



**Sanitation Secretariat**  
Department of Public Health Engineering  
Local Government Division

# JOURNEY TO **zero**

BOOK OF ABSTRACTS

**SANITATION CONFERENCE**  
**3-4 OCTOBER 2015 | DHAKA**

Book of abstracts



**SANITATION CONFERENCE**  
**3-4 OCTOBER 2015 | DHAKA**

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## CONTENTS

- 1** **TOWARDS THE END OF OPEN DEFECATION IN BANGLADESH**  
Shafiu Azam Ahmed, Umme Farwa Daisy
- 2** **THE ROAD TO FAECAL SLUDGE MANAGEMENT IN BANGLADESH**  
Hasin Jahan
- 3** **REVIEW OF LEGAL AND OTHER GOVERNING FACTORS  
RELATED TO FAECAL SLUDGE MANAGEMENT IN BANGLADESH**  
Tanveer Ahsan, Imtiaz Ahmed
- 4** **SMALL DOABLE ACTION APPROACH TO ADDRESS LEAKY LATRINES  
AND CHILD FECES DISPOSAL IN SOUTHWEST BANGLADESH**  
Julia Rosenbaum, Muhammad Faruque Hussain, Selina Ferdous, Khairul Islam
- 5** **SAWRP – THE NEXT GENERATION WASH INITIATIVE  
IN BANGLADESH**  
Khandker Zakir Hossain, Kazi Morshed Alam
- 6** **SO5 – AN EFFECTIVE HAND-WASH BEHAVIOUR  
TRANSFORMING PROGRAMME**  
Emran Rahman
- 7** **HEALTH VILLAGE: AN INTEGRATED SANITATION PERSPECTIVE**  
Md Dider Uddin, Md Amir Khasru, Partha Sarathi Kuntal,  
Mohammad Zobair Hasan
- 8** **SANITATION ENTREPRENEURS DEVELOPMENT AND  
LINKING MICRO FINANCE**  
Alok Kumar Majumder
- 9** **SANIMART: PROMOTES SAFE MENSTRUAL HYGIENE FOR INCLUSIVE  
AND SUSTAINABLE SANITATION**  
Uttam Kumar Saha, Aklima Khatun
- 10** **UNRAVELING THE USABILITY OF RURAL LATRINES IN BANGLADESH**  
Jess MacArthur, Raisa Chowdhury
- 11** **REACHING THE HARD-TO-REACH: A CASE STUDY FROM THE TEA  
GARDENS OF BANGLADESH**  
Shahrukh Mirza, Mahfuj-ur Rahman, Babul Bala and Shamim Ahmed



12

**INCREASING WASH ACCESS IN HARD-TO-REACH AREAS:  
BRAC WASH PROGRAMME**

Rakib Uddin, Moazzem Hossain, Hasan Ali Mia, Narayan Chandra Somoddar,  
Sabrina Shahidullah, Milan Kanti Barua, Akramul Islam

13

**SAFE SANITATION AND SEWERAGE SYSTEM FOR CLIMATE CHANGE  
VULNERABLE COMMUNITY IN BANGLADESH**

S. Hossain, M. Parvin, T. Rahaman, S. Khan

14

**LIVED EXPERIENCES OF MENSTRUATION AND  
MENSTRUAL HYGIENE IN BANGLADESH**

Shahrukh Mirza

15

**GENDER AND EQUITY APPROACHES TOWARDS SANITATION:  
BRAC WASH PROGRAMME**

Mahidul Islam, Nameerah Khan, Anamika Debnath,  
Milan Kanti Barua, Akramul Islam

16

**ACCESSIBILITY SANITATION FACILITIES IN PUBLIC PLACES:  
A CRITICAL REVIEW THROUGH ACCESSIBILITY AUDIT**

Mahfuj-ur Rahman, Shamim Ahmed, Hajra Sana

17

**BOTTOM UP APPROACH FOR CLIMATE ADAPTATION TOWARDS  
IMPROVING SANITATION**

Arif Abdullah Khan, Umme Tania Sultana

18

**ECOLOGICAL SANITATION: SUSTAINABLE OPTION IN  
HARD-TO-REACH-AREAS (HtRAs) of BANGLADESH**

Uttam Kumar Saha, Rafiul Islam, Abdul Khaleque, L. M. Sirajus Salekin

19

**CONTRIBUTING TO JOURNEY TO ZERO THROUGH  
RE-ADDRESSING COMMUNITY INTEGRATION**

Jubaida Akhter

20

**EVALUATION AND RANKING OF SLUM AREAS IN DHAKA CITY  
BASED ON WASH PRACTICES**

Nehreen Majeed, Mahmood Nazmus Saqueeb, Md. Taukir Islam

21

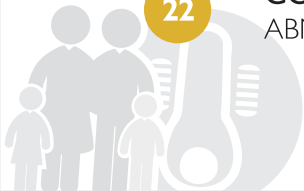
**HEALTH AND SAFETY ALONG THE SANITATION VALUE CHAIN**

Rajeev Munankami, Md Shahidul Islam

22

**COPING SANITATION CRISIS IN PUBLIC PLACES OF DHAKA**

ABM Mobasher Hossain, Babul Bala, Zahidul Islam Mamun



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## TOWARDS THE END OF OPEN DEFECACTION IN BANGLADESH

Shafiu Azam Ahmed\*, Umme Farwa Daisy

Bangladesh has a long history of battle against the practice of open defecation. The battle began in the early 1970s by the Department of Public Health Engineering (DPHE) through promoting sanitary latrines, when the sanitary latrine coverage was only 1%. In the ensuing few decades, many attempts were made to discourage open defecation and promote the use of sanitary latrines including social mobilization (SOC-MOB) for sanitation, designing affordable latrines, setting up latrine production centers, and encouraging the private sector to establish sanitation marts. In the early 2000s, a novel community based approach was piloted by WaterAid and VERC not for creating a demand for more latrines but for completely eradicating open defecation. This approach, now known as the Community Led Total Sanitation (CLTS) approach, emerged as one of the most effective models to end open defecation. It generated a nationwide movement for reaching universal sanitation coverage in Bangladesh by eradicating the practice of open defecation. The Government of Bangladesh, International and National NGOs, donor agencies, and above all the people of the country came forward to participate in this noble movement. As a result, the JMP 2015 Report claims that open defecation is practiced by only 1% of the households in Bangladesh. The success in Bangladesh has already spilled over to more than 30 countries of Asia, Africa and Latin America. This is a truly remarkable achievement. The story of how such impressive result was achieved, however, is not widely known. Therefore, WaterAid in collaboration with UNICEF commissioned a study to capture the history of the journey to end open defecation. This article is the output of the study. It is based on interviews with the key actors who transformed the small experiment in a few villages into a national movement for ending open defecation. It presents the fascinating history by recounting the chronology of important events, the driving factors, the political economy of the movement, financing and incentivizing the movement, monitoring, and operationalizing the movement. It also includes a critical analysis of the movement and illustrative case studies. Finally, it discusses the key opportunities and challenges beyond ending open defecation. It is expected that the article will help professionals and policy makers to understand the many facets of the movement for ending open defecation in Bangladesh, and facilitate to adapt the model in a more structured and informed manner to achieve similar results in other countries.

*Keywords: sanitation, open defecation, community participation, sustainability, public health*

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## THE ROAD TO FAECAL SLUDGE MANAGEMENT IN BANGLADESH

Hasin Jahan\*

This paper focuses on the 2<sup>nd</sup> generation sanitation problem that emerges after attaining remarkable sanitation coverage over the last two decades in Bangladesh and suggests the ways out to encounter this challenge. An incredible steep fall could be seen if the JMP data has been analyzed in the context of reduction of open defecation. In 1990, JMP reported 34% open defecation while it reduced to 19% in 2000 and the latest report of 2015 refers only 1%. No doubt that the country has made tremendous success in reducing open defecation. Especially, during the last decade, due to special drives of the Government and development partners with active engagement of local government institutions and communities, sanitation programs gained momentum with focus on building different types of low-cost pit latrines resulting in reducing open defecation rate to 1% by 2015. Despite such miraculous success, the problem has not yet been solved; rather, a second generation sanitation problem has emerged in Bangladesh. About 80 metric tons of human sludge is generated every day in the country; 24 metric tons/day in urban areas, of which, only 960 tons (about 4%) are treated. The rest volume is dumped into the open or storm drainage system that pollutes the surface water, shallow aquifer and environment causing severe hazard to human health. Only, about 22% of Dhaka city area is currently under the coverage of sewerage network and in the areas, where there is no network, about 55% of the buildings do not have any septic tanks and directly discharge the human faeces to open sources. Due to rapid expansion of low-cost latrines, huge number of pit latrines exists in rural areas and in low income communities of urban areas, which get filled quickly. The country has put enormous emphasis to promote low-cost latrines without thinking of sludge management. Recycling of the human waste by converting it into proper organic fertilizer/compost would be one of the practical solutions. Bangladesh uses around 3.5 million tons of fertilizer every year of which about 2.6 million tons are imported. Government provides huge subsidy to the farmers for fertiliser each year (around 18 taka/kg). If the entire amount of sludge is possible to convert to proper organic fertilizer/compost, it might turn out to be 3 million tons, which, is more than the amount imported every year. Besides, use of this manure could improve soil texture, save the environment from pollution of the surface water and protect from health hazards. This paper also suggests how the government and non-government agencies, academic and research institutes and private sector could be linked together for bringing changes at policy and practice levels keeping in mind that the political will remains the key.

*Keywords: 2<sup>nd</sup> generation sanitation, faecal sludge management, organic fertiliser, compost*

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## REVIEW OF LEGAL AND OTHER GOVERNING FACTORS RELATED TO FAECAL SLUDGE MANAGEMENT IN BANGLADESH

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This abstract reviews the factors that govern the establishment and functioning of faecal sludge management in Bangladesh. The governing factors include legal instruments, institutional arrangement, policies, strategies and plans. Despite the existence of an impressive array of water supply and sanitation sector-related acts, policies, strategies and plan, faecal sludge management has long been neglected. Sanitation services, including sustainable faecal sludge management, in urban areas of Bangladesh are significantly inadequate to meet the ever growing demands of rapid urbanization. Impressive progress towards elimination of open defecation has created a new challenge of faecal sludge management, which, currently in the absence of a planned system in place, is likely to undermine the achievements made and give rise to significant public health and environmental risks. The acts, policies and strategies also lack clarity on the roles and responsibilities of various agencies. Further, the technology that is appropriate in the urban context of Bangladesh has yet to be determined. Moreover, there is lack of awareness on adverse health impacts resulting from uncontrolled discharge of faecal sludge and on the benefits of using treated faecal sludge in agriculture and aquaculture. In summary, faecal sludge management in Bangladesh is unsystematic, unplanned, poorly regulated and mostly provided by individuals or informal private service providers. To develop a sustainable faecal sludge management system in Bangladesh, major recommendations in this area include providing specific references and guidelines on faecal sludge management in the related laws and other documents, including defining the roles and responsibilities of government institutions and other stakeholders. As next steps to mainstream faecal sludge management in the water supply and sanitation sector, and to use treated faecal sludge in related sectors, particularly agriculture and fisheries sectors, this study provides additional recommendations on related themes: capacity building, advocacy and awareness raising, technical measures and economic and financial measures. This study further recommends that the Policy Support Unit for water and sanitation sector of the Local Government Division be entrusted with the task of facilitating the recommendations of this study. It is also suggested that Policy Support Unit be supported in this initiative by ITN-BUET, particularly with regards to technical aspects, research and testing of pilot programmes, and the various thematic groups established by the Local Government Division to coordinate and support several thematic areas of the water supply and sanitation sector.

*Keywords: governing factors, legal instruments, faecal sludge management*

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## SMALL DOABLE ACTION APPROACH TO ADDRESS LEAKY LATRINES AND CHILD FECES DISPOSAL IN SOUTHWEST BANGLADESH

Julia Rosenbaum, Muhammad Faruqe Hussain\*, Selina Ferdous, Khairul Islam

WASHplus/Bangladesh is a USAID-sponsored project led by the INGO FHI360 with WaterAid Bangladesh as lead implementation partner in collaboration with local government, partner NGOs and communities. The four-year program seeks to establish sustainable provision of WASH for over a quarter million marginalized people living in southwest Bangladesh. Many southwest villages have high latrine coverage and use, but latrines leak into surrounding ponds, canals or in surrounding environment. a) Only 10% percent of surveyed households have access to improved sanitation facilities; b) 63% have pit latrines with slab but broken water seal; c) About 19% use 'hanging latrines' over nearby canals or ponds; d) 32% of households report that children defecate in latrines, 16.8% 'put or rinse faeces into latrines' or 'throw into a specific hole' (17.9%), one-third (33.1%) report have no specific disposal place. Like many sanitation programs, WASHplus incorporates CLTS-like 'triggering' to engage communities to examining their current situation, commit to ending unhygienic defecation practices and invest/engage in hygiene practices. Our challenge is to trigger actions that end unsafe fixed point defecation, either fixing leaky latrines - by patching leaky rings, upgrading systems, or other 'small doable actions' developed with local communities. To do this, a 'catalogue' of hygienic and feasible improvements was developed, including designs of latrines that provide solutions to the geo-physical characteristics of the southwest coastal parts, including raised plinth and sand envelopment around the pit. The improvements are retrofitted in the traditional single and twin offset pit latrine design. Sanitation marketing, now often 'twinned' with CLTS under the 'total sanitation' umbrella, is a part of the WASHplus project model. Local entrepreneurs are trained in marketing appropriate sanitation products, and coordinating with local triggering efforts to ensure a smooth supply-chain of necessary materials, allowing marketers to reach out to householders with sanitation options and financing. WASHplus includes a focus on safe disposal of infant and child faeces, incorporating a 'Small Doable Action' (SDA) approach to changing WASH practices. SDAs are behaviours that are deemed 'feasible' by households in resource constrained settings, and effective at individual and public health levels. SDAs by age (lap child, crawling, toddler, young child) are promoted through nutrition and sanitation programming, encouraging hygienic disposal of infant and child faeces, often utilizing 'enabling technologies' like potties, hoes and other objects available in homes or easily accessible. The unique focus of triggering to end unhygienic defecation coupled with the SDA approach resonates with households.

*Keywords: Small Doable Action (SDA) Approach, Child feces disposal, Environment*

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## SAWRP – THE NEXT GENERATION WASH INITIATIVE IN BANGLADESH

Khandker Zakir Hossain\*, Kazi Morshed Alam

South Asia WASH Results Programme (SAWRP) is a new addition to the WASH sector in Bangladesh began its field level operation in Bangladesh from June 2014. This is new because of its innovative Payment by Results (PbR) approach in which the Implementing Agencies (IAs) get paid for their planned services after delivering of the agreed results with the donor. While, SAWRP's outputs are fixed and defined with minimum standards to create access to hygienic sanitation and safe water supply facilities for and to outreach with Hand Washing With Soap (HWWS) messages for a set target population; its outcome phase is aimed to facilitate sustainability of the results delivered in the output phase. SAWRP is implemented in Bangladesh and Pakistan under the leadership of a Plan International led Consortium and in Bangladesh it is implemented by Plan International Bangladesh, WaterAid Bangladesh and Unilever Bangladesh with a sizable target to achieve. Within a limited period of experience SAWRP has demonstrated some interesting characteristics, which could shade some useful learning for the WASH sector actors in the region. Innovative PbR financing mechanism on results delivery through independent, third-party verification in rigorous manner. SAWRP is based on clearly defined beneficiary counting protocols, quality assurance procedures in results reporting, and independent verification mechanisms for reported results. Every result is connected with payment, so their qualities as per the devised minimum standards are ensured through rigorous monitoring by multilevel project staff in every reporting period. Innovative reward-punishment mechanism for implementing partner organizations stimulate increased commitments and fair competition in achieving targets within time, budget and defined standards. The entire project MIS has now been converted into real-time, online database with geo-spatial (GPS) reference and accuracy. Project activities and progresses can be visually observed from any corner of the world through internet or real time satellite images. Continuous demonstration of innovations in project implementation at the field level and remarkable progress in evidence capturing and results-based reporting due to well capacitated and better equipped professionals at the field level. Integration of Local Government actors, local WASH enterprises and local communities ensured local ownership and better sustainability. Along with minimum financial complications and assured 'value for money', WASH Results project emerged as a highly replicable WASH solution in the region due to its simple, effective and efficient implementation and monitoring and verification mechanism.

*Keywords: SAWRP, Payment by Results (PbR), WASH, Real-time MIS*

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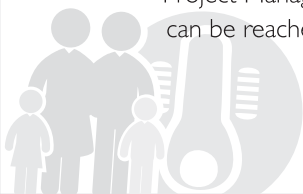
## SO5 – AN EFFECTIVE HAND-WASH BEHAVIOUR TRANSFORMING PROGRAMME

Emran Rahman\*

Unilever as the only private sector partner of South Asia WASH Results Programme (SAWRP) consortium has been contributing through its hand-washing behavioural change model 'Lifebuoy School of 5 - So5'. So5 is a part of Unilever's Sustainable Living Program's Global commitment of changing hand-washing behaviour of 1 billion poor people around the world. So5 is developed keeping children psyche into consideration and implemented in a 21 day cycle with 4 visits. The basis of the model is Unilever's Levers of Change, a 5 pillared behavioural change framework. Each of these pillars are addressed with interactive modules viz. friendly presentation of the program for quick ice-breaking, puzzle poster and GlowGerm-Demonstration. Jingle, pledge and comic stories are the integral components of So5 for gradual yet solid understanding of hand-washing needs, supported by soap distribution and placement in school toilets. In Bangladesh under SAWRP partnership, So5 is managing an outreach of more than 4.2 million school going children with its interactive and experiential modules towards positive change in hand-washing behaviour with soap. Out of several corner-stones of the programme success, some are mentionable: a) So5 facilitates Lateral Learning which triggers child-to-child transmission of messages by encouraging children as change-agents and responsible citizens through enrolment charts, bolstered by rewards. b) The design of So5 concentrates on Social Reinforcement towards making the changed behaviour ongoing through engaging Community Key Opinion Formers to encourage importance of HWWS among the communities with immense Domino Effect. Involvement of mothers and teachers through courtyard meetings and discussion sessions focusing their roles also helps to maintain the momentum of the desirable behaviour at households and schools respectively. c) So5 also facilitates in Children's Cognitive Development to trigger mental opening up with participatory and leadership roles, as well as interactive modules further fosters their readiness of minds. This in turn helps in removal of inhibition through effective ice-breaking and rapport building, promptness and spontaneity through infusing competitive spirit. Learning post implementation of So5 also suggests there has been a Synergy in Making Soap Available at both household and school ends by the beneficiaries and this is resultant of the successful transfer of knowledge in turns transformed behaviour around HWWS. As a result, So5 appeared as a platform that assimilates teachers, community key opinion formers, families and local GoB actors for making hand-washing with soap a habit.

*Keywords: School of 5 (So5), Behaviour Change, 360 Reinforcement, Evident Demonstration*

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## HEALTH VILLAGE: AN INTEGRATED SANITATION PERSPECTIVE

Md Dider Uddin, Md Amir Khasru, Partha Sarathi Kuntal, Mohammad Zobair Hasan\*

'Health Village' is a model shaped by DORP that includes 22 agenda, where sanitation is one of the important factors. The government has adopted a number of policies to remedy the challenges of the WASH sector. These policies emphasize decentralization, user participation, the role of women, and 'appropriate pricing rules'. Sanitation is a problem that is considerable for declaring a health village as inadequate sanitation facilities leads to various health related problems. Triggering the problem of sanitation by linking the local government institutions with community people through various platforms at Upazila and Union level, community people can be made aware to use proper sanitation system and refrain from open defecation. Budget tracking is the main tool to engage the community in the process of getting services from DPHE and Union Parishad and ultimately reaching to the community for ODF. Health village Groups ward level give opportunity for the people to discuss the sanitation issues and raise demand for necessary budget and products from the Union Parishad. WASH Budget Monitoring Club at Upazila level facilitates lobby and advocacy with DPHE, Upazila Parishad and Union Parishad to fulfill the demand of community. Budget Tracking could be replicable in other Unions and Upazilas as community engagement, multi stakeholder relationship, and media coverage are pre-condition that is more or less practiced by different organization and sustainable as well. Community people and local government institutions take part in the main role. Budget increase of the Union parishad for water and sanitation was the main factors as they could support the community with ring and slab for making latrine. The campaign and promotional activities inform people about the demerits of open defecation. Lobby and advocacy with different stakeholders at village and Union level sensitized and act accordingly to support the community. WASH budget monitoring at Union parishad, DPHE and Upazila Health Complex was the effective most activity that engaged community and ensured needed budget. The villagers have now realized how much benefits can be earned by giving up this habit. Impressed by this, the people of nearby villages have also come forward to make efforts to end open defecation there. Poverty knows no law! People from extreme poverty level could not be able to cop up with neighbors. Practical implications of the work is very much feasible as the practice would be sustainable due to engagement of community under platform base activities which has been set up and Union Parishad is responding more after become sensitized. All the villages can be made open defecation free through these approaches thus whole country but need more cooperation among stakeholders.

*Keywords: ODF, Sanitation, Village, Community, Awareness*

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## SANITATION ENTREPRENEURS DEVELOPMENT AND LINKING MICRO FINANCE

Alok Kumar Majumder\*

In Bangladesh rural households latrines are mainly used direct pit latrine; constructed by using 3-5 rings, a concrete slab with a plastic pan and some latrines based on septic tank. In most cases water traps that breaks off shortly after installation, making the latrine unhygienic as the contents of the pit are exposed. The shift to offset flush latrines will ultimately offer a higher quality product. With a little additional investment the health risks posed by the current style of latrines could be substantially reduced. Bangladesh WASH Alliance partners with technical support from WSP World Bank have been implementing sanitation entrepreneur's development and linking micro finance to ensure access to improved sanitation. This abstract aims to present the approach to develop private entrepreneurs and ensure sustainable finance for sustainable sanitation and appropriate technology to sustain Zero open defecation. As an effort, 7 partners NGOs of Bangladesh WASH Alliance are being involved in sanitation entrepreneur's development and linking micro finance approach to achieve sanitation targets. It is identified that the key elements of Sanitation entrepreneurs development, linking micro finance are capacity building of local entrepreneurs, pro-poor business model taken to consumer's doorstep and linking entrepreneurs with micro finance institutions, creation of demand from community and development of product as need, choice of technological options and linking private entrepreneurs with the local government institutions with the union parishad. It is found that annual income of 77 entrepreneurs in WASH Alliance working area has increase form BDT 74,47,750 to BDT 1,14,08,700. Through WASH Alliance partners 210,000 people have access to improved sanitation from 2011 to 2014. Couple of union parishads used sanitation entrepreneurs to produce latrine for the poor people and as a result of that people get durable latrine technology which will sustain for long time. It is also found that the social status and dignity of the families have increase. Moreover, the study reveals that twin pit offset latrine technology provides solution of faecal sludge disposal problem. It is to be noted that the scaling up of this approaches will address 2nd general sanitation problem (get rid of faecal sludge management) and Zero open defecation will sustain in Bangladesh. Most importantly this approach/model does not depend on donors of external fund and the existing market chain will endure this model.

*Key Word: Entrepreneurs development, Micro finance, WASH*

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## SANIMART: PROMOTES SAFE MENSTRUAL HYGIENE FOR INCLUSIVE AND SUSTAINABLE SANITATION

Uttam Kumar Saha, Aklima Khatun\*

The national hygiene baseline survey of Bangladesh, June 2014 revealed that menstrual hygiene management remains a challenge especially for school girls and adult female in slums and low income communities. Safe and hygienic management of menstruation is an effective component for inclusive and sustainable sanitation. Social and cultural barriers as well as religious conventions often restrict women from performing certain activities during their menstrual period. 40% school girls reported that on an average they missed three school-days in each menstrual cycle because of lack/absence of facilities and services. About two-thirds of school girls had not heard about menstruation before menarche, and suffer from trauma and embarrassment when it occurs at school. Greater availability of sanitary napkins could improve the situation. As supply is limited, products are costly and not available in convenient places or from sellers that women and girls feel confident in approaching. Hygiene education for proper use and disposal of napkins in sanitation facilities are equally important. To address this problem, Practical Action, with support from UNICEF, European Commission, and Dutch WASH Alliance established SaniMarts in 10 municipalities to promote the use of sanitary napkins. Adolescent girls and women were organized in groups of 5-10 members and trained in production, packaging, demand generation and marketing of sanitary napkins. They also learned how to assess the market for materials to get quality but cheap raw materials and thus lower napkin production costs. They are now running their businesses independently. They produce sterilized napkins at low cost (50 taka per packet of 10) in Sanimart shops, undertake campaigns with potential customers in schools, low income communities and health centers, and make community health workers and doctors aware of their products. They supply through small pharmaceutical shops and at the doorstep. A SaniMart group member can earn 1500-2000 taka/month, working for an average of 3 hours a day, which is very beneficial in meeting educational expenses. Most SaniMarts are still performing well, and there is significant potential for wider scaling up. This paper describes the learning from this initiative which might be interesting for stakeholders who are working in the arena of equitable and inclusive sanitation, reproductive health, education and empowerment for adolescent girls and women. Proactive engagement of groups of female/adolescent girls as private companies and sincere support from municipalities could lead to an improvement in menstrual hygiene, livelihoods of the adolescent girls and women, and to overall social and economic empowerment and sanitation improvement.

*Keywords: Sanitary Napkin, Menstrual Hygiene, Safe*

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## UNRAVELING THE USABILITY OF RURAL LATRINES IN BANGLADESH

Jess MacArthur, Raisa Chowdhury\*

Bangladesh has had success moving from an open defecation rate of 39% in 1990 to just 3% in 2015. However, the sanitation market has been relatively unchanged since the initial days and is heavily reliant on NGO and government interventions for market subsidy and stabilization. Though the achievement in gaining ODF (open defecation free) status has been significant, the sustaining it and ensuring inclusivity and accessibility all year round have been some of key concerns. Data for this paper comes from the PROOFS project baseline survey conducted in 2013 by Nielsen Bangladesh. In each of the seven districts survey assumed a P value of 0.50 (with  $\alpha$  set at 5%,  $z$  at 1.96); results 384 samples (rounded to 400) for a total of 2800 households surveyed. Within the WASH component, the survey sought to understand the dynamics of latrine use, ownership and access beyond just an ODF zone. Matching the JMP value, the open defecation rate found to be 3.6% but various factors impact the usability of the existing latrines. Uniquely, 69% of respondent households were unwilling to share where infant (0-23 months) feces was disposed of, showing a lack of willingness to openly discuss the more taboo topics and perhaps an understanding that common practice is not hygienic. There appear to be two main barriers to the practice of use- 1) safe infrastructure access and 2) safe social access. 16% of members limit their use because of a lack of walls or privacy in the latrine (34% in Rangpur). On average 32% of latrines were more than 10 meters from the home and 31% of latrines are affected by storms- 23% being seasonal flooded showing that while 20% claim they are not using the latrine, seasonal barrier to access is much higher than that with more than 30% unable to be accessed once the monsoon starts. During monsoon, distant and flooded latrines are not accessible to seniors, children and pregnant mothers<sup>6</sup>. It is possible that households reporting someone not using the latrine could represent the sum of the pregnant women and seniors. While further research must be done to continue to unravel both the social and infrastructure challenges around latrine usability in rural Bangladesh, iDE has begun to tackle the challenges through the design of a smart latrine shelter using Human Centered Design (HCD) to understand the incentives behind having a small latrine shelter; additionally working to develop marketing messages that address the issues around latrine placement for year round accessibility, which stem from a household perception about sanitation.

*Keyword Set: Open Defecation, Challenges, Sustainability*

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## REACHING THE HARD-TO-REACH: A CASE STUDY FROM THE TEA GARDENS OF BANGLADESH

Shahrukh Mirza, Mahfuj-ur Rahman\*, Babul Bala and Shamim Ahmed

The 2011 National Strategy for Water and Sanitation in Hard-to-Reach Areas of Bangladesh acknowledges the difficulties of reaching certain pocket zones of exclusion despite overall progress in water and sanitation. Despite the impossibility of universal access to water and sanitation without reaching these areas, there is a dearth of understanding and research on feasible programmatic interventions that can meet the various geophysical, social, economic and infrastructural challenges in these enclaves. This paper presents a case study from WaterAid Bangladesh's work in the tea gardens of Sylhet, where extremely poor WASH access is compounded by technological challenges, restricted access and a highly marginalised populace who work as bonded labour with little or no access to basic facilities. Female tea garden workers are doubly burdened by skewed gender dynamics which require women to be responsible both for income-earning activities as well as WASH-related chores. In this severely exclusionary context, WaterAid has implemented the first water, sanitation and hygiene programme (WASH) for tea gardens in Bangladesh, employing a Shared Responsibility Model where workers are motivated to build hygienic latrines, while WaterAid and its partner IDEA support access to water. Alongside, the project works on social perceptions of the importance of WASH through community resource centres, theatre groups and awareness-raising events. Underlying these efforts is sustained advocacy with tea garden management authorities to gain and retain access into the gardens. To date, the project has achieved 100% WASH coverage in 6 tea gardens, and is working in a further 12 gardens, bring safe water, sanitation and hygiene awareness to 33,000 people. As a pioneering intervention in a Hard-to-Reach area, WaterAid's experience in tea gardens provides important insight into how innovative project design and multifaceted approaches can offer high impact, low-resource solutions to multiple social, technological and power barriers to universal WASH access.

*Keywords: Hard-to-Reach, Shared Responsibility Model, Universal WASH Access*

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## INCREASING WASH ACCESS IN HARD-TO-REACH AREAS: BRAC WASH PROGRAMME

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Bangladesh has significantly improved in water and sanitation coverage in the last two decades. However, the sanitation situation still needs much attention. Considering the geophysical, geo-hydrological and its geographical location, Bangladesh is quite vulnerable to climate change. This has persistently been a hurdle to reach and sustain hygienic sanitation and hygiene practice, especially in the Hard-to-Reach (HtR) areas. The geophysical context of char, haor, exposed coastal areas, hilly, flood-prone areas and drought-prone areas are diverse. These areas are distinctive from location to location. Each of these areas has different characteristics and livelihood pattern of the community. The hard-to-reach areas are also extremely disadvantaged in terms of accessibilities. Poverty and vulnerability are very high among the population. Moreover, the limited choice of feasible technological options for these areas makes the provision of sanitation even more challenging. As a part of the commitments to the MDG targets, BRAC WASH has been facilitating the implementation of its project in 250 upazilas, where 82 upazilas are HtR. Despite having so many challenges, BRAC WASH achieved a satisfactory result in terms sanitation coverage. Initially the sanitation coverage was around 27% and at present it is 66% in the HtR areas. After providing double-pit latrines as grant support to the ultra-poor, BRAC WASH also tried to implement group latrines. BRAC WASH also tested six types of innovative latrines in haor areas. These latrines have proved their effectiveness, however the material cost is high for instalment, operation and maintenance. Since maintaining hygiene is a core challenge, BRAC WASH is emphasising hygiene promotion in the community. Availability of the latrines construction materials was one of the challenges for these areas. To address this, BRAC WASH opened sub-centres of rural sanitation centres in these areas. These areas need special attention in different aspects of development including technological options, social mobilization, financial resources, and service delivery mechanism because of special geographical, hydro-geological and social settings.

*Keywords: Hard-to-Reach (HtR), Poverty, Vulnerability, Ultra-poor*

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## SAFE SANITATION AND SEWERAGE SYSTEM FOR CLIMATE CHANGE VULNERABLE COMMUNITY IN BANGLADESH

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The institutional framework of the water supply and station sector in Bangladesh has taken shape over the last two decades. The Government of Bangladesh expects to achieve the target of safe sanitation and solid waste management for all as a response to the Millennium Development Goals (MDGs) targets; i.e. 'Sanitation for All by 2015'. Small Urban Towns are the elected local government authority in urban areas, other than in large City Corporations. They are responsible for development and maintenance of social services and physical infrastructure, including sanitation facilities. But they do not have necessary organization and manpower and financial resources to take up their role effectively. Therefore the central government, from time to time, implements large projects through govt. agencies. However, maintenance responsibilities remain with the Small Urban Towns. For planning of Sanitation and Sewerage improvement of Chalna urban area and detail design of the same, data collection on the subject has been carried out in the field. During the survey, the overall sanitary condition of the urban area was found not so satisfactory and there is need and scope for improvement of the systems. Solid Waste Management is a part of public health and sanitation. The small urban area is supposed to undertake the task of solid waste service delivery, with its own staff, equipment and funds. The collection and disposal of municipal solid waste is one of the pressing problems of city life, which has assumed great importance in the recent past. With the growing urbanization, problems are becoming acute and call for immediate and concerted action. This study will try to find out the safe sanitation and sewerage technologies for climate change vulnerable community of Bangladesh like Chalna.

*Keywords: Climate Change, Sanitation, Solid waste management, Chalna urban area*

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## LIVED EXPERIENCES OF MENSTRUATION AND MENSTRUAL HYGIENE IN BANGLADESH

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Despite research on the importance of safe and well-managed menstrual periods for the reproductive and psychological health of adolescents, an understanding of menstruation as a normal physiological phenomenon is absent in society. In Bangladesh, the topic is taboo across family, community and public spaces, and reliable sources of information and support are scarce, perpetuating the culture of stigma. The lack of menstrual hygiene management facilities in schools, work places and in sanitation facilities in public spaces adds to the challenges girls and women face in managing their periods safely every month. Overall, knowledge, attitude, and practices around menstruation, as well as access to facilities, seem to have changed very little over time in spite of rapid urbanisation and more girls being in schools and at work. This paper draws on the personal narratives of adolescents from urban slums, and poor and extreme poor households in rural areas, to demonstrate the impact on physical and emotional health of menstruation, particularly menarche, in their lives and the challenges they face in managing this monthly event. Lived experiences are captured through in depth interviews carried out with the help of a well-tested checklist. The inclusion of adolescents from urban and rural areas allows exploration of the differences in experiences and challenges faced, highlighting how universal barriers are transmuted into context-specific trials. Insights from these accounts are used to elicit contextual, practical recommendations for programme and policy work around menstruation.

*Keywords: Menstrual hygiene, Reproductive and psychological health, Taboo*

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## GENDER AND EQUITY APPROACHES TOWARDS SANITATION: BRAC WASH PROGRAMME

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BRAC's water, sanitation and hygiene (WASH) programme began in May 2006 in 150 sub-districts and in October 2011 extended to 250 sub-districts, reaching some 66.4 million people across half of Bangladesh. BRAC adopted gender policy and guidelines in 2007, empowering women and transforming gender relations within village households and communities, and within BRAC. The objective of this paper is to describe which areas were adapted for mainstreaming gender approaches and ensuring equity of services. This paper also explores what was achieved and how, including lessons which could be useful for other developing countries. Both qualitative and quantitative data were collected from primary and secondary sources. The validity of data was cross-checked through triangulation of the same data produced by different methods. Findings show that gender mainstreaming as a cross-cutting strategy helps women and other disadvantaged groups, notably poor and ultra-poor households, to become aware of, and increase their access to services and decision-making processes for equal benefits. The programme constituted 30% (873) regular female staff who hold junior to senior-level position, and 100% (5,089) project-based staff. Three quarters of the programme teams working on implementation were female. At community level, more than 65,000 Village WASH Committees (VWC) were formed using participatory methods. Just over half of VWC members were female, which reflected gender-balance in decision-making power. The programme provided gender training to 4,000 staff, 18,500 religious leaders and 43,300 students. Separate latrines with menstrual hygiene facilities were constructed for girls in over 5,200 secondary schools and formed student brigades with equal numbers of boys and girls in each school. More than 43 million cluster meetings were conducted for men, women, adolescents and children to raise awareness of hygiene and demand for sanitation. About 11.6 million non-poor were mobilised to build sanitary latrines with their own resources, about 1 million poor people received sanitation loans and 5.9 million ultra-poor people got grants for latrine construction. The integrated monitoring system of WASH programme makes it possible to measure and report on gender- and equity-specific changes in sanitation and hygiene habits. In 2006, hygienic latrine access in the programme areas was 31.5%, very similar to the national figure of 31.9%. In 2013 it was 84% in WASH I areas (where national figure was 58%), however poor, ultra-poor, disabled persons, and those in hard-to-reach areas are still underserved. In addition, affordability and involvement in decision making of vulnerable groups are big challenges which need to be addressed.

*Keywords: empowering women, transforming gender relations, ultra-poor, equity of services*

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## ACCESSIBILITY SANITATION FACILITIES IN PUBLIC PLACES: A CRITICAL REVIEW THROUGH ACCESSIBILITY AUDIT

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A staggering, 15% of any particular population are people with disabilities (WHO, 2011). Ensuring accessibility is crucial to provide inclusive services. Accessibility issues are seldom ignored in the design and construction of sanitation facilities in public or private buildings. WaterAid along with B-SCAN, a Disabled People's Organization (DPO), carried out an accessibility audit in twenty notable and iconic public buildings of the country's two major cities, Dhaka and Chittagong. The objective of the study was to assess the basic facilities of these buildings by persons with different kinds of disabilities, and draw the attention of relevant authorities and policy makers. The audit revealed that, accessibility features have not yet been ensured in the most visited and recognizable public buildings, indicating widespread negligence towards the inclusion of persons with disabilities. Most of the toilets were neither accessible nor usable in public buildings because of lack of space for wheelchairs, floor curbs, ramps, inappropriate door width; tactile paving tiles for the visually impaired, lack of appropriate lighting, absence of grab bars/hand rails, absence of high commode, and inaccessible placement of washroom accessories. The accessibility audit done by WaterAid and B-SCAN will be used for evidence based advocacy along with other DPOs, the government institutions, private sector, media and NGOs. It is important that the issue be taken forward by the government, private sector and respective building authorities, who should conduct accessibility audits before building any infrastructure. WaterAid and B-SCAN shared these findings with building owners and the media, and are looking forward to conduct a repeat audit in the future.

*Keywords: Accessibility audit, Public buildings, Persons with disabilities*

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## BOTTOM UP APPROACH FOR CLIMATE ADAPTATION TOWARDS IMPROVING SANITATION

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In terms of severity and frequency of different climate change induced hazard events, water supply and sanitation sector are at high risk in the coastal belt due to inland saline front moving, tidal or storm surge inundation and devastating cyclone. Lack of coordination and support to develop vulnerability understanding and adaptive planning with linkage to centralize decision making enforced further challenge in providing access to WASH service in climate vulnerable area. Existing WASH regulatory frameworks is mainly concerned with services delivery for sanitation but has not been able to engage community in assessing their vulnerability and adaptive participatory planning of their context. This paper highlights the experience and lesson learned by WaterAid in implementing a community centric approach to improve adaptive capacity of climate vulnerable people, LGI, and duty bearer through enhancing and promoting access to resilient WASH services. By introducing Ward Development Management Committee (WDMC) as a representative community platform at ward level linked with union parishad, promotes community based adaptation through leadership of local government. WDMC motivate community for understanding upcoming vulnerability, potential adaptive measures and create sense of ownership towards resilient sanitation along with sustainable development process. Committee play a leading role in conducting Participatory Ward Vulnerability Assessment (PWVA) with the engagement of community people and development actors which unveil the current and future climate challenges and promotes coordination, synergy and collaboration towards improving sanitation with integrated ward development plans. Each ward development plan represents comprehensive integrated multi-sectoral initiatives passing through a mass validation process, compiled at union level and aligning with LGI planning and budgeting process. In this process WDMC is promoting a common participatory planning with a vision of 'One Ward One Plan', for efficient use of limited resources, avoiding duplication and improving overall coordination role of local government. In some instant, different development actors initiatives at community level are merged with WDMC. Now WDMC is comprehensively dealing with sanitation and other various development aspects like food security, education, health, DRR. This bottom up approach 'One Ward One Plan' for mainstreaming sanitation with integrated development, leading by WDMC and linkage with local government is gradually getting attention and acceptance. But replication of this approach at large scale is a great potential in terms of horizontal and vertical integration, mainstreamed into national strategies and planning.

*Keywords: Bottom up approach, Climate adaptation, Ward Vulnerability Assessment (PWVA)*

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## ECOLOGICAL SANITATION: SUSTAINABLE OPTION IN HARD-TO-REACH-AREAS (HtRAs) of BANGLADESH

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In the last few years sanitation coverage in Bangladesh has significantly improved, reaching 1% (WHO/UNICEF JMP, 2015) but the coverage in the Hard to Reach Areas (HtRAs) remains inadequate because of lack of appropriate technologies and associated business model. To address the sustainable sanitation options for HtRAs, Practical Action Bangladesh along with three PNGOs (SPACE, BASA, and Commitment) conducted action research and pilot projects on ecological sanitation from 2009 to 2013, and constructed more than 300 Eco-toilets in 18 clusters of nine geo-hydrologically difficult districts (hilly areas, barind tract, flood prone, urban slums, haor areas) with financial assistance of UNICEF, DPHE and UKaid. Practical Action initially developed (11) prototype of Urine Diversion and Dehydration Toilet (UDDT), and Urine Diversion Toilet (UDT) technologies and found difficulties especially in affordability by the poor people. To address this, additional consultations were organized with sector experts and user's community and 4 new cost effective prototypes were developed and tested. Practical Action launched users' satisfaction study in mid-2013 to assess technological appropriateness, cost effectiveness, O&M and user-friendliness of toilets, through systematic monitoring and found environmental benefits, such as reduction of water consumption and soil, water and environmental pollution in the operation and management context of the ecological sanitation compared to single pit latrines of HtRAs. Similarly, financial benefits, social perspectives, and potential health risks associated with using sanitation end products (like urine and composted excreta) were assessed and measured by external researchers and institutions. The quality of end products was found nutritive after testing from the Department of Soil, Water and Environment of Dhaka University; and Institute of Epidemiology Diseases Control and Research (IEDCR) has recommended it safe to use in growing food crops and grains. The only hindrance is the capital cost of installing these toilets, and that can be addressed by introducing sanitation credit and smart subsidies for hardcore poor people. The findings of this paper will be useful for sanitation researchers and public health professionals who are working in the WASH sector, and will also be useful for policy makers and planners in designing future sanitation projects and programmes for HtRAs in Bangladesh.

*Keywords: Ecological Sanitation, Hard-to-Reach-Areas (HtRAs), Sanitation credit*

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## CONTRIBUTING TO JOURNEY TO ZERO THROUGH RE-ADDRESSING COMMUNITY INTEGRATION

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Standing in 2015, Bangladesh is about to reach a milestone as to be declared as the first South Asian nation to achieve the status of ODF country. NGO Forum for Public Health facilitated CLTS under its Union-based Total Sanitation Programme focusing UP as the major stake for sustaining the impact. From 'community-led' it gradually shifted to 'UP-led' sanitation programme that is now being implemented. This paper explores the nature and potentials of UP-led sanitation intervention to respond to the challenges in achieving sustainable sanitation for all. It also analyses key aspects of sustainable sanitation through meaningful community empowerment. The paper holds the scope for developing an understanding on where Bangladesh stands in light of Total Sanitation as well as addressing the upcoming SDGs. The paper is based on the results accumulated from three governance-focused projects intervened in the last 6 years covering 173 hard-to-reach unions under 49 upazilas of 39 districts. The primary target beneficiaries were the disadvantaged and poor people further categorized into economically poor, geo-physically hard-to-reach, persons with disability, climate refugees, and women in vulnerability. These are clustered as 'hard-to-reach population'. NGO Forum's governance-focused WASH intervention has experienced that it is not feasible for a group of people to bring about necessary hygiene behavior change for the improvement of their lives unless they are involved with the main stream of collective action. Reforming and reviving of the UP's Sanitation, Water Supply & Sewage Committees and inclusion of CBO members in these and other functional Committees of the UPs have facilitated working network relation among the UP, CBOs, CSOs, PNGOs and beneficiaries. This approach not only holds the prospective to sustain any WaSH intervention but also holds a greater potential towards rural development. The sustainability of CBO and CSO capacity is in question if the INGOs and PNGOs withdraw their support. Under the circumstances, the linkage between the CBOs and the local self-government should be developed for the sustainability of the CBOs and certain strategies need to be adopted. New programmes may be initiated in close cooperation of CBOs and UPs for 'Holistic Development'.

*Keywords: Sanitation, Community Led Approach, WASH Governance, CBO*

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## EVALUATION AND RANKING OF SLUM AREAS IN DHAKA CITY BASED ON WASH PRACTICES

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Urban sanitation is still a challenge in Dhaka as the slums lacking proper facilities and slum dwellers are being forced to adopt unhygienic practices like open defecation, hanging latrines, open dumping of waste etc. making the surrounding environment including the water bodies extremely polluted. In effect, it leads to emergence of waterborne diseases. This study investigated four slums in Dhaka city naming Korail, Godown, Tejgaon and Boubazar (Rayerbazar) in terms of the existing conditions on sanitation facility, access to safe water and solid waste management and disposal practices. The study was carried out through assessment of the sanitation parameters and existing sanitation practices through visual observation and also through questionnaire survey in the mentioned slum areas. Quality of water that the slum dwellers use was also evaluated through laboratory tests. The hygiene situation was evaluated through learning about their daily practices before and after defecation, availability of water for bathing, washing etc. Availability of solid waste collection and management system was evaluated and also the frequency of open dumping practices was investigated. Based on all these information collected, the slums under investigation were ranked following a scoring system in a semi-quantitative approach. Three separate scoring systems were followed for the information obtained from visual inspection, questionnaire survey and water quality analysis respectively for each of the slums. The cumulative score provided the final ranking that shows current defecation options and the solid waste disposal options in a slum respectively. The results suggested that, the Boubazar (Rayerbazar) slum exhibited the most acceptable practices on water, sanitation and hygiene behaviour and availability of services. The individual ranking systems enabled separate ranking of the slums. Korail slum exhibited worst situation when visually inspected, while the Godown slum had the worst situation on sanitation, hygiene behaviour (questionnaire) and the water quality. This method of ranking and evaluation is very effective in identifying the shortcomings in living standards and accessibility of the dire necessities of life that the slum dwellers are facing. This will pave the way to apply the ranking pattern to other slums as well in future.

*Keywords: Dhaka, slums, sanitation, hygiene*

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## HEALTH AND SAFETY ALONG THE SANITATION VALUE CHAIN

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Household sanitation in urban areas consists predominantly of on-site technologies, septic tanks and pits, which require regular emptying. Majority of the pits/ septic tanks are emptied manually while very less is being emptied mechanically. The FSM baseline survey in Khulna City (2014) shows that 82% households who emptied their pit/ septic tank used manual emptying services. Among the rest 17% used combined method (mechanical and manual) while only 1% used completely mechanical emptying service. Though in some cities an incipient emptying service is being set-up, but without observing basic health and safety standards this will add a health risk in itself. The working processes involved in these operations expose the emptiers to hazardous working conditions. The threat of fatal accident, injury and work related diseases in this occupation are extremely high and require urgent attention to minimize the safety and health risks towards workers and their families who lack financial and social safeguards. Due to lack of proper treatment facilities and/or enforcement initiative, emptied faecal sludge is being dumped to surface water drainage, water bodies or low lying areas. There are other reasons which make the designated site inaccessible by the manual emptiers. This illegal dumping ultimately pollute environment and create risk to the human settlement. Many of the cities and towns in Bangladesh contain wetlands, which are used for informal aquaculture activities by local residents and the majority of them are contaminated with faecal matter. Poor water quality affects the availability of fresh water for different uses and has negative impacts on the health and livelihoods of the poorer communities. It has also been identified that farmers are also using untreated faecal sludge into the crops. Due to lack of policy, standards, awareness and evidences the FSM services causing impact on health and environment. FSM programme has developed a standard operational guidelines on health and safety guidelines for to be used by the service providers and a training manual for the emptiers. This guidelines will be piloted in three towns and once successful will brought to national level to develop national standards. This paper shares the situation of H&S at each node of sanitation value chain and the researches and interventions require to cut the contact between human and excreta. It also shares the operational manual developed for piloting.

*Keywords: Health and safety, Sanitation value chain, Faecal sludge*

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## COPING SANITATION CRISIS IN PUBLIC PLACES OF DHAKA

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The mega city Dhaka has 15 million dwellers and around 6 million commuters suffering from poor and non-accessible sanitation services. Unfortunately coping sanitation strategy for all the commuters is to confirm using toilet before one sets off as there is nowhere to go en route. Dhaka City Corporations (DCCs) are responsible to provide public toilet services as part of a 2005 sanitation program, leased them to private contractors. But the leasing out policy did not work well, hence the service is not fruitful for the citizens in general. Specially the existing toilets are not women and disable friendly due to management and monitoring failure. The present substandard position of public toilets leads commuters into open defecation and urinate in open environment and impacting negatively on environment and public health which is a question of citizen's dignity as well. Interestingly, the ubiquitous signs in Bangla that presents 'Do Not Urinate Here' are ignored. Moves to impose fines for public urination did not yield any result. The recent initiative by Ministry of Religious Affairs by putting the same meaning in the Arabic alphabets is interesting but yet to get any visible result. Again, only behavior modification without structural toilet facilities will not be functional to elude sanitation crisis. Therefore, constructing public toilet and make it serviceable is prerequisite for public sanitation of Dhaka. The research states that out of 69 public toilets more than half are not in minimum usable condition; 24% are not woman and child friendly and 40% are without running water supply. WaterAid, in partnership with the Local Government Division, DCCs, Dhaka Water Supply & Sewerage Authority to build new toilet facilities. This abstract has triggered to provide sustainable business model adopted for self-financing operation of toilet. It is estimated that about 250,000 (27% female) people got sanitation service in a year (May 2014 to April 2015) at newly built two public toilets at Gabtoli and Mohakhali. As a part of sustainable sanitation service, DCCs have been considering 142 gasoline pump stations where public toilets can be accommodated. This might be one part of public sanitation solution to cover 20 million city dwellers by 2025. Therefore this abstract presents the coping sanitation crisis of the city, highlights the present service provisions and management model along with articulating challenges and lessons-learnt from the interventions and operation and finally provides way out coping the emerging crisis.

*Keywords: Commuters, Public sanitation, Sustainable business model*

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