable areas requires additional investments in climate resilient technologies.

Bangladesh Atomic Energy Commission (BAEC) has developed climate resilient latrine set made of jute reinforced polymer composite, which is durable and strong enough for water and saline resist, easily transportable and installable. These latrines are installed in different challenging areas of Bangladesh on pilot basis under government & development partners funding

7.7 Sanitation Marketing

Bangladesh has achieved remarkable progress in reducing open defecation. At present 96% people in Bangladesh are defecating in fixed place. These are not all sanitary latrines. Now the challenge is to bring all people from fixed place defecation to improved and hygienic latrine use (Figure 13). In recognition of the serious quality of service challenges, the Government of Bangladesh developed a National Sanitation Strategy with the aim that gradually people will move towards the hygienic latrine. Sanitation market promotion is creating the ability for users to install durable off-set and improved latrine facilities, as well as enabling finance for sanitation facilities to be directed to poor people.

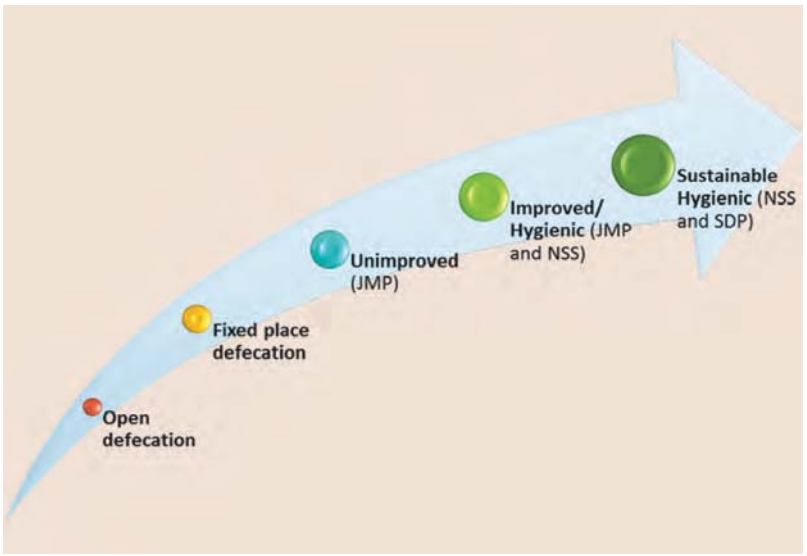

Figure 13: Progressing Improvement of Sanitation

Bangladesh is adopting different approaches to achieve its sanitation targets. Sanitation marketing is one of them. Sanitation marketing is an emerging field that applies social and commercial marketing approaches to scale up the supply and demand for improved sanitation facilities, particularly among the poor. This seeks to promote the development of the private entrepreneurs to deliver sustainable sanitation and hygiene products for households and other users.

The key elements in developing sanitation markets in Bangladesh are:

1. Demand Creation: Communication and product promotion.
2. Product Development: Consumer driven multiple design options.
3. Market Development: Capacity building of local entrepreneurs.
4. Quality Control: engagement of the local government.
5. Delivery: pro-poor business model taken to consumer's doorstep.
6. Innovative Financing: Linking entrepreneurs with micro finance institutions.

With the support of development partners, DPHE and various NGOs are linking private entrepreneurs with finance & supply chains, communities & local government institutions. As shown in Figure 14, private entrepreneurs have received training on business development and different latrine technologies. Micro finance institutions are making soft loans available to the private entrepreneurs. Implementing NGOs are helping entrepreneurs to establish a linkage with the local government institutions to support market

development. Some LGIs are directing financial support to entrepreneurs to target the hard core poor.Private Entrepreneurs are also involving themselves in community education sessions by NGOs to brief communities about improved latrines. The success of the private producers lies in offering a wider variety of improved products, construction services, flexible, simpler and cheaper latrine designs with options for payment in instalments.

An example of this type is the development of an improved hygienic pour-flash latrine pan through partnership among the Bill and Melinda Gates Foundation (BMGF), International Development Enterprises (IDE), and World Bank's Water and Sanitation Program (WSP) coordinated by DPHE. That is being widely marketed in Bangladesh. The pan incorporates a counterweighted trap door that swings to the open position upon rapid addition of >0.5 litters of water.

Figure 14: Sanitation Marketing

7.8 Knowledge and Information Management

Research is extremely important for knowledge development. To improve the generation of knowledge through research, development, demonstration, deployment and diffusion, the Government of Bangladesh is considering to create "R&D Fund". The fund may be financed by the Government, Development Partners and private sectors and governed by an independent board preferably anchored within a suitable research institute or university.

There are plenty of information amongst various organizations and projects unused by the sector. It is important that the information base is properly utilized. To address this challenge, the Policy Support Unit of LGD has established a Web-based National MIS-GIS system (NAMIS) with all sector stakeholders to coordinate initiatives and prepare an integrated WSS plan.

7.9 Community Wide Total Sanitation and Sustainability

7.9.1 Community-Led Total Sanitation

Bangladesh has been implementing community-led-total-sanitation approaches and is one of the few countries that have almost achieved open defecation free status.

(1) Since 2003, the Government of Bangladesh has been pursuing an extensive "National Sanitation Campaign" in order to:
- Change the attitude towards the use of latrines (in collaboration with different Government Departments, Non-Government Organizations, Development Partners and influential societal change-makers);
- Encourage the setting of targets by Local Government Institutes (LGIs) and NGOs to achieve 100% sanitation coverage;
- Discourage open defecation;
- Promote the use of latrines and hand washing by all members of the family after defecation;
- Elevate the importance of personal hygiene; and
- Build the capacity of the LGIs.

(2) Local Government Division of the Ministry of Local Government, Rural Development and Cooperatives has allocated 20% of the Annual Development Plan (ADP) allocation to LGIs as a dedicated budget for sanitation.

(3) The government and development partners observe "Sanitation Month" in the month of October each year as part of National Sanitation Campaign.
(4) Task Forces & WatSan Committees with definite terms of reference have been formed at the National, City Corporation, District, Hill District, Municipality, Upazila, and Union levels to implement objectives of the national sanitation program.

7.9.2 Sustainability

In order to gain the benefits of total sanitation coverage, the substantial achievement of access to sanitation must be sustained. The sanitation coverage figures in areas vulnerable to climate change have already suffered huge losses from floods and cyclones completely inundating latrines or washing them away. The sustainability of sanitation coverage in Bangladesh also represents a massive regulatory challenge in terms of the disposal of septic sludge once the onsite sanitation facilities are filled and emptied. Addressing the sustainability challenge requires Bangladesh to address both the functional sustainability and environmental sustainability.

Functional Sustainability
Improvement in sanitation is a change in practice which needs people's acceptance and urge to build and sustain. In case of sanitation, proper operation/use and maintenance are most important for sustainability of the system. There are examples in which 100% sanitation coverage achieved in an area or in a pilot project gradually collapsed to disuse.

The key issues of functional sustainability are:
- Installation and replacement of components, when needed
- Proper use of facilities
- Repair and timely maintenance
- Keep the system functional

Environmental Sustainability
The provision of sanitation is intended to improve environment and quality of life. However, improper design and maintenance of sanitation facilities can cause environmental pollution. Some of the possible negative impacts of sanitation facilities include:
- Damage/degradation of natural resources by poorly managed facilities
- Groundwater pollution from pit latrines /soak well etc.
- Pollution from disposal of sludge from emptying of pits, septic tank and treatment of wastewater
- Pollution from disposal of effluent from treatment plant/ facilities

To learn about the sustainability of sanitation behaviours, facilities and programs focused on achieving 100% sanitation coverage, a research study was carried out in Union Parishads four and half years after they were declared ODF (WSP, 2011).The study revealed that a very high percentage of sample households (89.5%) currently use an improved type of latrine, either shared or not shared and only 2.5% of families had no latrines and were practicing open defecation. However, only 37% of all surveyed households had what the GoB considers hygienic latrines while 53% had improved latrines as per the JMP definition. In addition, 44% of improved/ shared household latrines were found to be clean. This reveals that sustainability of sanitation improvement is challenging.

7.10 Advocacy for Sanitation Promotion

The Government of Bangladesh with active support from development partners and non-government organizations is supporting various policy advocacy activities to address the challenges in the water, sanitation and hygiene sector. As a result, it has been possible to frame various policy documents like the Hard-to-Reach Strategy, National Hygiene Promotion Strategy as well as the Sector Development Plan.

One of the major objectives of the advocacy initiatives of the Government is to create an enabling environment for moving up the ladder from eradicating open defecation to ensuring improved sanitation. The High Level Meetings contributed to undertake WASH budget analysis for six years and identify the resources needed to implement the Hard-to-Reach Area Strategy.

In addition to the national sanitation campaign, the government and development partners are promoting different initiatives including the "Right to WatSan and Get it for all" and campaigns like 'Keep Your Promise on Sanitation'.

The LGD has approved the Horizontal Learning Program Framework where the promotion of sanitation at the grass root level has been given a top priority through peer learning. Another vital result of policy advocacy is the introduction of Benchmarking and Performance Improvement Planning by different city corporations and paurashavas. The necessary resource allocations are also being promoted at policy level to ensure access to public toilets in big cities.

Networking at the local, national and regional level through different networking organizations including Water Supply and Sanitation Collaborative Council (WSSCCB), Horizontal Learning Program (HLP), Urban Utility Network and the Fresh Water Action South Asia (FANSA) are creating an enabling environment to coordinate the mobilization of resources. Evaluations by the Joint Monitoring Program (JMP) and the Global Analysis and Assessment of Sanitation and Water Supply (GLAAS) offer the basis for analysis of WASH sector progress.

Following a baseline survey, a mass media campaign was conducted on national TV and radio on three waves (hand washing with soap, use and cleanliness of latrines and drinking safe water) which was continued for four months.

8 BEST PRACTICES

Case Study 1: Sanitation Leaders

Tanzida Sarker and Md Arif Hossain were nominated student brigade leaders at Balarampur Government Primary School at Chouhali in Sirajgonj district. DPHE implemented the `Sanitation, Hygiene Education & Water Supply in Bangladesh (SHEWAB) Project' with support of UNICEF in Sirajgonj district, where Arif and Tanzida received sanitation & hygiene education in their school. They are very active in learning about sanitation & hygiene messages, discussing with their friends about personal and environmental hygiene and together keeping their campus clean. They are leaders of Student Brigade exclusively to work on WASH in their school & residing areas.

"There is a calendar and roaster of duties in our school so that every student could take part in maintaining school latrine fresh and yard clean all the time" says Tanzida. *"It is not a big task if everyone shares and does their bit"*, she adds. As a brigade leader Arif feels his responsibility to share hygiene messages across the school as well as within their family and neighbours. *"We not only maintain hygiene at our school and surroundings, we spread hygiene messages learnt from sessions to our*

households and neighbours" says Arif. *"We keep our eye to our family member whether they maintain personal and environmental hygiene too"* he adds.

Case Study 2: Horizontal Learning Program (HLP) – Sustaining and replicating WatSan good practices

The Local Government Division initiated HLP programme has now expanded in other Asia and Pacific countries.

The Horizontal Learning Program (HLP) is an outcome-based peer-to-peer learning platform led by Union Parishads (UPs), led by the Government of Bangladesh (GoB) and supported by development partners. HLP was initiated in 2007 by the Local Government Division (LGD) in response to request from Union Parishads. It has expanded from 66 UPs in six upazilas to encompass 378 UPs in 38 upazilas with the support of 32 development partners. The program offers UPs an opportunity to identify their good practices (with indicators) and share them with their peers. UPs also identify the good practices of their peers and visit them for potential replication utilizing their own budget. UPs progress in the replication of good practices are tracked against the locally defined indicators. Proponents of those good practices that are replicated by more than 50 UPs without any external support are then invited to share their collective experiences with the relevant policy makers.

To date, Union Parishads have contributed around 5 million USD to replicate more than 27 good practices in water supply and sanitation to serve a total population of 7 million people. A total of three refinements to policies have been made by the GoB on the basis of replication of good practices by UPs.

This process has now been initiated in Maharashtra and Gujarat by the Swiss Agency for Development and Cooperation (SDC), as well as Iran, Pakistan and Vietnam through the national link institutes of the Centre on Integrated Rural Development for Asia and The Pacific (CIRDAP).

Case Study 3: Role of a self-determined women

Moyna Begum Wife of Sayedul Molla, lives with husband and two sons at village Bhadrapara of Bagerhat Sadar Upazila. She enrolled her name as member of JJS (Jagrata Juba Shangha, a partner NGO of WASH Alliance Bangladesh)-WASH Committee in 2011 and received training on health awareness, safe water, personal hygiene, waste management and offset latrine preparation. She has started manufacturing offset latrines at her homestead and planned to go for commercial purpose in small scale. Moyna begum's two brothers were associated with sanitary businesses and helped her to establish her business.

Moyna, Begum herself constructing materials to build improved latrine.

Moyna received extensive training from WSP-WB on entrepreneurs' development. JJS provided a soft loan of Tk. 75,000.00 and also hired a shop (space) in the local market for displaying the latrines and its items for sale. Gradually as the sale rate increased, she is earning Tk. 2000.00 per month from the business.

Case Study 4: Twin Pit Latrine: An innovative and sustainable model

Bilkis Begum (37 years) is a widow with 5 daughters and lives in the village of Mithapur, in Faridpur district. She and her three adolescent daughters faced many problems because they were using a broken latrine. They sometimes had to use their neighbour's latrine, but when they were not welcome they had to defecate outside in a nearby bush. Bilkis later received a twin-pit offset latrine from BRAC WASH in 2009 that was installed inside the house (which is not common in the rural areas). She has given priority to the safety and security of her daughters, as she goes outside for work. She says 'if latrines are well maintained and have an intact water seal, it doesn't have a bad odour, and therefore does not matter where it is installed.'

To date, around 800,000 hardcore poor people are using and maintaining twin-pit latrines. . The two pits could be used in rotation. When one is full, the slab can be shifted to the other pit. The excreta in the first one will be digested in 18 months into organic fertilizer which is easy to empty and can be disposed off safely. The twin-pit model provides a means for ensuring the sustainability of good hygiene behaviour along with a method for the management of the waste.

Case Study 5: School sanitation with menstrual hygiene management

The sun shone warmly on the happy chattering students of Shakipur Primary Model School and Kader Nagar Government Primary School. Not so long ago, we had witnessed them trudging more reluctantly to their schools. The scene has changed since the WASH project of WaterAid Bangladesh provided running water facility and new separate toilets for the girls and boys of these two schools.

"We can really enjoy being at school because now we have access to safe tap water and proper toilets for both girls and boys" said Kamrun Nahar Kakoli, a Grade 5 student.

The students are more health conscious. They wash their hands before and after meals, after using the toilets and after their tea breaks. *"It's like the children have come fully alive,"* remarked Md. Abdus Samad Mia, Head Teacher of Kader Nagar Government Primary School. *"They are proud to have good hygienic standards in their school and do very well to stay healthy".* Girls who used to drop out of school after puberty now continue their schooling. *"It is an improved situation and the girls feel much more at ease especially during and after their menstrual cycle. Before, they would want to go home but now they can use the facilities and are comfortable,"* said Shaheen Akhter, head teacher. By providing children with proper facilities, the WASH project has ensured that children of Sakhipur attend school regularly and get a good primary education.

Case Study 6: Citizens Action Committee (CAC) - Ensuring the demands of marginalized community people

Village Education Resource Center (VERC), a national NGO, has been working on WASH in Bagmara Upazila of Rajshahi district since 2000. The piloting of Citizen Action Committees (CAC) started in April 2008, with a view to work as parallel group of CBO to ensure access to safe water & hygienic latrines, hygiene practice & basic rights of the most marginalized of the poor community people. In all 16 Union Parishads, there is a Ward Citizen Action Committee (WCAC) in each ward and a Union Citizen Action Committee (UCAC) in each Union. The WCAC comprised of three members from each CBO. Since August 2009, the CR-WASH pilot project activity has been initiated in Basupara and Ganipur unions where CAC involvement has created important momentum in the project activities. In the piloting project activity skill development training, advocacy training and training on community dialogue was imparted

The CAC is now performing their work with more effectiveness, where they hold regular meetings and cleaning activities, they take part in training and networking with the local government and other NGOs. They are also organizing the community people to ensure their rights from the service providers. They are also advocating in different forums about child friendly technology and its installation. For the purpose of mass mobilization, they are conducting different sessions at community level. Moreover, they have taken different initiatives to solve the water related problems through discussion in the WCAC meeting and successful communication with local Union Parishad.

Case Study 7: Devotion of Government Official for the promotion of sanitation in Hard to Reach areas

The success of Community-Led Total Sanitation (CLTS) would not come about but for the intimate GO - NGO collaboration that Plan Bangladesh always nurtures wherever it intervenes. Mr. Habibur Rahman, Upazila Nirbahi Officer (UNO) a government official who is the head of upazila administration of Nikliupazila under Kishoreganj district, related his experience of CLTS approach in this regard. "Government-Led Total Sanitation (GLTS) project started in Nikli Upazila on July 2010 for promoting sustainable sanitation coverage where upazila Administration took a leading role in working as the coordinating platform for ensuring the participation of all stakeholders such as political leaders, NGOs, Private sector, CBOs, etc. and organized monthly progress review meetings".

UNO (at left) delivering speech in a gathering to observe sanitation month

Plan Bangladesh in collaboration with DPHE built the capacity of Union Parishads, Private latrine produces and Natural Leaders through organizing intensive training and exposure visit. Now they are playing significant role in planning, implementing and monitoring sanitation activities at their respective level. Stopping open defecation, disseminating hygiene messages and monitoring latrine the role played by the children is very much strong. Youth are contributing lot for installing latrine options considering affordability of community. As a result improved sanitation coverage enhanced 5% to 72% within December 2012. Mr. Rahman devoted himself for the sanitation movement in Nikli upazila and created an important model of GO-NGO partnership. In spite of constraints in increasing sustainable sanitation coverage in haor areas; he said that it is essential for the conduction of extensive motivational efforts going throughout the year instead of running it for weeks or months and promised the community to build and maintain improvement of sanitation.

Case Study 8: Plastic latrine made healthy life on the hilltop

42-year-old-Masathwai Karbari, a Marma origin lives with his family in a hilly village named Paikhyong Para, a geo-physically hard-to-reach area located about at 7 km distance from Bandarban city. As many as 33 Marma families live in this village. Traditionally, the community people of this village set-up their dwelling on the hilltop 500 feet up from the plain land. Since his childhood the Karbari has been observing that the sanitation and hygiene situation of his village is very poor resulting in the pitiable health situation. He along with his family members used to defecate in the open places and did not wash hands properly after defecation since there was scarcity of water and they suffered a lot from abdominal problems, excreta and water-borne diseases.

Once, representatives of NGO Forum's partner NGO Tahzindong in Bandarban visited the village. They started to make the villagers understand that the reason of diseases in the village is unsafe water and unhygienic latrines. They motivated but it was difficult to install the latrines due to geophysical barriers (i.e., rocky soil texture in ground) hindered the process. On the other hand, the people did not agree to carry the concrete ring slabs of latrine at the hilltop. To solve the problem, an alternative technology like plastic slabs were provided. But the people could not depend on the technology as it seemed to be very slender. Engineers made them convinced by proving information about the technology. Finally, the installation process of latrines was completed and 18 families were provided with hygienic latrine facilities of plastic slab, feasible technology for hard-to-reach areas especially hilly areas and a Ring-well was also installed successfully to solve their water crisis. Now, the Karbari feels good using hygienic latrines. He along with his family members is free from diseases caused by unhygienic sanitation system.

Case Study 9: Sanitary latrine made of Jute Polymer Composite (JutoSAN): Developed by Bangladesh Atomic Energy Commission

With little access to affordable sanitation facilities, especially durable latrine in coastal, hilly or climate resilient areas, most of the population had used unhygienic hanging latrines or openly defecated. Concerning the severe health issues, Institute of Radiation and Polymer Technology (IRPT) of Bangladesh Atomic Energy Commission (BAEC) was researching to develop a climate resilient raw material from renewable natural resources under supervision of Director, IRPT Prof. Dr. Mubarak Ahmad Khan. More than ten years of extensive research leads to develop jute fibre reinforced polyester composite cross linked via coupling agents. This composite material comprises stunning features that has made it light weight , durable, strong, water, saline & heat resistant, rust proof, sustainable, environmental friendly sanitary latrine suitable for a developing country like Bangladesh. All the components like ring, slab, super structure (roof, fence and door) were prepared with jute polymer composite named JutoSAN, which is price beneficiary and affordable to all group of society. BAEC is manually preparing latrine in the laboratory. More than 150 latrines has been installed in rural and critical area of Bangladesh as pilot basis under the MoU between BAEC and UNICEF through DPHE. The users are very pleasant to use this type of latrine.

BAEC is also working to produce special type of mobile sanitation (MoSAN) units using JRPC (Jute Reinforced PolymerComposite) as per the "Mould design" developed by German Technical Cooperation (GIZ) -Bangladesh, within its role in UGIIP-2 (Second Urban Governance & Infrastructure Improvement Project). The purpose of MoSAN is to improve the sanitation situation of the urban poor, especially women, and conduct a field test in Mymensingh Pourashava.

MoSAN Prepared by Jute Polymer Composite

9 FUTURE PLAN FOR MEETING NATIONAL TARGETS

To address the sector challenges, the LGD of MoLGRD&C has approved the Sector Development Plan (SDP) for Water Supply and Sanitation (2011-2025) with Development Partners to allocate the resources necessary to address the service delivery shortfall. The future plan for sanitation has been clearly identified in the Sector Development Plan approved by the Government (GOB, 2011) for the Short (FY 2011-15), Medium (FY 2016-20) and Long Term (FY 2021-25) in accordance with the government policies and strategies. It is envisaged that the coverage and service levels would be gradually improved during the three 5-year terms of the SDP. Future Plan for meeting national targets could be summarized as below:

- Continued Political Commitments will be the main driving force to achieve national sanitation target.
- Total sanitation coverage, up-gradation of facilities to more durable & sustainable hygienic sanitation system and replacement by improved technologies will be achieved in accordance with the Sector Development Plan,(2011-2025).
- The budget gap for development of sanitation in the country will be minimized through increased financial support of the development partners.
- Climate resilient technologies and technologies suitable for HtR areas will be deployed in vulnerable areas to enhance functional sustainability of sanitation services.
- Increased effort will be continued to convert shared latrine into individual improved latrine as well as maintain shared latrine in hygienic conditions following National Hygiene Promotion Strategy, 2012.
- The Hard-core poor in both urban and rural areas will receive priority for sanitation services. The government is considering for developing policies to provide subsidy for the Urban/LICs (Low Income Communities) to build sanitary latrines as most of the sanitation subsidy is targeted for rural population.
- By 2020, Sewerage coverage would be increased in large City Corporations whereas innovative off-site sanitation technologies like small bore sewerage systems with treatment facilities and decentralized sewerage treatment plans would be introduced in a limited scale in newly developed City Corporations. Rural areas will see an increase in the use of advanced sanitation options, adopting septic tanks. Sewerage systems would be introduced in large Paurashavas by 2025.
- To reduce the incidence of diarrhoeal diseases and achieve the health based targets, GoB will focus more on hygiene practice in accordance with the National Hygiene Promotion Strategy, 2012.
- Research & development activities for appropriate & sustainable sanitation technology as well as Promotion of sustainable latrines, repair and maintenance of latrines and hygienic disposal of sludge.
- Create separate budget head for water supply, sanitation & hygiene.
- LGD, Govt. departments and NGOs will mobilize greater efforts for capacity building of the LGIs and CBOs for implementation of sanitation projects and operation as well as maintenance of sanitation services.

BanglaSAN 2011

`BanglaSan 2011' provided an important outlook towards future challenges and planning. The declaration of this national sanitation conference makes clear recommendations to overcome the critical issues and achieve sanitation for all the people of Bangladesh. The commitments of BanglaSan 2011 was as below:

- A national sanitation census on urgent basis to determine the actual sanitation situation will be carried out; based upon which national and local action plans & programmes will be taken to achieve 100% sanitation.
- Necessary efforts of financing area-wise demands & plans based on the information generated from the national sanitation census will be made. Especially, the minimum 20% allocation of the local government and LGSP will be used for sanitation promotion.
- Special programmes on sanitation for underdeveloped areas in terms of sanitation specially the hill tracts, char, haor, coastal areas, islands, tea gardens, slums, Barind tract, disaster-prone and poverty-stricken areas will be taken and implemented on priority-basis. Formulation and revision of necessary strategy papers including urban sanitation policy will be done;
- Priority will be given to the demands of underprivileged population, disabled persons, senior citizens, women and children in every sanitation-related programme. For this, relevant policies and strategy papers will be revised.
- It will be encouraged to develop child, woman, disabled and environment-friendly latrine infrastructure. In this regard capacity of local businessmen, smith men, and others related will be increased.
- Considering the present market price and quality, the price of latrines supplied through government allocation will be re-set according to area-wise market price.
- Research programmes will be conducted to innovate appropriate & sustainable technologies considering the social, geophysical, environmental (i.e. water logging, salinity, drought, char and disaster-related) issues. The research works will be used in the national sanitation programme.
- Programmes will be taken for the development of urban sanitation & waste management especially for the low-income people and slum dwellers. Wherever there will be a population living, sanitation service will be ensured there.
- Equal importance will be given to institutional sanitation including education and hygiene education. School sanitation programmes will be strengthened. A hygiene strategy paper will be formulated for this.
- It will be ensured to take and implement sanitation programmes based on partnership, transparency and accountability; and
- Above all, a cell/wing of LGD will monitor and evaluate the sanitation programme and its progress and will bring it to the attention of policy-makers.

10 SACOSAN-IV COMMITMENTS AND PROGRESS

The 4th South Asian Conference on Sanitation (SACOSAN-IV) was held in Colombo, Sri Lanka, 4th – 7th April, 2011, which was attended by Ministers, senior civil servants, grass-roots activists and community members, professionals from sector institutions, academia, civil society, NGOs and development partners, the private sector and schoolchildren.

A declaration was adopted in this conference, which guided the policy makers and development partners to take action to improve sanitation situation in South Asian countries with the specific achievements against SACOSAN commitments in **Appendix-A.**

11 CONTACTS: CONTACTS OF KEY INSTITUTION, WEBSITES

Lead Ministry

- Local Government Division,Ministry of Local Government, Rural Development and Cooperatives
  Website: http://www.lgd.gov.bd/

Lead Departments/Agency

- Department of Public Health Engineering - DPHE
  Website: http://www.dphe.gov.bd/

Government Departments/Agencies

- Policy Support Unit - PSU
  Website: http://www.psu-wss.org/
- Local Government Engineering Department - LGED
  Website :http://www.lged.gov.bd/
- Dhaka Water Supply and Sewerage Authority - DWASA
  Website :http://www.dwasa.org.bd/

Academic

- International Training Network (ITN) Centre for Water Supply and Sanitation, BUET
  Website :http://www.buet.ac.bd/itn/

Development Partners

- United Nations Children's Fund - UNICEF
  Website :http://www.unicef.org/bangladesh/
- World Health Organization - WHO
  Website :http://www.who.int/countries/bgd/en/
- Water and Sanitation Program - WSP
  Website :http://www.wsp.org/
- Japan International Cooperation Agency (JICA)
  Website :http://www.jica.go.jp/english/
- Asian Development Bank (ADB)
  Website :http://www.adb.org

INGO / NGO

- WaterAid Bangladesh
  Website :http://www.wateraid.org/where-we-work/page/bangladesh
- BRAC
  Website :http://www.brac.net/
- NGO Forum
  Website :http://www.ngof.org/
- Bangladesh WASH Alliance
  Website :http://www.washalliance.nl/local-alliances/bangladesh/
  http://www.washbd.org
- Plan Bangladesh
  Website :http://plan-international.org/where-we-work/asia/bangladesh/
- Max Foundation Bangladesh
  Website :http://www.maxfoundation.org/en/what-we-do/why-bangladesh/
- DusthaShasthya Kendra- DSK
  Website :http://www.dskbangladesh.org/

- Dhaka Ahsania Mission
  Website :http://www.ahsaniamission.bd.org/
- JADE Bangladesh
  Website :http://jade-bd.org/
- UnnyanShahojogy Team (UST)
  Website :http://www.ustbd.org/
- Alive& Thrive
  Website :http://www.aliveandthrive.org/
- Village Education Resource Center (VERC)
  Website :http://www.verc.org
- Practical Action Bangladesh
  Website :http://www.practicalaction.org.bd/
- WSUP
  Website :http://www.wsup.com/
- DORP Bangladesh
  Website :http://www.dorpbd.org
- Muslimaid Bangladesh
  Website :http://www.muslimaid.org.bd
- Save the Children Bangladesh
  Website :http://bangladesh.savethechildren.net/

Others

- International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDRB)
  Website :http://www.icddrb.org/
- Freshwater Action Network South Asia-Bangladesh (FANSA-Bangladesh)
  Website :http://www.freshwateraction.net/
- Water Supply and Sanitation Collaborative Council, Bangladesh (WSSCCB)
  Website :http://www.wsscc.org/countries/asia/bangladesh/

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APPENDIX-A

SACOSAN-IV Commitments and Progress

Sl. No.	SACOSAN_IV Commitments	Progress
1	In light of the recent UN resolution recognizing the right to sanitation, to work progressively to realize this in programmes and projects and eventually in legislation.	Government of Bangladesh fully recognizes sanitation rights and relevant policies, strategies and guide lines have been prepared to facilitate sanitation rights of the people. Government of Bangladesh has endorsed the SWA guiding principles and is a SWA partner.
2	To develop time-bound plans and to allocate and mobilize resources for delivering on all previous SACOSAN commitments.	Bangladesh had a time-bound plan to achieve total sanitation by 2010, which was then shifted to 2013 and mobilized increased resources. MDG should be consider as the ongoing time-bound plan.
3	To design and deliver context-specific equitable and inclusive sanitation and hygiene programmes including better identification of the poorest and most marginalised groups in rural and urban areas, including transparent targeting of financing to programmes for those who need them most, and taking into account the challenge of protecting the environment and responding to emergencies and climate change.	Government of Bangladesh has developed hard to reach strategy and hygiene promotion strategy in 2012 to deliver context-specific equitable and inclusive sanitation and hygiene. Mainstreaming sanitation for disaster risk reduction & climate change adaptation, govt. is undertaking exclusive intervention under different project components for climate resilient improved technical options to the target groups. DPHE-UNDP-CDMP-II project is one of to be mentioned. The average allocation for the sector from FY 2008-09 to FY 2012-13 stands at 6.75% of the Annual Development Programme
4	To raise the profile of WASH in schools with the objective of ensuring that every new and existing school at every educational level has functioning, child-friendly toilets, separate for girls and boys, with facilities for menstrual hygiene management.	Local Government Division has sent request to the Ministry of Education to ensure separate toilet for girls students and also build child-friendly toilet through inter-ministerial approach by the sector lead ministry. At present more than 73% of the schools have separate latrines for boys and girls in Bangladesh.
5	To establish one national body with responsibility for coordinating sanitation and hygiene, involving all stakeholders including, but not limited to, those responsible for finance, health, Public health, environment, water, education, gender and local government at national, sub national and local levels.	Local Government division has established national sanitation task force headed by Secretary, LGD participated from government, development partner, NGOs, Civil Society, Private sector and Media. This national committee is collaborating relevant inter-ministerial feedback for effective monitoring and contribution for sanitation progress.
6	To establish specific public sector budget allocations for sanitation and hygiene programs.	20% of Local Government Support Programs' funds was allocated to Upazila Parishad for implementing sanitation program while LGSP project provides sectoral support to Union

Sl. No.	SACOSAN_IV Commitments	Progress
		Parishads according to their demand. This is especially used to cover sanitation related demand of the poor and marginalized people. Local Government Division has given a formal letter to the Finance Division, under Ministry of Finance to segregate the budget lines for Hygiene, Sanitation and Water. Ministry of Finance is currently working on the issue. Mid Term Strategy business plan are being co-ordinated on priority basis for sectoral budget planning. Government has developed with the assistance development partner sanitation focused projects.
7	To progressively increase allocations to sanitation and hygiene over time.	Allocation to the sector has increased from 2.9% in 2008-9 to 4.2% in 2009-10 and 5.6% in 2010-11. Bangladesh Bank has issued a letter to all government banks to provide loans for private sector entities on water and sanitation.
8	To recognise the importance of people's own contribution to sanitation and to ensure that policies and programmes empower communities to invest in and control their own sanitation solutions while protecting the poorest.	The Households and UPs are major public financiers of rural sanitation. GoB Policies reflects the same perception towards community empowerment through investment by the communities & private sector also to maintain the service delivery.
9	To develop harmonized monitoring mechanisms with roles and responsibilities clearly defined, using agreed common indicators which measure and report on processes and outcomes at every level including households and communities, and which allow for disaggregated reporting of outcomes for marginalized and vulnerable groups.	National MIS has been established in the Water and Sanitation Sector. All Stakeholders requested to send their data to the National MIS system. LGD in collaboration with development partners, sector agencies and NGOs is developing intensive monitoring system which will replicate the regional agreed monitoring indicators.
10	To include in monitoring mechanisms specific indicators for high priority measures such as WASH in schools, hand washing and menstrual hygiene.	Bangladesh contributed to develop common indicators for south Asian Countries to monitor sanitation progress. In Bangladesh, NAMIS is in place. Comprise DPHE project data for 486 sub-districts, 319 municipality profiles, BRAC WASH programme information, and NGO Forum project data is in place up to 2013.
11	To adopt participation, inclusion and social accountability mechanisms from planningto implementation in all sanitation and hygiene programmes at the community level, particularly for the most marginalized areas and vulnerable groups.	Government of Bangladesh is striving to ensure participation of marginalized people in sanitation. A hard to reach strategy & Hygiene promotion strategy has been prepared where need of sanitation has been identifies. GoB and Development Partners and NGOs have launched new project in this area. 20% of Annual Development Programme Fund has been allocated to the LGIs for sanitation.

Sl. No.	SACOSAN_IV Commitments	Progress
12	To build and strengthen capacity for sanitation and hygiene implementation, including investing in higher education facilities, development of curricula, research and development, and knowledge exchange and partnership development.	ITN-Bangladesh at BUET in collaboration with LGD, DPHE, NILG has developed and implemented appropriate WSS curricula and supporting text book for engineering education. It has link with similar centre worldwide and published many books and research monographs. PSU has an investment plan in higher education facilities and capacity building.
13	Continue to ensure the effectiveness of the SACOSAN process by committing to reportspecifically against these and all other SACOSAN commitments when we meet again in Nepal in two years' time, inviting participation from ministries of finance, health, education and other relevant ministries in all future meetings.	Bangladesh is always committed to make the SACOSAN more effective. Country Focal person is keeping contact with all partners in Bangladesh to monitor progress to ensure effectiveness of commitments made by SACOSAN & rationalized participation of inter-ministerial bodies.
14	To support the monitoring and implementation of the Delhi Roadmap prepared at SACOSAN III through a country-led process of self-reporting and the holding of an annual meeting of the Inter-country Working Group formed at SACOSAN I which would review progress.	The last ICWG meeting was held in November, 2012 in Nepal to review the individual country led approaches including monitoring & implementation.