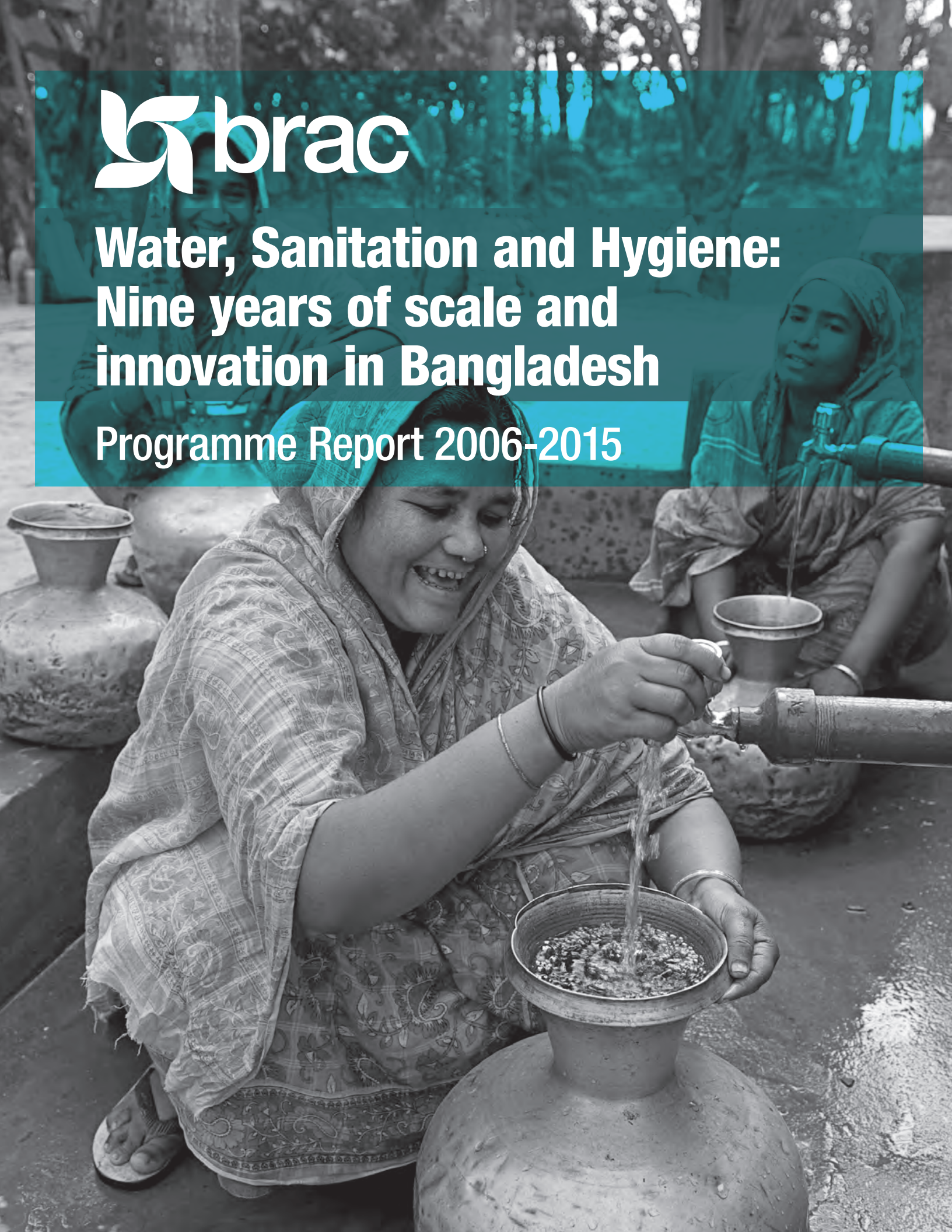




Water, Sanitation and Hygiene: Nine years of scale and innovation in Bangladesh

Programme Report 2006-2015



About BRAC

Our journey began in 1972 in the newly sovereign Bangladesh, and over the course of our evolution, we have been playing the role of recognising and tackling the many different realities of poverty. We have, therefore, developed support services in the areas of human rights and social empowerment, education and health, economic empowerment and enterprise development, livelihood training, environmental sustainability and disaster preparedness. Our work now reaches an estimated 138 million people, across 12 countries in Asia, Africa and the Caribbean.

VISION

A world free from all forms of **exploitation** and **discrimination** where everyone has the opportunity to **realise their potential**.

MISSION

Our mission is to **empower people and communities** in situations of poverty, illiteracy, disease and social injustice. Our interventions aim to **achieve large scale, positive changes** through economic and social programmes that enable women and men to **realise their potential**.

VALUES

Integrity
Innovation
Inclusiveness
Effectiveness



ACKNOWLEDGEMENTS

Many people have made the success of the BRAC Water, Sanitation and Hygiene Programme possible. First and foremost, we would like to sincerely thank Sir Fazle Hasan Abed, Founder and Chairperson of BRAC, for his visionary leadership which has helped bring our success to this level. We would like to extend our gratitude to Vice Chairperson Dr. Mushtaque Chowdhury and Executive Director Dr. Muhammad Musa. Our thanks also go to former Executive Directors Mr. Abdul-Muyeed Chowdhury and the late Dr Mahabub Hossain.

The support of those instrumental in the beginning stages of the BRAC WASH programme must also be acknowledged: the late Mr. Md. Aminul Alam (former Deputy Executive Director of BRAC and former Executive Director of BRAC International) and Mr. Faruque Ahmed (former Director of the BRAC Health Programme, and current Executive Director of BRAC International). We would like to acknowledge the leadership of those who contributed to policy guidance, design and implementation of the programme at different stages, including the late Dr. Babar Kabir (former Senior Director), Dr. Md. Akramul Islam, Director, TB and Malaria Control Programme & Water, Sanitation and Hygiene Programme, BRAC, and Milan Kanti Barua, Programme Head. And of course the contribution of all BRAC WASH staff, current and former, in both the field and the head office cannot go unmentioned.

We would like to thank the Government of Bangladesh for letting us work alongside them, especially the Ministry of Local Government, Rural Development & Cooperatives and its constituent, the Department of Public Health Engineering.

None of this would have been possible without the financial assistance of our donors: Directorate-General for International Cooperation (DGIS), Government of the Netherlands / Embassy of the Kingdom of the Netherlands (EKN), Bill & Melinda Gates Foundation (BMGF), UK Department for International Development (DFID), Australia's Department of Foreign Affairs and Trade (DFAT), charity: water, and Splash. From EKN we would like to thank Mr. Carel de Groot, Mr. Michiel Slotema, Mr. Martin Bos, and Mr. Pieter Terpstra. From BMGF we would like to thank Mr. Jan Willem Rosenboom, Mr. Louis Boorstin, Ms. Jenelle van Eynde, Ms. Raminta Hanzelka and Mr. Radu Ban. From DFID we would like to thank Ms. Jane A. Crowder, from charity: water

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We would also like to acknowledge the support of our other development partners who have been involved with us at various points in the past nine years, including UNICEF, WHO, CARE, NGO Forum, icddr,b, ITN-BUET, World Toilet Organization, WaterAid, Dushtha Shasthya Kendra, the World Bank, Gender and Water Alliance, Asia Arsenic Network, American Standard and RFL Plastics Limited.

We also thank the other programmes within BRAC for their support during implementation, including the Health, Nutrition and Population Programme, Microfinance Programme, Disaster Management and Climate Change Programme, Community Empowerment Programme, Targeting the Ultra Poor Programme and the Education Programme; along with the various other departments including Gender Justice and Diversity, Finance and Accounts, Internal Audit, Monitoring, Research and Evaluation Division, Human Resource Division, Learning Division, Procurement, Communications, Advocacy for Social Change and ICT.

Last but not least, we thank the people of the community all across Bangladesh, who have graciously let us into their lives and worked alongside with us for almost a decade.

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FOREWORD BY

SIR FAZLE HASAN ABED

Poverty is not a natural state of affairs. However, the underlying causes of this dehumanising system can be challenged only when poor people have the tools to make changes. That is why social and economic empowerment, health and education are central to every area of BRAC's work.

From its earliest days, BRAC championed clean water and hygienic sanitation as essential elements in the journey out of poverty. In the 1980s, BRAC went door to door teaching mothers to make oral rehydration solution to reduce the tragic losses through infant and child deaths.

During the 1990s, safe water and latrines were identified by the Government of Bangladesh and BRAC as one of the critical health areas. By this time, 97% of the population had access to free drinking water through shallow tubewells but, as we all know, the discovery of arsenic in the groundwater of large areas of the country set back these gains. The BRAC Water, Sanitation and Hygiene (WASH) programme makes a critical contribution to reversing this.

The programme has reached out across 250 sub-districts – about half the country – and has helped over 39 million people gain access to hygienic latrines and 2.3 million people gain access to safe water. Outcome monitoring shows impressive gains not only in access, but also in use rates of hygienic latrines. Targeted sanitation financing – loans for the poor, grants for the ultra poor – along with motivation for self-financing for the non poor, has ensured equal access for all wealth categories. The programme has also supported more than 5,500 secondary schools (around a quarter of all secondary schools in the country) to build separate latrines for girls with menstrual hygiene management facilities.

These achievements have been made possible through community empowerment and by enlisting the support of significant forces in society including local government, educational institutions, health volunteers, religious leaders, and other stakeholders. However, the greatest contribution has been made by the frontline field staff and the village WASH committees that the programme helped to establish.

Become effective, efficient, then scale up. That is the approach adopted in all BRAC's programmes. The WASH programme has showed policy makers and planners in South Asia and elsewhere that such an approach can help every rural household have a hygienic latrine and good sanitation practices.

The success of the BRAC WASH programme is celebrated, but we must not lose our sense of urgency in the face of so much unmet



need. Currently, the national improved water coverage is 87% and the improved sanitation coverage is 61%, according to the WHO and UNICEF. There are still rural communities without clean water supply options due to arsenic and other contaminants such as iron and manganese. There are coastal areas where saline water has infiltrated the traditional ponds and groundwater supplies. There are many urban areas with inadequate water and sanitation; and safely managing increasing volumes of human waste is an emerging challenge for health. Menstrual hygiene management, especially by adolescent girls, is an issue that has still to be properly addressed. To continue the work of BRAC WASH at scale with less money is a challenge we will rise to meet. We will work with national and local government, with the private sector and with community structures to extend our work into new areas.

We remain aware that the real heroes are the poor themselves, especially the women in the family who will continue to be agents of change in our development efforts.

The donors and partners who helped to launch and support the BRAC WASH programme are to be congratulated on their ambition and willingness to build partnerships. I should also like to thank the Government of Bangladesh for its willingness to let BRAC work alongside them. It is now time to share our effective and proven approach along with our learning. This report will help to raise the global profile of our collective work in this area so that a model that has been shown to be efficient and cost-effective can be implemented more widely both within Bangladesh and throughout the region.

Sir Fazle Hasan Abed KCMG
Founder and Chairperson

ACRONYMS

ADP	Annual Development Programme
BEP	BRAC Education Programme
BMGF	Bill & Melinda Gates Foundation
DFAT	Department of Foreign Affairs and Trade (Australia)
DFID	Department for International Development (UK)
DMCC	Disaster Management and Climate Change Programme (BRAC)
DPHE	Department of Public Health Engineering
DSK	Dustha Shasthya Kendra
EKN	Embassy of the Kingdom of the Netherlands
GOB	Government of Bangladesh
GWAPB	Gender and Water Programme Bangladesh
HH	Household
HNPP	Health, Nutrition and Population Programme (BRAC)
JMP	Joint Monitoring Programme
LCCA	Life-Cycle Cost Approach
LCG	Local Consultative Group
LGI	Local Government Institution
MDG	Millennium Development Goal
MHM	Menstrual hygiene management
MIS	Management Information System
QIS	Qualitative Information System
RED	Research and Evaluation Division (BRAC)
RSC	Rural Sanitation Centre
SHEWA-B	Sanitation, Hygiene Education and Water Supply in Bangladesh
TUP	Targeting the Ultra Poor Programme (BRAC)
UNICEF	United Nations Children's Emergency Fund
VWC	Village WASH committee
WASH	Water, sanitation and hygiene
WATSAN	Water and sanitation
WHO	World Health Organization

GRANT INFORMATION

Project Name Water, sanitation and hygiene programme

Organization Name BRAC

Grant ID# EKN 13880/DHA0075307 (WASH I)
23167 (WASH II)

Grant ID# BMGF 2011/081

Contact person EKN Carel de Groot
Michiel Slotema

Contact person BMGF Jan Willem Rosenboom

Date Grant Awarded EKN 01-05-2006 (WASH I)
01-10-2011 (WASH II)

Project End Date EKN 30-09-2011(WASH I)
30-04-2015 (WASH II)

Date Grant Awarded BMGF 01-11-2011

Project End Date BMGF 30-11-2014

Grant Amount EKN EUR 52.96 million (WASH I)
EUR 27.3 million (WASH II)

Project Duration EKN 5 years 5 months (WASH I)
3 years 7 months (WASH II)

Grant Amount BMGF USD 11 million

Project Duration BMGF 3 years

Report Period from 2006 **to** 2015

Has this project been granted a no-cost extension? EKN (WASH I) – yes;
EKN (WASH II) & BMGF – no

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EXECUTIVE SUMMARY

By helping over 39 million people gain access to hygienic latrines and 2.3 million people gain access to safe water across 250 sub-districts, the BRAC WASH programme has made an outstanding contribution to continuing efforts to transform the water, sanitation and hygiene situation in rural Bangladesh from 2006 to 2015. BRAC WASH has helped to bring about a social transformation in areas where it works, with significant progress on rural sanitation particularly for the poorest families. Success has been achieved over a nine year period not only in the provision of hygienic household latrines, but in their use by all members of the family, and to a lesser extent in good hygiene practices such as handwashing.

In most BRAC WASH programme areas, critical mass has been achieved and open defecation has become a social taboo.

The significant role played by women has changed communities. When the programme began in 2006, it was highly uncommon for men and women in a rural setting to sit and make decisions together. Now village WASH committees have a balanced gender membership with an active core of women who are accustomed to speaking out and playing a full role in community decisions.

BRAC WASH, believed to be the largest WASH programme anywhere managed by an NGO, has demonstrated learning-in-action and become a beacon for progress on sanitation and hygiene in the region and globally.

Why BRAC WASH was needed

The BRAC WASH programme was launched in 2006 as part of a national Bangladesh effort to achieve the Millennium Development Goals and support national targets for water and sanitation. The Government of the Netherlands had committed itself to support the extension of safe, reliable and sustainable drinking water and sanitation to 50 million people across the world. Based on the request from BRAC, the Embassy of the Kingdom of the Netherlands (EKN) in Dhaka decided to support BRAC to improve the health situation of the rural poor and enhance equitable development through provision of integrated WASH services in the rural areas of Bangladesh.

The programme came at a time when substantial gains in the country were at risk. What had been thought to be 'safe' water coverage had fallen from 97% at the start of the 1990s to 74% in 2004, largely because of the discovery

of widespread arsenic contamination in 59 out of the 64 districts. Although the proportion of the population with access to hygienic latrines had risen from 20% in 1990 to 39% in 2004, the poor and those living in difficult areas were largely left behind. Hygiene practices were erratic.

The BRAC WASH approach

BRAC used its experience from previous large scale programmes to analyse what it understood to be underlying obstacles to progress:

- Lack of community participation in decision-making on WASH services
- Insufficient attention paid to people's behaviours
- Lack of financial means for the poorest
- Lack of institutional recognition of the need to address and transform existing gender inequity and power relations
- Lack of active involvement of women in planning, implementing, and managing water and sanitation facilities
- Insufficient coordination between government institutions, private sector, NGOs, citizens and other sector stakeholders
- Insufficient capacity on the part of service providers

The underlying assumption was that building capacity and empowering community leaders would be more effective than simply building toilets. The BRAC approach focused on:

- Encouraging positive behaviour change and creating demand
- Mobilising communities and leaders to create a WASH movement
- Strengthening the supply chain to secure households access to toilets
- Strong community structures linked to government organisations and local entrepreneurs
- Reducing gaps in equity through financial arrangements
- Monitoring to ensure that what was promised was done

BRAC paid particular attention to reaching the poor and ultra poor and to gender issues, with a specific commitment to empower women to play a major role in WASH decision-making.

This was backed by an intense organisational commitment through community bodies, local staff at community level,

BRAC management teams at upazila and national level and comprehensive quality control. The monitoring system later expanded to include outcome data about what people did as well as what had been provided.

How the programme has functioned

Over the course of the programme BRAC has trained and supported communities to form more than 65,000 gender-balanced village WASH committees (VWCs)¹ with representation from every income group, as the focal point for WASH activities. BRAC trained and supported VWCs to prepare village WASH plans for water, sanitation and hygiene. VWCs identify who is in need of grants or loans to build toilets and advocate for financial support from local government for the ultra poor. Almost all the VWCs established since 2007 are still functioning with the active participation of women and men.

Under the programme, ultra poor households received grants from BRAC covering the cost of a hygienic household latrine, while poor households qualified for loans. Community efforts have been supported by 8,000 BRAC field staff, including local programme assistants (PAs) in a process of community joint learning. The programme raised awareness of WASH issues through household visits and community cluster meetings, held separately for women and for men and for adolescent girls, adolescent boys and children.

The programme builds strong community support networks.

- Innovative steps were devised to reach those with special influence in the community, which included training for more than 14,000 health volunteers (shasthya shebika) and for 18,555 imams who use khutba (sermon) guidebooks to promote cleanliness and hygiene.
- Where piped water schemes or pond sand filters have been introduced, strong water management committees were formed and supported to ensure facilities are well used and maintained.
- The WASH in schools component has built school WASH committees and student brigades.
- More than 5,000 sanitation entrepreneurs were trained and 1,750 were given interest-free loans to establish small businesses to sell latrines and parts.
- The programme was aligned with governmental and other programme initiatives.

Programme phases

The BRAC WASH programme has completed three phases. WASH I (2006-2011) covered 150 upazilas (152 after boundary changes) with a population of 38.8 million people.

¹ In areas under consideration for this report (177 upazilas in phase I and 25 upazilas in phase II) 46,297 VWCs were formed, roughly one for every 200 households.

Despite substantial progress, hard-to-reach upazilas in border and coastal regions were left behind, and there was a need to sustain gains in existing areas of work. Poor hygiene behaviour was still a challenge, while latrines often lost “hygienic” status through lack of maintenance. Use of safe water sources remained an issue.

WASH II (2011-2015) addressed these issues by providing integrated water services, sanitation and hygiene promotion with a focus on sustainability in existing areas, and expanding into 20 new upazilas funded by EKN and 5 funded by the Bill & Melinda Gates Foundation (BMGF). These were often exceptionally challenging areas, such as wetlands, areas with high water tables and coastal areas with saline intrusion.

WASH III, starting in mid-2012, expanded to a further 73 (mainly hard-to-reach) upazilas with the support of the Strategic Partnership Agreement (SPA) supported by DFID and DFAT. In 2014, the WASH in Schools component also expanded as the organisation charity: water provided funding to work in 250 secondary schools in rural Chittagong and Khulna, and the international NGO Splash, started work with BRAC WASH in urban schools to provide safe water, sanitation and hygiene education among the poorest children in Dhaka and Chittagong cities.

Most of this report focuses on the achievements from WASH I and WASH II (i.e. 177 upazilas funded by EKN and BMGF).

Achievements

In all the 250 sub-districts taken together, 39.4 million people gained access to a hygienic latrine during the programme period – thanks to the combined efforts of BRAC, government departments and other significant implementing agencies. In these areas BRAC WASH reached an average of 13.9 million people in communities each year with hygiene education and 2.9 million students a year in 5,550 secondary schools. About 2.3 million people gained access to safe water.

Some of the most significant advances—a hygienic household latrine and facilities for handwashing in or close to the latrine—show the benefits of sustained interventions. Areas where BRAC WASH has worked for a longer period show greater advances than those where the programme has worked for a shorter time.

Hygiene

BRAC WASH has been virtually unique in large scale WASH programmes in putting hygiene education at its core, with repeated interactive sessions in community cluster meetings, and individual counselling during household visits. More than half the budget was spent on hygiene promotion, training

and capacity strengthening. Hygiene education emphasised handwashing at critical points and the protection of water from source to the point of use.

This approach was especially successful in reaching women (six times more women than men attended cluster meetings), and this was reflected amongst adolescents (twice as many girls as boys attended) but not in schools where the formal structure ensured a greater gender equality. The programme always considered that success required action by both women and men. In 2014, BRAC WASH sought out men by introducing hygiene sessions at popular tea stalls. By April 2015, 70,000 tea stall sessions had been held; although there is no data yet on how far this has succeeded in persuading men to adopt good hygiene behaviour.

Seven in ten households (69%) in WASH I areas and just over half (53%) of households in WASH II areas had soap and water available for handwashing in or near the latrine during outcome monitoring visits.

Sanitation

In the 177 EKN and BMGF supported upazilas, BRAC WASH has supported 32.8 million people to achieve hygienic sanitation² through grants and loans but mainly by creating awareness and promoting demand. More than 11 million made their toilets hygienic by installing or repairing a water seal, while 10.6 million installed a new latrine at their own cost. A further 5.4 million people in poor and ultra poor families received a latrine through direct support (loans and grants, respectively) from BRAC WASH. The other 5.4 million were supported by government schemes, other NGOs or other BRAC programmes.

By 2015, 78% of households in the first 152 upazilas and 57% of those in the phase II 25 upazilas had a hygienic latrine.

It is notable that ultra poor families did almost as well as the non poor and in some upazilas better than the poor. This reflects the success of the grant scheme that covered the entire cost of a high quality double-pit latrine for ultra poor families, but also the fact that the loans available to poor families cover only half the cost of the latrine materials.

One of the most significant and positive findings is that all members of the household (98% and 99% in the 152 and 25 upazilas, respectively) use the family latrine, including men and adolescent boys.

² According to Bangladesh's National Sanitation Strategy 2005, a hygienic latrine is one which confines faeces, has an intact water-seal or other tight pit closure, and is shared by no more than two households. BRAC WASH adheres to this national definition. Similarly, the Joint Monitoring Programme (JMP) counts "improved" latrines as ones that hygienically separate human excreta from human contact. However, JMP counts only latrines used by single households, not shared ones, as improved.

Success in a large-scale sanitation programme brings a new challenge – what to do when the pits fill up. This has become a priority, and BRAC WASH has invested in research on solutions, with a view to turning the problem of faecal sludge into a revenue earning asset as organic fertiliser. Currently, more than 85% of households have their pits emptied. As of December 2014, 18,000 households have reused digested faecal sludge as organic fertiliser on their fields.

The ultra poor households who received grants from BRAC WASH have an advantage, since an average Bangladesh household with 4 or 5 family members takes one or two years to fill a pit and the pits in a double-pit system can be used in rotation as the first pit is sealed and the material decomposes safely. While this contributes to environmental sustainability, the costs of double pits are approximately 25% higher than single pits which will cause problems for the ultra-poor and the poor when there is no external funding.

Water

Between January 2007 and April 2015, in the 172 upazilas supported by EKN, a total of 21.2 million people gained access for the first time to improved sources of water. Of these, 1.6 million received direct support from BRAC WASH. The water interventions of the programme were on a smaller scale compared to the sanitation interventions. This is because the programme chose to take a more focused approach, specially targeting areas which were prone to high levels of arsenic and salinity.

In difficult areas BRAC installed the most appropriate technology to reach households:

- Piped water systems where tube wells were not suitable to the hydrogeological context.
- Pond sand filters or solar desalination in the coastal belt.
- Two-or three-headed deep tube wells, where boring wells is difficult.

Only the water points directly provided by BRAC WASH were tested for water quality at the point of installation and confirmed as a safe water source. Regular testing of all water sources is a priority that BRAC will want to pursue in future WASH programmes.

WASH in Schools

The BRAC WASH schools component focused on services for adolescent girls in secondary schools, as providing separate toilets for girls and menstrual hygiene education were seen as critical to keeping girls in school.

The programme co-financed modern toilets for girls with facilities for menstrual waste disposal. Teachers were trained

to give hygiene education, and student brigades were set up and trained, comprising some of the brightest and most active students.

Over the course of the programme BRAC WASH trained more than 50,000 teachers, 44,000 student brigade members and 29,000 school management committee members. In 2015, student brigades were active in 86% of schools in the first phase and 81% in second phase schools supported by EKN.

Absenteeism amongst girls fell from 44% to 33% between 2006 and 2011, and research is planned to see how far the BRAC WASH programme contributed to this.

A school WASH committee, comprising teachers and parents was established in each school to coordinate the work. About 60% of schools established a fund to maintain WASH facilities. Research indicates that BRAC investment attracts a 2.5 times greater investment from the school and parents.

Much of the BRAC WASH school programme—separate latrines and student brigades—is now recommended nationally by the Bangladesh government. However, schools fall far short of achieving the national standard of one latrine per 50 students. Boys too need toilets, and safe drinking water is also essential in schools – needs which are being addressed through the charity: water and Splash projects.

Learning and adapting

A strong internal learning mechanism was established and BRAC WASH continually reviewed its performance and adapted approaches as new data and issues arose. Some of the changes include:

- Improved monitoring and quality control – BRAC took pains to ensure that everything that was supposed to be delivered was in place.
- Qualitative Information System (QIS) – a system to monitor people's behaviour including handwashing, use of toilets, women's participation in VWCs, etc.
- Improved communication training to focus on a few key issues through discussion rather than instruction – an approach that became known as “selling not telling”.
- Messages targeted to particular audiences—for example appealing to men as good fathers and providers to create handwashing facilities.
- Implementing technological innovations such as a low cost plastic toilet pan (SaTo pan) that requires less water for flushing.

Sustainability

Sustaining the gains made in Bangladesh has been a major concern. As the programme ends in a sub-district some activities will be integrated into other BRAC programmes (microfinance, health, education). More than half of the 8,000 BRAC WASH staff come from the community. Some take their experience into other BRAC programmes, while others contribute as committed community members.

Community structures and school committees were designed from the outset to be resilient to continue when the programme ends. Cost sharing was an imperative so that initiatives did not collapse as the programme ended.

Social equity

An independent verification study commissioned by BMGF showed a huge achievement in addressing inequality: 81% of the people reached by the programme are classified as ultra poor. In programme areas the ultra poor have the same access to toilets as better-off families.

Lessons learned and Innovations

BRAC WASH has made a major contribution to better hygiene, sanitation and water provision in rural Bangladesh powered primarily by people rather than by infrastructure. BRAC focuses on programmes rather than projects and the programme benefited from donors who fully supported putting behaviour change at the heart of the programme. With that principle in mind the following lessons proved worthwhile to be replicated by government partners and implementing agencies in any WASH programme:

- Community mobilisation linked to a stronger supply chain and coordinated with local government institutions.
- A gender-inclusive approach; based on an understanding that for WASH to succeed, women must play a greater role in decision-making, while men must understand WASH as a priority.
- WASH in schools – vital to develop a generation that regards clean water and hygienic sanitation as a basic human right.
- The provision of loans for the poor and grants for the ultra poor.

Lessons from this experience also include:

- Progress at scale requires long-term strategies with periodic adjustments.
- A solid management and monitoring system is needed to ensure that actions are followed-up and subsidies reach the right people. This also involves tracking outcomes on behaviour change and the full sustainability costs of services. Without evidence it is not possible to learn from results, and to improve and adapt where needed.
- There is a benefit in working with a knowledge partner, such as IRC, that can suggest innovations and support the programme to reflect on challenges and solutions.

Innovative tools techniques which have been developed (amongst others) include a rapid assessment methodology for assessing supply and demand, a tool and methodology for conducting life-cycle costing, and reuse of faecal sludge.

Challenges

BRAC WASH works with low-cost technologies to ensure they are accessible to as many people as possible. However, there remains a need to develop systems that work at low cost for drinking water supply and sanitation in water challenged areas.

Despite positive research, there are logistical and technical challenges to managing faecal sludge at a large scale; yet a certain scale and volume is required to turn this challenge into a money making opportunity.

A supply and demand study as part of the programme warned that many sanitation entrepreneurs would go out of business when the high level of loans and grants is scaled back. Entrepreneurs need to diversify to a wider range of products that encourage families to upgrade.

Recommendations for future action

BRAC is ensuring continuity by integrating elements of the programme into its health, education and other programmes. However, this is not sufficient to meet the SDG target for water and sanitation for all people to have safe drinking water and sanitation by 2030. Future work should focus on reaching the unreached, including expanding the reach to further hard-to-reach areas and a greater focus on water quality and quantity.

- **Services for urban areas:** Raising coverage will require programmes to strengthen the capacity of communities in peri-urban and urban areas. Currently about 30 million people living in small towns or pourashavas, are not reached by urban WASH funding, and lack waste disposal, safe sanitation and water services.
- **Safe solutions for faecal sludge management:** BRAC WASH recommends promoting double-pit latrines of sufficient depth to eliminate the removal of dangerous sludge, and focusing on practical and safe treatment of faecal sludge and marketing of products such as fertiliser.
- **Finance models:** Future work should focus on strengthening existing loans and subsidy models and developing new models to reach the remaining households and for maintaining and upgrading facilities. Costly infrastructure, such as piped water, will require a blend of public and private investments.
- **Greater focus on menstrual hygiene management:** Despite great progress made in the improvement of menstrual hygiene management, much work remains to be done. Interventions not only need to be strengthened, but their actual impact on the lives of women and girls need to be studied further.



BRAC
ব্রিটিশ বাংলাদেশ পরিষ্কার কর্মসূচী
স্বাস্থ্যমুখীকরণ কর্মসূচীর অধীনে।
কমিউনিটি প্রোগ্রামের অধীনে।
কমিউনিটি প্রোগ্রামের অধীনে।

Piped water supply system in Paikgacha upazila, Khulna

PROGRAMME DESIGN

WASH context in Bangladesh prior to BRAC WASH programme (pre 2006)

In the 1970s, shallow tube wells were installed across Bangladesh to avoid use of contaminated surface water. In the 1980s, in addition to government programmes, the private sector and NGOs were encouraged to install more shallow wells in rural Bangladesh for drinking water and other domestic purposes. Bangladesh managed to provide 97% of its population with access to safe and free drinking water through these wells. This resulted in a drastic reduction in the deaths due to diarrhoeal diseases.

However, the discovery of widespread arsenic contamination in shallow groundwater turned this success into a disaster – 59 out of the 64 districts were reported to have groundwater sources with an arsenic concentration beyond the GOB permissible level of 50 parts per billion or micrograms per litre ($\mu\text{g/L}$)³. It was estimated that 25-30 million people were affected. Moreover, Bangladesh faces several other water challenges such as salinity, high iron and manganese concentrations, and falling ground water tables. The 2006 WHO/UNICEF Joint Monitoring Programme report⁴ found that between 1990 and 2004, the percentage of the population of Bangladesh with access to improved water sources only increased from 72% to 74% - this in spite of a concerted effort to provide people with safe water. During that same period, improved sanitation coverage increased from 20% to 39%. However, a major effort was still required to achieve the targets set for sanitation in the Millennium Development Goals⁵ and the more ambitious national goals that sought to achieve 100% sanitation by 2010.

Bangladesh continued to face multiple challenges that made it difficult to ensure basic services to its citizens. In the water, sanitation and hygiene sector, these challenges were: reaching the poorest people (equity), inconsistent hygiene practices, water quality and quantity, improving sanitation technologies for the poor who live in high water table areas. The institutional setting was complex for addressing these issues. Capacity and management skills needed to be improved, particularly at the intermediate level that links to the union⁶ and community. The government had limited success in targeting the poor and the ultra poor—those with little

or no disposable income. It also proved difficult to ensure sustainability of the provided water and sanitation services. However, the government recognised some of the inherent programme weaknesses and invited NGOs to support its efforts to attain the MDG targets on sanitation and water.

Phases of the programme

In May 2006, BRAC with support from the Government of the Kingdom of the Netherlands (see Table 1), launched the WASH programme (2006-2010) in 152 upazilas/sub-districts⁷ (out of a total of 489) of Bangladesh having a population of about 38.8 million. This **first phase of the programme (WASH I)** aimed to improve the health situation of the rural poor and enhance equitable development through provision of integrated WASH services in the rural areas of Bangladesh; inducing hygienic behaviours to break the contamination cycle of unhygienic latrines, contaminated water, and unsafe hygiene practices; and scaling-up of WASH services.

Partly due to the BRAC WASH programme, Bangladesh has made substantial progress in the sanitation, hygiene and water sector. According to the WHO/UNICEF Joint Monitoring Programme, by 2010 the national improved latrine coverage stood at 56%, with 25% shared latrines, while the proportion of the population with access to improved drinking water was 81%. Nonetheless, challenges remained. While coverage was high, the use of facilities and behavioural change had not been uniform: maintenance and cleanliness of facilities were great challenges. Another challenge was that progress had been uneven. The populations in hard-to-reach and underserved areas, usually at the border and coastal areas of the country, often did not benefit from WASH programming efforts. And arsenic intrusion in the water supply and the consistent use of safe water sources by all people remained another critical issue.

Thus, the BRAC WASH programme was extended to a **second phase (WASH II - 2011-2015)** to address these challenges and to address sustainability, which did not receive enough focus in the first phase. The second phase of the programme sought to contribute to the attainment of the Millennium Development Goals (MDGs) by providing integrated water services, sanitation and hygiene promotion

³ The Bangladesh standard is 50 $\mu\text{g/L}$, and the WHO standard is 10 $\mu\text{g/L}$. (<http://goo.gl/AQIVbj>)

⁴ WHO and UNICEF. "Meeting the MDG drinking water and sanitation target: the urban and rural challenge of the decade." (2006). (<http://goo.gl/YqboJ9>)

⁵ MDG Target 7C: Halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation.

⁶ The administrative structure of Bangladesh is as follows: division → district (zila) → sub-district (upazila) → union → ward/village. In addition there are urban city corporations, along with municipal corporations (pourashavas, i.e. small towns).

⁷ It was originally 150 upazilas, but in 2013 two upazilas were each split in half, thus creating an additional two new upazilas.

PROGRAMME COVERAGE

BRAC WASH Programme coverage

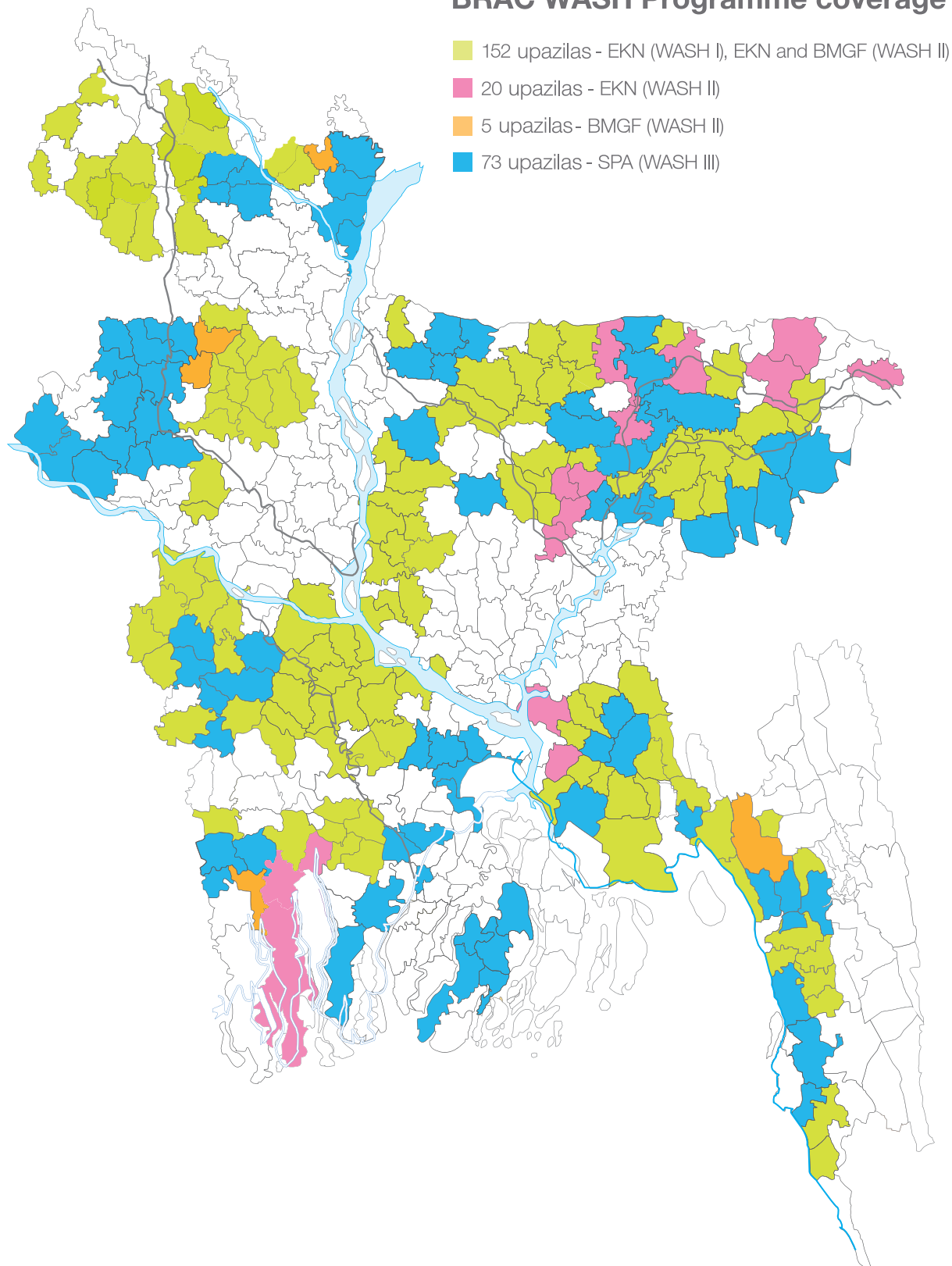


Table 1: Overview of the phases and donor contribution to the programme

Project	Area	Duration	Donor	Amount
First phase (WASH I)	152 upazilas	2006-2011	EKN	EUR 52.96 million (approx. USD 66 million)
Second phase (WASH II)	152 (existing) + 20 (new) upazilas	2011-2015	EKN	EUR 27.3 million (approx. USD 38 million)
	152 (existing) + 5 (new) upazilas	2011-2014	BMGF	USD 11 million
Third phase (WASH III)	73 (new) upazilas	2012-2015	SPA	USD 37.4 million
WASH in rural secondary schools	250 rural schools	2014-2015	charity: water	USD 1.2 million
WASH in urban schools	71 urban schools	2014-2015	Splash	USD 259,803

expanding to hard-to-reach areas and/or underserved populations in collaboration with government and other stakeholders while continuing to reinforce gains made in the first phase. In 2011, BRAC WASH II began operations in 20 new upazilas funded by EKN and 5 new upazilas funded by the Bill & Melinda Gates Foundation (BMGF), with a major focus on hard-to-reach and underserved areas (while continuing in the original 152 upazilas). These included: wetlands, areas with high water tables, coastal areas with saline intrusion in the water supply, hilly areas and areas suffering from civil strife. These were exceptionally challenging and expensive areas to work in.

In mid-2012, the **third phase of the programme (WASH III)** began when BRAC WASH expanded to a further 73 upazilas (also mostly hard-to-reach and underserved areas) with the support of the BRAC's Strategic Partnership Agreement (SPA) with UK's Department for International Development (DFID) and Australia's Department of Foreign Affairs and Trade (DFAT). In 2014, WASH in schools (an existing component of the EKN and SPA-funded projects), received further funding. The organisation charity: water started funding work in 250 secondary schools in rural areas of Chittagong and Khulna to provide separate boys' and girls' latrines and safe drinking water supply for the students. Also in 2014, Splash, an international NGO based in Seattle, USA, started working with BRAC WASH in urban schools to provide safe water, sanitation and hygiene education among the poorest children in Dhaka and Chittagong cities.

Programme approach

BRAC used its experience from previous large scale programmes to analyse what it understood to be underlying obstacles to progress:

- Lack of community participation in decision-making on WASH services
- Insufficient attention paid to people's behaviours
- Lack of financial means for the poorest

- Lack of institutional recognition of the need to address and transform existing gender inequity and power relations
- Lack of active involvement of women in planning, implementing, and managing water and sanitation facilities
- Insufficient coordination between government institutions, private sector, NGOs, citizens and other sector stakeholders
- Insufficient capacity on the part of service providers

The underlying assumption was that building capacity and empowering community leaders would be more effective than simply building toilets. Thus, BRAC WASH takes a community-based, integrated approach to addressing water, sanitation and hygiene issues.

BRAC WASH deliberately focused on the poor and in monitoring its achievements in the whole community, data was segregated by three wealth categories (Table 2). Criteria used by BRAC programmes to define wealth categories were adapted, based on the national criteria.⁸

A household is considered ultra poor if it meets at least two of the last three conditions, plus one of the other conditions. This is used to identify the poorest households, for allocating grants and also for collecting monitoring data on the three different categories; ultra poor, poor and non poor households.

The long-term objective for BRAC WASH is to have a strong, empowered community able to effectively get access to and use WASH services and to ensure that also the poorest are included. The conditions that were seen as required to make this happen are:

- Capacity of BRAC WASH as well as sanitation entrepreneurs in providing WASH services

⁸ Government of People's Republic of Bangladesh. "Pro Poor Strategy for Water and Sanitation Sector in Bangladesh." (2005). (<http://goo.gl/nXkckz>)

Table 2: Wealth categories

Ultra poor	Poor	Non poor
<ul style="list-style-type: none"> • Landless households • Homeless households • Day-labour households • Less than 10 decimal⁹ of agricultural land • No fixed source of income • HH headed by a person with disability or 65+ years old female 	<ul style="list-style-type: none"> • Up to 100 decimal of land (agricultural and homestead) • Sell manual labour for living 	<ul style="list-style-type: none"> • Household that do not fall in any of the other category

- Organised user groups/community groups articulating demand, claim rights and aware of their obligations
- Government capacity to respond and link up with the programme
- Monitoring of fulfilment of WASH commitments
- Use knowledge on WASH for sharing and influencing other stakeholders

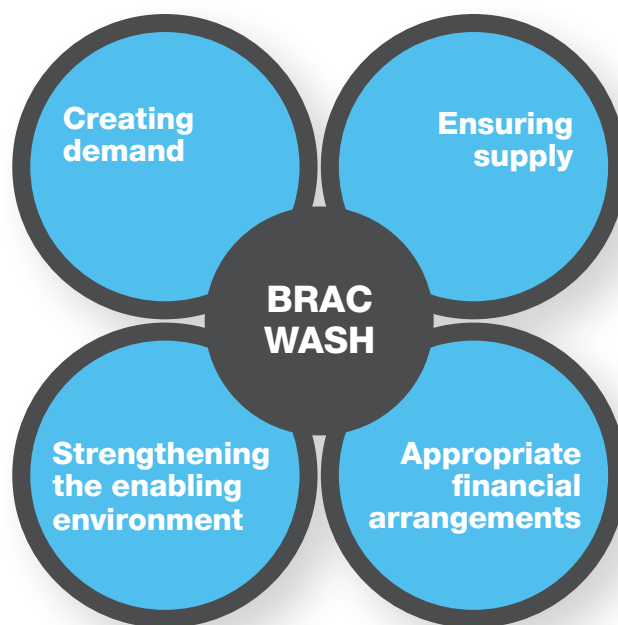
In coordination with the GOB, BRAC WASH carried out a number of interventions to fulfil each of these conditions.

These interventions were based on the experience of BRAC in reaching the poorest and in previous programmes such as the introduction of oral rehydration solution throughout Bangladesh and setting up an arsenic mitigation programme. These programmes used a similar approach which was adapted for BRAC WASH. Key elements were:

- Mobilization of community and building leadership of men and women from the local area/community; a huge emphasis was placed on creating a WASH movement in Bangladesh, with a strong supply chain: making sure that people can buy a toilet and that sanitation producers are trained and able to supply quality and affordable products.
- Encouraging positive behaviour change as a core element of the approach; one of the big challenges identified in the first phase of BRAC WASH (2016-2011) was related to creating demand, changing behaviour and sustaining it.
- Strong community structures and linkages with government organisations and local entrepreneurs were created.
- Reducing gaps in equity; appropriate financial arrangements were put in place, both for the demand and supply side.
- Addressing existing gender inequity and power relations; encouraging active involvement of women in decision-making processes.

- Monitoring of implementation, processes and finance: to ensure that what is planned is actually done and with quality.

Building blocks of the BRAC WASH service delivery approach



Underlying assumptions and corresponding interventions

Output assumptions and interventions

Building on previous experience BRAC WASH knew that building toilets would not be enough to ensure use of toilets. They assumed that capacity building and empowerment of women, men, and children leads to promoting and practicing safe sanitation and hygiene behaviour. The programme expected that when people are trained they will be in

⁹ 1 decimal = 40.46 m²

the position to use their new knowledge and skills in the community; and that information collected will be used for and by the people in the areas serviced by BRAC.

The interventions to meet these expectations included setting up or strengthening village WASH committees (VWCs); conducting a household census; developing and implementing hygiene promotion; and providing loans and subsidies for constructing toilets.

In every village the programme operated in, a village WASH committee was formed, consisting of 6 women and 5 men from the community, along with 2 advisors. To strengthen the capacity of VWCs, one man and one woman from this committee were given a 2-day leadership training at a BRAC Learning Centre. Each VWC represents an average of 200 households (approx. 4.8 members per HH) and helps stimulate bottom-up participation and planning. The VWC members represented the entire village, including the poorest and members from various socioeconomic groups in the community. Apart from the eleven members, two current or former members of the local government, or local community leaders, were selected as advisors. By following a community participatory process, BRAC WASH has formed more than 65,000 VWCs (46,297 in WASH I & II upazilas) throughout the programme areas. After formal orientation, each VWC undertook a needs assessment through participatory exercises and social mapping. The VWC used the information gained through this process to develop and implement a village WASH plan to improve the overall water, sanitation and hygiene situation. They placed a strong emphasis upon women's participation in the decision-making process. Thus, the VWCs were considered as the nucleus of all WASH activities in the locality and acted as a catalyst for the community by involving all the different stakeholders.

Outcome assumptions and interventions

BRAC WASH assumes that active VWCs are a means to represent and ultimately empower women and men from ultra poor, poor and non poor households which lead to inclusive WASH and increased sanitation coverage, use and sustainable hygiene practices. Furthermore, the programme assumed that students act as agents of change in communities and schools. In addition it was expected that capacitated WASH actors – government and private sector and NGOs – were able to implement plans and address WASH challenges.

The interventions to address these assumptions included: empowering members of the community (especially women) to be able to plan, speak up and act; strengthen and expand the network within BRAC and with local government institutions to make them more committed to WASH issues and allocate funds to WASH.

Each VWC conducted bimonthly meetings to assess the existing water and sanitation situation of the entire village and identify issues that needed urgent action. Committees mapped out water points and latrines, monitored the availability and maintenance of latrines and water sources, coupled with the identification of repairs and new installations. The committee members were responsible for identifying ultra poor households in their communities that need BRAC's assistance and qualified for grants from GOB's Annual Development Programme (ADP). They were also responsible for selecting poor households which qualify for BRAC WASH loan support to install hygienic latrines. Links were created between the VWC and local government institutions and local sanitation entrepreneurs. Thus, the community itself takes charge of WASH issues in their area. Through these committees, women's empowerment was also addressed in the rural areas by recognising women members through their voluntary contribution for the society, since traditionally it was mainly the men who took part in decision-making.

The programme also raised awareness on WASH issues through household visits and community cluster meetings. Hygiene education sessions were conducted in all educational institutions in the programme areas, and moreover in secondary schools¹⁰ separate latrines for girls, with menstrual hygiene management (MHM) facilities, were provided on a cost-sharing basis (see WASH in Schools section below for more details).

Student brigades and school WASH committees were also formed¹¹ in these schools, to oversee the operation and maintenance of WASH facilities. In each school, 2 teachers and 8 student brigade members (equal numbers of boys and girls in co-ed schools) are provided with a 3-day WASH training. One of the challenges the programme has faced is that many schools have no female teachers. Even so, BRAC WASH tried to train one male and one female teacher per school wherever possible. Additionally, interest-free loans and technical training are provided to rural sanitation entrepreneurs to ensure supply and quality of latrine materials.

BRAC WASH places special emphasis on reducing gaps in equity – and therefore loans are provided to the poor (of which 99% have been repaid) and grants to the ultra poor to build latrines. The qualifying criteria for the ultra poor have been adapted from the government's Pro Poor Strategy for Water and Sanitation. Moreover, the government's Annual Development Programme had provisions for providing grants to the ultra poor, so this approach already existed both in policy and in practice. However, this was not sufficient to

¹⁰ Before starting implementation of the WASH programme, BRAC found that there was a high demand for separate latrines and MHM facilities in secondary schools. Since most menstruating students are in secondary schools and since the government had a provision in primary schools and UNICEF had already provided support for latrine facilities, BRAC targeted secondary schools for these interventions.

¹¹ This is a mandate for schools that BRAC WASH supports.

reach all the ultra poor, thus BRAC's grants helped address this gap. BRAC's other programmes also take similar approaches (e.g. Targeting the Ultra Poor programme). However, those programmes' aim is to specifically target certain population groups whereas BRAC WASH takes this approach to be inclusive of the entire community it provides services to, since the nature of WASH services is such that they are required across all socioeconomic strata. Providing grants and loans alongside hygiene promotion was necessary, since otherwise it is likely that only the non poor would benefit. It is necessary to create demand while also strengthening access for all by offering different products and services.

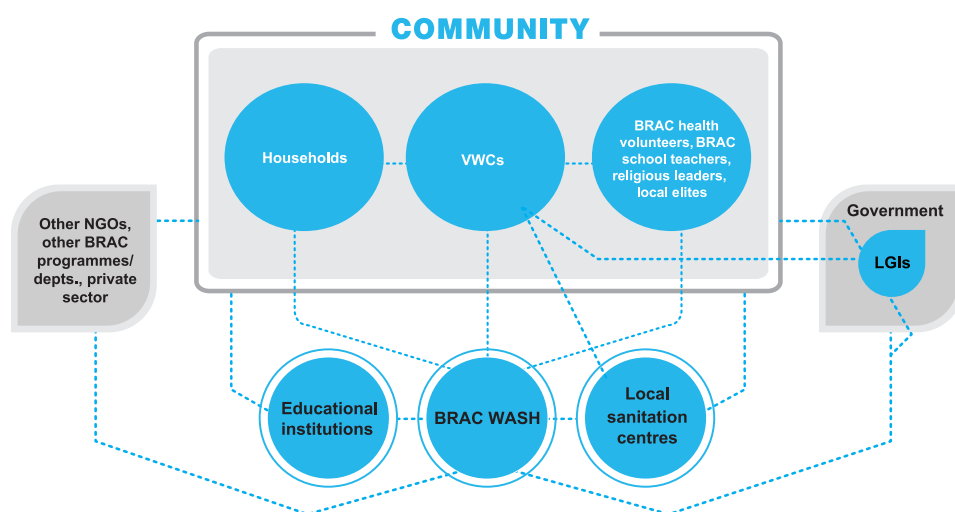
Focus was also placed on gender-specific targeting – paying attention to the needs of women, men, adolescent girls and boys (12-18 years old), and children (9-11 years old) – to reach all the different groups in the community with WASH messages through cluster meetings. Elderly and persons with disabilities were encouraged to come to the cluster meetings, or they were reached through household visits. Women were encouraged to take part in the decision-making processes with regard to sanitation and water services (which has been monitored, see Fig. 17b), and men were encouraged to share in duties that are traditionally done by women (e.g. collecting water, cleaning latrines, etc). However, the latter has not been measured by the programme but is something that should be evaluated in the future.

There is also an extensive network within BRAC, with coordination and collaboration between different BRAC programmes (e.g. WASH, health, microfinance, education, etc.). A one-day orientation on WASH was provided to all BRAC field staff (including regular staff, project staff, BRAC school teachers, and health volunteers) during the first phase. A WASH component is included in the refresher trainings for the various BRAC field staff, as well as in the orientation for new staff at the head office. The WASH programme is also represented at the internal monthly coordination meetings between all BRAC programmes, held at the field level.

BRAC WASH also maintains collaboration and linkage with the government, including being a member of the government's WATSAN committees from national to union level. BRAC WASH is a member of several alliances that are active within the WASH sector such as the National Sanitation Task Force, Local Consultative Group (LCG), Water Supply and Sanitation Collaborative Council(WSSCC) and Freshwater Action Network (FANSA BD), and participates in various coordination meetings and forums with them.

Based on the programme approach, and upon request from EKN evaluators, the logical framework input and output items were translated into a result chain. This will allow future evaluators to better assess the sustainability of the programme a few years from now. The result chain was developed in 2014¹² through a workshop between BRAC WASH and IRC (see Annex A).

Linkages between BRAC WASH, the community and other stakeholders



¹² The result chain reflects the process and steps taken in the programme. Initially the request was to develop a theory of change; however, since it was done at the end of the programme it seemed a bit artificial to come up with hypothesis and explanations in hindsight.

MAIN ACHIEVEMENTS/ PROGRESS

With the start of the BRAC WASH programme in 2006 a transformation of social norms and traditional practices started. At that time sanitation coverage was only 36% in Bangladesh and open defecation was 11%¹³. As of 2015, the sanitation coverage stands at 61% and open defecation rate has decreased to 1%¹⁴. This was not only part of BRAC WASH; the government and other implementing¹⁵ agencies played an important role. BRAC WASH works with the whole community in 250 upazilas with a special emphasis on poor and ultra poor households that do not have access to safe water supply and hygienic latrines.

The strong emphasis on social mobilisation, institution building, hygiene promotion and gender equity shows good results in improved access to sanitation and safe water.

BRAC WASH - scale at a glance

Table 3 provides an overview of the programme, from 2006 up to June 2015, covering all the donor-funded projects (EKN, BMGF, SPA, charity: water and Splash).

The overall results in Figure 1 below show progress on key indicators, including WASH III areas. It clearly shows that mobilising people and achieving sustained safe WASH behaviour takes time. The figure shows data collected through the BRAC WASH programme's Qualitative Information System (QIS) for 152 upazilas and 25 upazilas in October 2014, and for 73 upazilas in February 2014. See Annex B for more details on QIS.

As can be seen in Figure 1, most of the indicators show better results in areas where the programme has been working longer. Better results are achieved with long-term interventions, this seems especially true for ensuring a hygienic latrine and provisions for hand washing after defecation, indicating that behaviour change takes time. However, there is not much difference between WASH I, II & III areas with regard to using the hygienic latrine and managing the faecal sludge. This is indicative of the sustainability of the intervention – once the households obtain a hygienic latrine, most households use and maintain it properly. The data on VWCs shows that most of these

Table 3: Overview of the entire BRAC WASH programme

Duration	May 2006 – June 2015
Working area	Total 250 sub-districts
Total population in working area	66.4 million
Number of people who received hygiene education from BRAC WASH	13.9 million per year in communities 2.9 million per year in schools
Number of people who gained access to hygienic latrines	39.4 million
Number of people who gained access to safe water (direct support only)	2.3 million
Established village WASH committees	65,566
Schools provided with WASH support	5,550

committees were up and running at the time of data collection. Women's participation is slightly lower where the amount of intervention time is lower. Even so, women's participation in VWCs is still very high in WASH III areas considering that interventions began just a year and a half before the time of data collection.

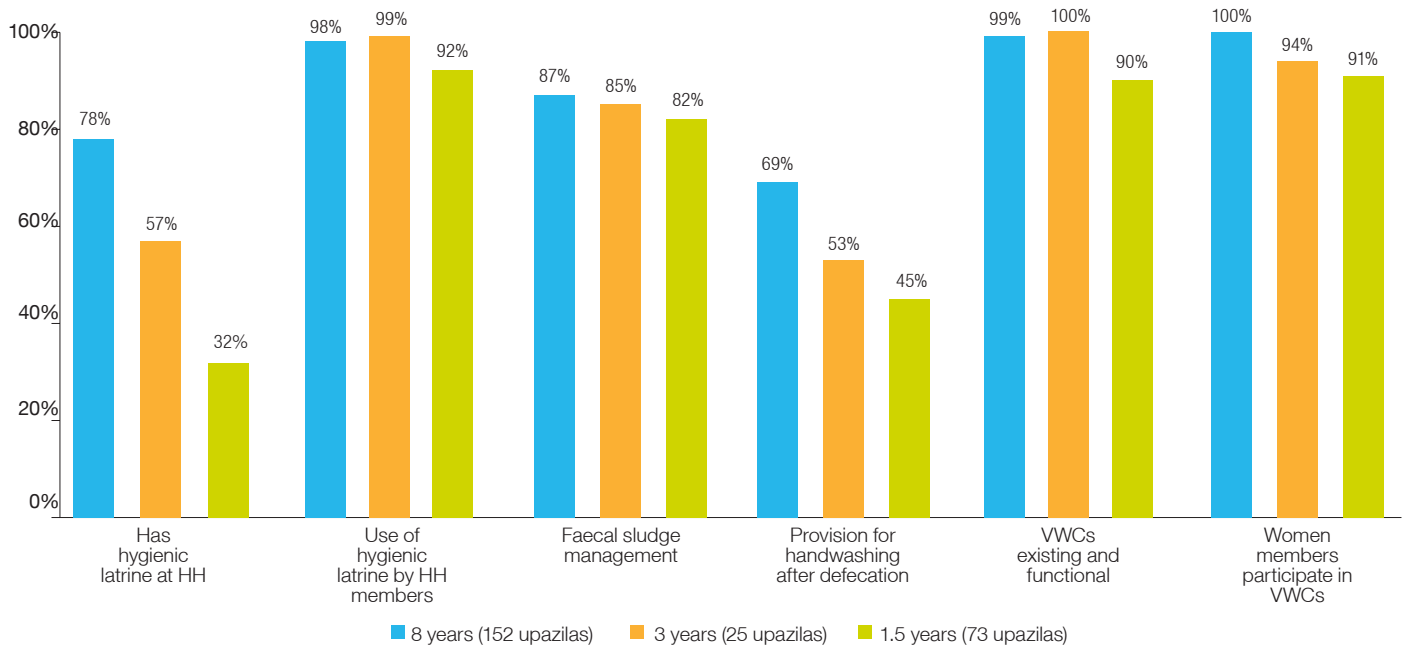
The data presented in this report are collected through the programme's Management Information System (MIS) and Qualitative Information System (QIS). MIS data is collected monthly and measures programme inputs and outputs. QIS was introduced in 2013, and measures outcomes. For more information on monitoring please see Annex B.

¹³ WHO and UNICEF. "Progress on Drinking Water and Sanitation: Special Focus on Sanitation." (2008). (<http://goo.gl/K3V4Ya>)

¹⁴ WHO and UNICEF. "Progress on sanitation and drinking water – 2015 update and MDG assessment." (2015). (<http://goo.gl/3jY17E>)

¹⁵ For example: DPHE, UNICEF, SHEWA-B, WaterAid, NGO Forum, Plan International, DSK, CARE, World Bank, etc.

Fig. 1: Progress on key indicators & length of intervention before monitoring



Please note: Although the approach is similar in all three phases of the programme, the achievements and activities from this point forward in the report will focus in particular on phase I and II (152 + 20 + 5 upazilas). The data presented in this report shows the achievements of the programme between **January 2007¹⁶ to April 2015**, in the EKN and BMGF supported areas (unless otherwise stated).

Hygiene

Installation of water supply systems and sanitation facilities are not enough to improve people's health – good hygiene practices are essential to serve that purpose. BRAC WASH adopted a number of practical approaches to promote hygiene messages that are based on socioeconomic and hydrogeological conditions, culture and existing practices.

A baseline study by the BRAC Research Evaluation Division (RED) carried out between November 2006 and June 2007 found low levels of hygiene awareness and poor personal hygiene and sanitation practices across all economic groups in rural areas where BRAC WASH was launched¹⁷.

Thus, improving hygiene practices has been the backbone of the WASH programme and people's participation and education on these issues have been central from its inception. Since the second phase of the programme, there has been an emphasis on convincing people and getting into dialogue: the "selling not telling" approach.

From the beginning, it was understood that embedding good hygiene practices within the community is a long-term process to bring about change that cannot be achieved with short-term interventions. About 55% of the total WASH

budget is spent on hygiene promotion, orientation, training and capacity strengthening. This goes far beyond one-off triggering of households to create demand for building a toilet; using it in a hygienic way and maintaining it, the importance of washing hands and ensuring that water is safe for drinking. Around 8,000 BRAC WASH field staff played a crucial role here – they were essential in achieving the huge gains that the programme achieved.

There are separate cluster meetings held for men, women, adolescent girls, adolescent boys, and for children. Figure 2 shows the total number of cluster meetings, school sessions and tea stall meetings held from 2007-2015. In addition to those, over 4,000 popular theatre sessions and 67 folk song sessions also took place¹⁸. Figure 3 shows that in the courtyard cluster meetings, in the courtyard cluster meetings much more women than men participated in the adult and adolescent sessions. More male and female participants took part in the children's cluster meetings and school sessions, with a slightly higher number of women participating.

The numbers of male and female participants were closer for children's cluster meetings and school sessions; however, female participants were still slightly higher.

¹⁶ Even though the programme started in May 2006, mostly set-up and inception period activities took place during that year – the main implementation work began in January 2007.

¹⁷ BRAC Research and Evaluation Division. "Achievements of BRAC Water, Sanitation and Hygiene Programme Towards Millennium Development Goals and Beyond." (2013). (<http://goo.gl/nGJ4OR>)

¹⁸ Popular theatre and folk song sessions were conducted by BRAC's Community Empowerment Programme, with scripts prepared from information/content given by BRAC WASH.

Fig. 2: Hygiene promotion sessions between 2007-2015

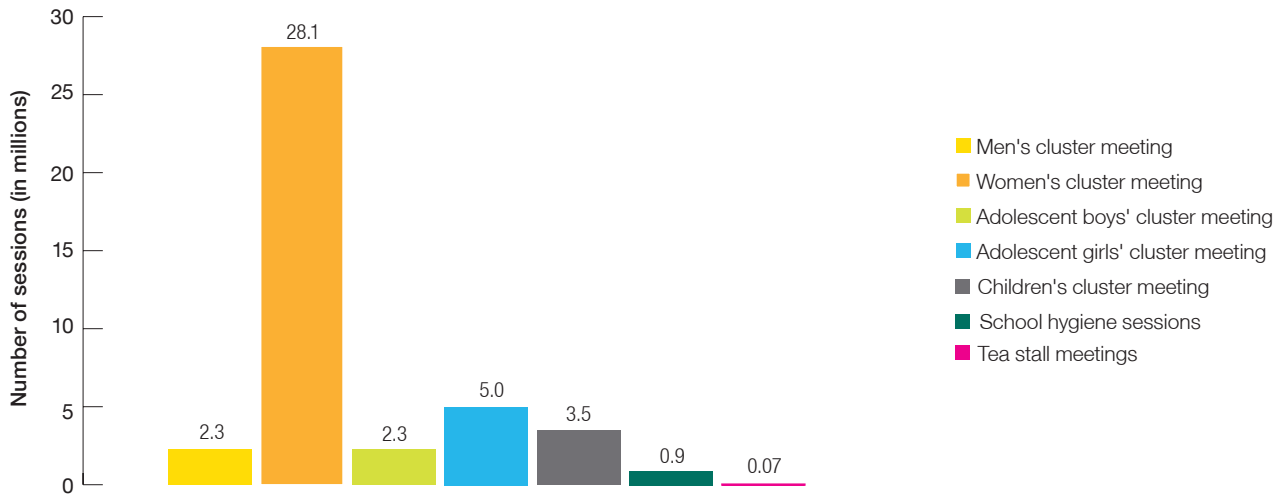


Fig. 3: Hygiene promotion - Avg. no. of participants per year (by group)

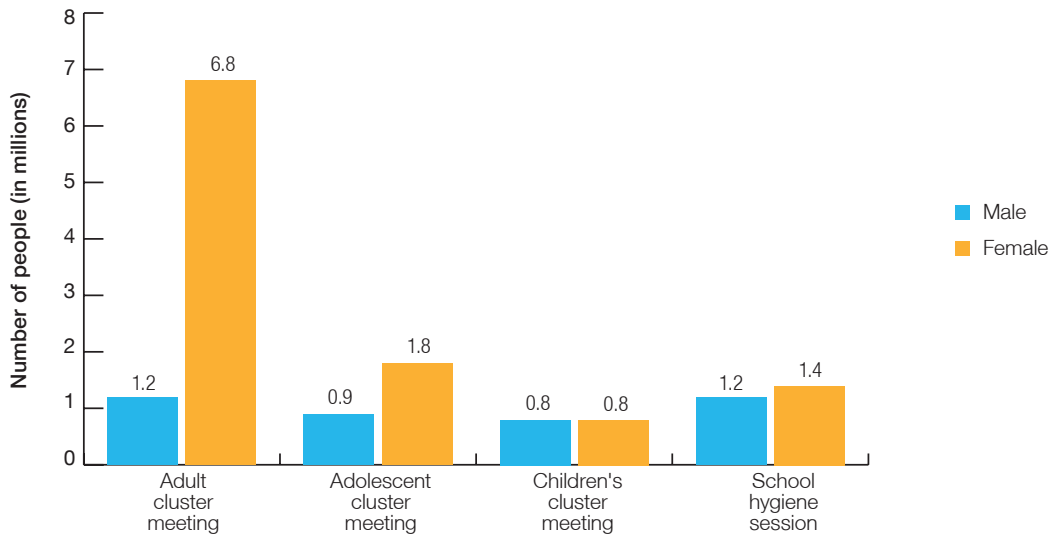
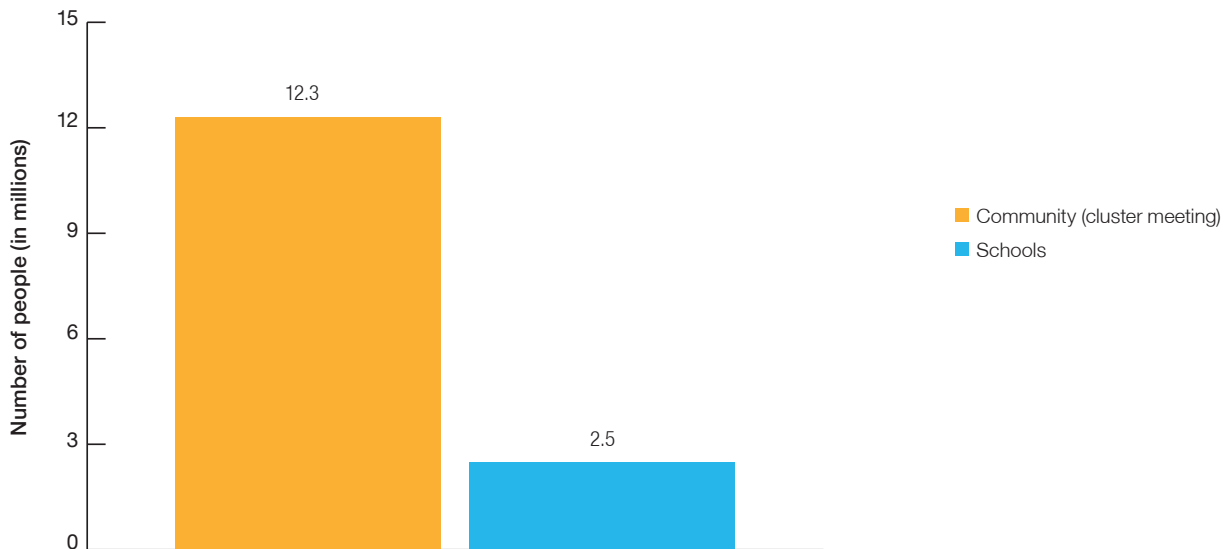


Fig. 4: Hygiene promotion - Average no. of participants per year (by place)



Hygiene education has been delivered to an estimated average of 12.3 million people per year at the community level and 2.5 million students per year through schools¹⁹ (Figure 4), showing how intensive the hygiene promotion aspect of the programme has been²⁰. More information on the school component can be found in the 'WASH in Schools' section.

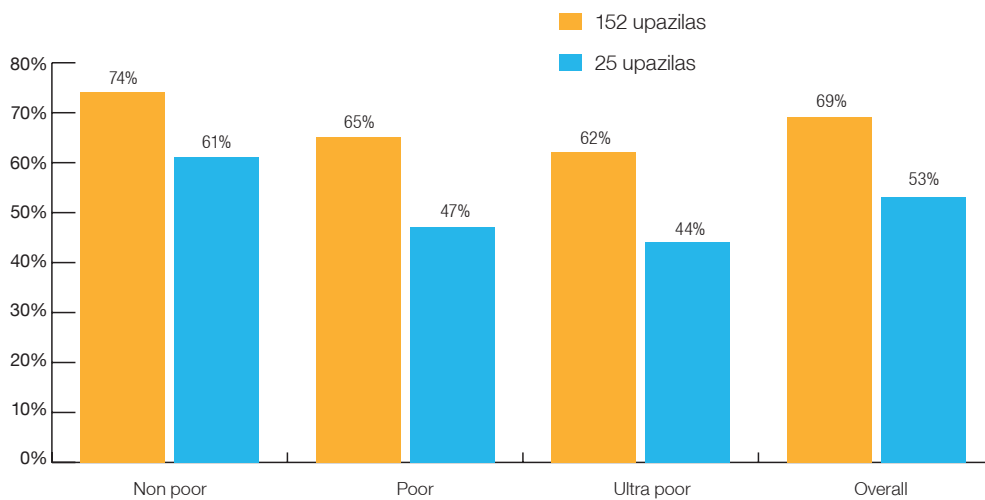
Although cluster meetings were held for different age groups, they were mainly introduced to reach adult women and men. Children and adolescent boys and girls were also reached through school programmes. From the data we can see although this turned out quite well for the women, it appeared to be difficult to reach men through cluster meetings. Most of the men had work away from the home and were not easily available. For this reason, action research on hygiene promotion for men was undertaken and tea stall meetings were initiated in 2014 to reach men with hygiene messages, since men regularly visit tea stalls after work. Since then more men could be reached. As these sessions are informal and people come and go, the number of attendees is not recorded officially, but on average 12-15 men are usually present at one tea stall session.

Handwashing with soap

To measure handwashing a proxy indicator (presence of soap and water in or near the latrine) has been used, as it is more reliable than self-reported data, as well as less resource-intensive than directly observed behaviour (especially for a large-scale programme such as this one). Recent discourse²¹ on how to measure handwashing shows that not only are proxy indicators more reliable than self-reported data, but there is also evidence that presence of necessary handwashing tools is associated with reduced disease risk. Therefore the programme, supported by IRC, took the decision to use a proxy indicator when measuring handwashing through QIS.

According to the QIS outcome data shown in Figure 5, around 69% of households in WASH I areas and 53% of households in WASH II areas have provisions for handwashing after defecation (i.e. presence of soap and water in or near the latrine). This goes to show that despite the intensive hygiene promotion, there is still a long way to go. This is in line with global data. According to the Global Public-Private Partnership for Handwashing: *"Globally, less than a fifth of people currently wash their hands properly at critical times. Even in places where handwashing is a comparatively entrenched practice and both soap and water are plentiful, people often fail to wash their hands with soap at critical times."*

Fig. 5: Provision for handwashing after defecation



¹⁹ Many of the children and adolescents who are reached through schools are also reached at the community level.

²⁰ These numbers are estimated by taking the cumulative number of participants in these meetings/sessions (which is reported through MIS), dividing by 4 (since each person is reached about 4 times a year), and then dividing by the number of intervention years. It should be noted that this is an estimation – the accurate way of counting this would be to have unique identifiers for each household which the programme did not have resources for.

²¹ Loughnan, Libbet C., Pavani K. Ram, and Rolf Luyendijk. "Measurement of handwashing behaviour in Multiple Indicator Cluster Surveys and Demographic and Health Surveys, 1985–2008." *Waterlines* 34, no. 4 (2015): 296-313. (<http://goo.gl/e2H4Bd>)

Learning and adapting

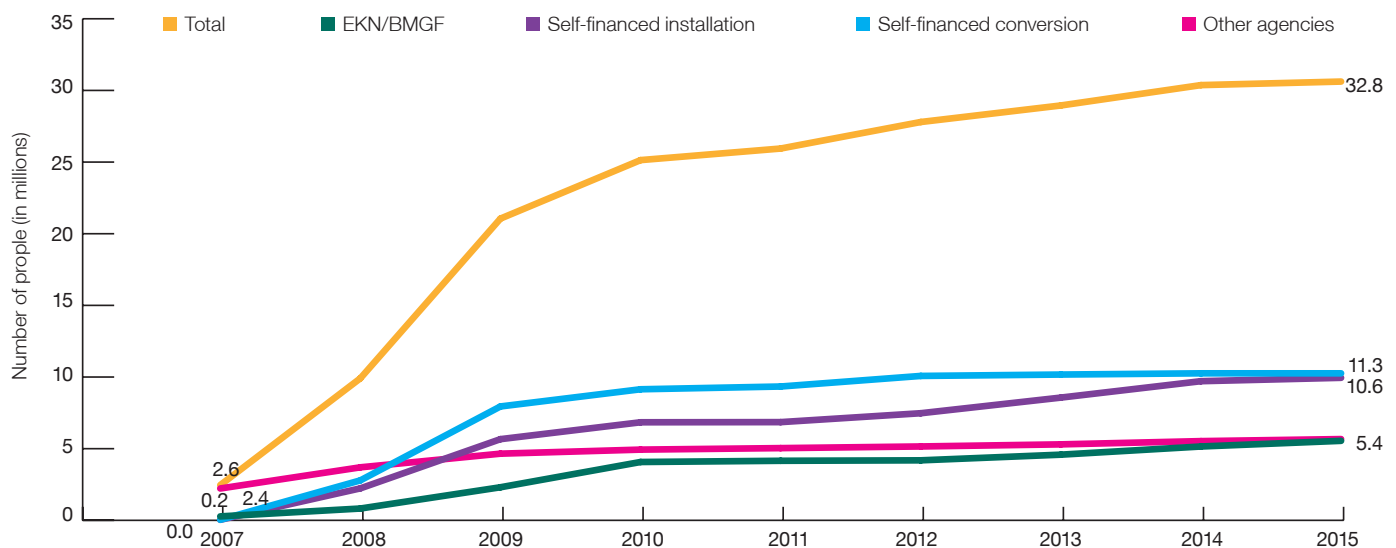
- WASH messages were reduced from 19 to 7 key behaviours²². Observation from the field shows that the community members find it easier to absorb fewer messages and translate them into practice.
 - Introduced “selling not telling” approach: BRAC staff are trained in new communication skills to engage communities, with more focus interactive discussions and problem-solving and less on instruction. Cluster meetings have become more lively and productive since field staff started “selling not telling”. BRAC WASH devised separate messages for different target audiences.
 - Examples of messages targeted at women:
 - Let’s keep our children healthy. Handwashing with soap helps.
 - Do you know what your child picks up during the day? Do you want them to eat without washing their hands?
 - Examples of messages targeted for men:
 - Be a good father, buy soap for your family so they can wash their hands.
 - Can you build a place where your family can wash hands with soap and water?
- Recruited 2 female programme assistants (PAs) per union instead of 1 male and 1 female. At the very beginning,

there was 1 male and 1 female PA per union but later on the programme found women were more effective than men in conducting the cluster meetings with females, adolescent girls, and children. Moreover, in some conservative areas, there are restrictions for men when visiting households. For these reasons, the programme decided to appoint 2 female PAs. Cluster meetings for men, adolescent boys and tea stall sessions are conducted by male field staff.

Sanitation

BRAC WASH has supported 32.8 million people (25.9 million in the first phase) in achieving hygienic sanitation, both directly through grants and loans, and indirectly by creating awareness and promoting demand, and mobilising funds from other stakeholders. Figure 6a shows that the greatest contributor to increasing sanitation coverage was the conversion of unhygienic to hygienic latrines²³ self-financed by the community members themselves, with 11.3 million people gaining access by 2015. This is in large part due to the efforts of the programme, as the community was strongly motivated in this regard through various hygiene education sessions. Moreover, between 2007 and 2015, 10.6 million people gained access through self-financed installation. The increase in direct support from BRAC WASH programme donors resulted in the number of people reached through the program growing from 0.2 million to 5.4 million between 2007 to 2015. Support from other agencies, including government, other NGOs and other BRAC programmes, increased from 2.4 million people in 2007 to 5.4 million in 2015.

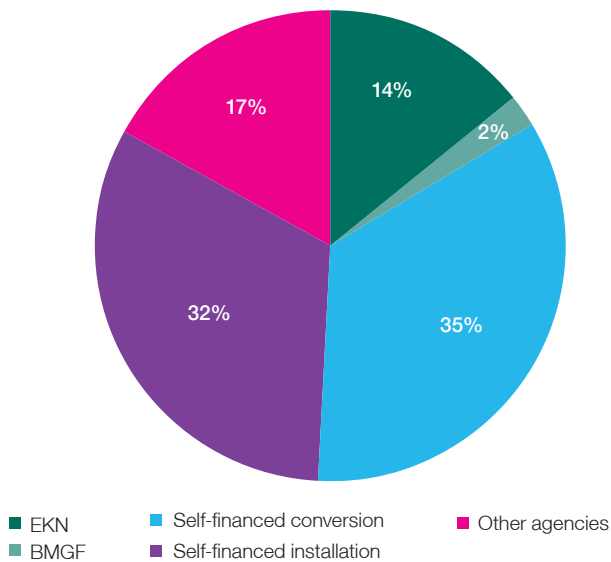
Fig. 6a: Sanitation coverage (by financier)



²² [Hygiene] Washing both hands with soap after defecation, 2. Washing both hands with water and soap before eating, 2. Washing both hands with water and soap before eating, [Sanitation] 3. Family has a hygienic latrine near the household, 4. All members of the household use their latrine, 5. Hygienic latrine is maintained and clean, [Water] 6. Water from a safe source is used for drinking and cooking, 7. Water is collected and stored safely

²³ In most cases this conversion is a simple process of installing a water seal or replacing a damaged one, thereby providing a mechanism to separate the faeces from human contact.

Fig. 6b: Sanitation coverage (by financier) in percentages



(Please note: Figure 6a only shows the gains from 2007-2015, it does not include people who already had access to hygienic latrines prior to the programme's inception).

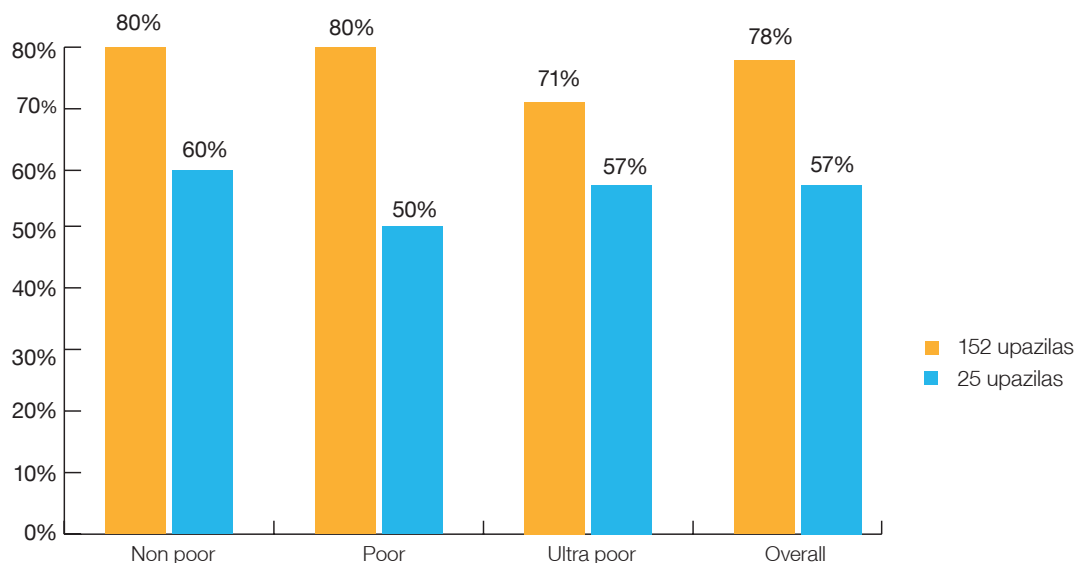
According to the outcome monitoring data from QIS, 78% households in 152 upazilas and 57% households in 25 upazilas have a hygienic latrine (Figure 7). The gaps between the different socioeconomic groups are small, with non poor and poor households in 152 upazilas having equal access and ultra poor slightly less, though also quite high with 71% having a toilet. What is striking here is that the ultra poor in 25 upazilas have greater access than the poor, which could be due to the fact that the soft loan provided to the poor is not sufficient to be able to build a toilet. The table below shows the cost of installing a double-pit latrine, and how much of it is covered by the loan and the grant.

According to Bangladesh's National Sanitation Strategy 2005, a hygienic latrine is one which confines faeces, has an intact water-seal or other tight pit closure, and is shared by no more than two households. BRAC WASH adheres to this national definition. Similarly, the Joint Monitoring Programme (JMP) counts "improved" latrines as ones that hygienically separate human excreta from human contact. However, JMP counts only latrines used by single households, not shared ones, as improved.

Table 4: Estimated cost of installing a double-pit latrine

Goods/services	Cost (BDT)	Cost (USD)	Covered by loan	Covered by grant
Rings	900	12	Yes	Yes
Slab	500	6	Yes	Yes
Pan and water seal	100	1	Yes	Yes
Superstructure	1,500	19	No	Yes
Transport ²⁴	500	6	No	No
Installation	400	5	No	No
Materials for latrine platform (bricks, cement, sand)	800	10	No	No
Total ²⁵	4,700	60		

Fig. 7: Has access to hygienic latrine at household level



²⁴ This depends on distance from the sanitation centre to the household

²⁵ The overall cost can vary based on the geographical region. The more hard to reach an area, the higher the cost.

Among those households which have a hygienic latrine, there are no households where the latrine is not being used for defecation and urination (Figure 8a & 8b). In fact, in 98% households in 152 upazilas and 99% households in 25 upazilas, all women, adolescent girls and children (>6 years) in the family use the latrine. For more details on the QIS ladder, see Annex B.

Fig. 8a: Use of hygienic latrine by different household members

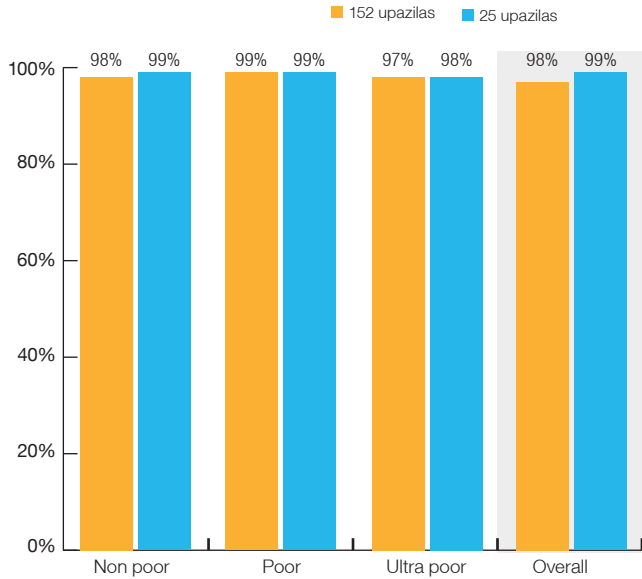
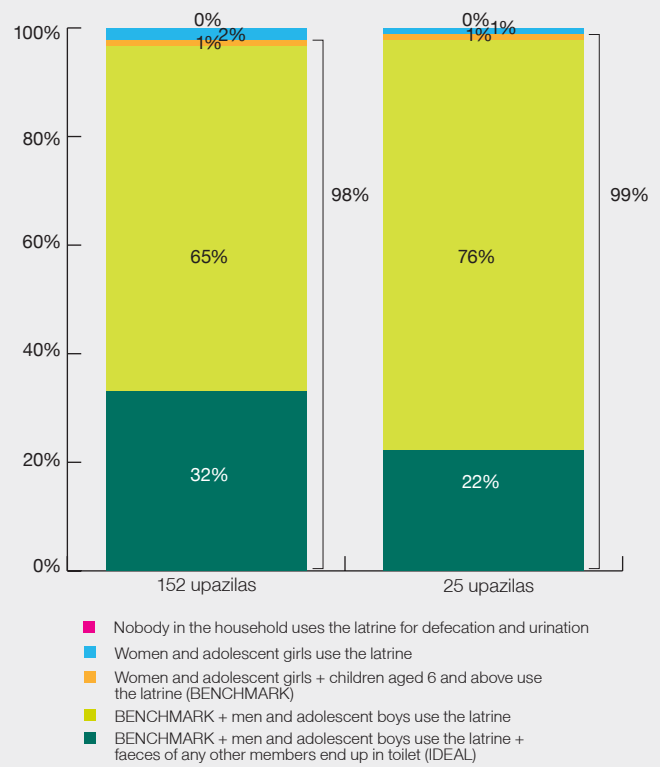


Fig. 8b: Use of hygienic latrine by household members (detailed)



Figures 9a and 9b show that among the households which have a hygienic latrine, there is fairly consistent use throughout the day and across seasons. There is very little difference between the different socioeconomic groups, and the overall use is equal between 152 and 25 upazilas, with 99% use in both.

Fig. 9a: Consistency of latrine use by time and seasonality

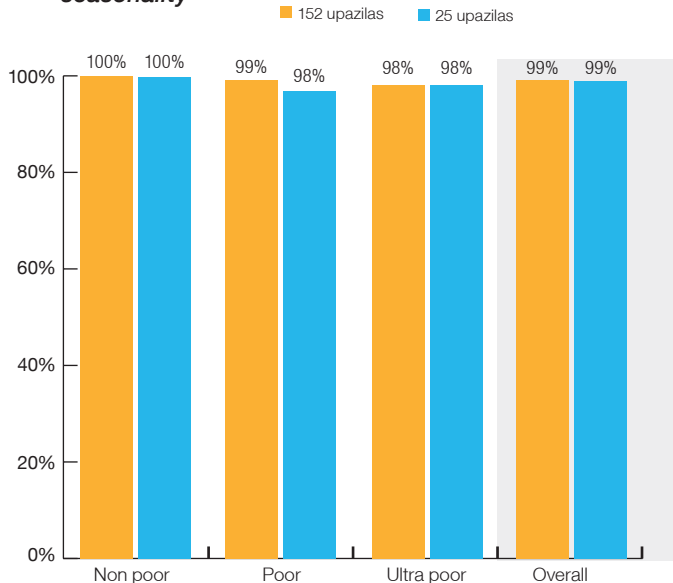


Fig. 9b: Consistency of latrine use by time & seasonality (detailed)

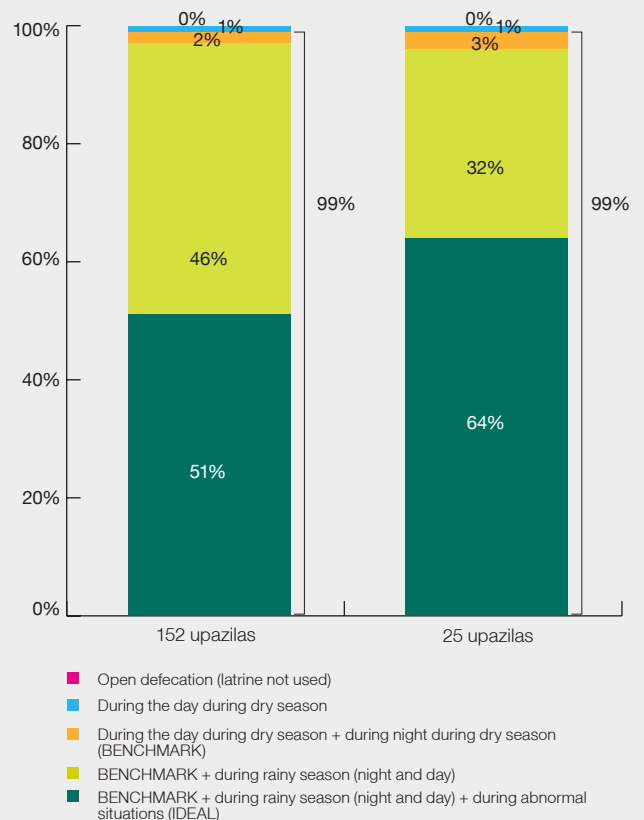
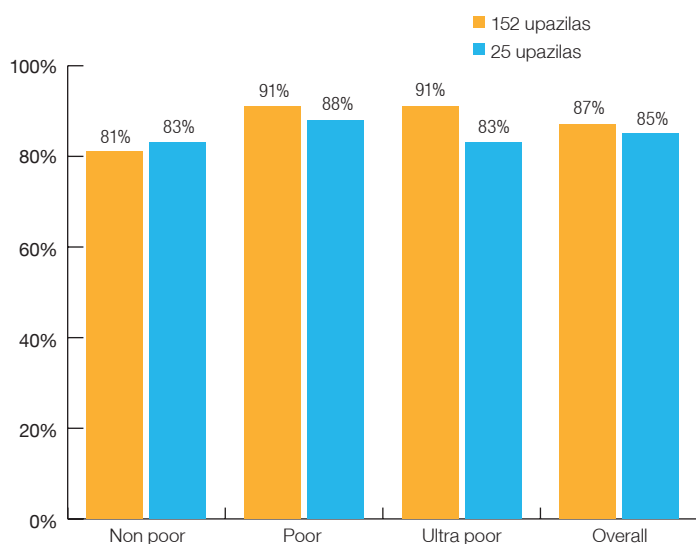


Fig. 10: Faecal sludge management



According to Figure 10, 87% of households in 152 upazilas and 85% in 25 upazilas manage their faecal sludge, meaning they empty the pit when full²⁶. With regard to FSM, all socioeconomic groups perform quite well. There is not much difference in the results of 152 and 25 upazilas since during the first phase, FSM was not focused on from the beginning, but rather started well into the programme, whereas during phase II, the programme went into it with the experience of the first phase and FSM was emphasised from the very beginning.

As part of the BMGF-funded project, BRAC WASH carried out action research²⁷ on reuse of faecal sludge as organic fertiliser. The programme has developed and widely circulated a sludge reuse protocol²⁸ (including information on safe storage and handling) through field trials, leaflets, and posters. As a result, 18,000 households have reused digested faecal sludge as organic fertiliser on their fields as of December 2014.

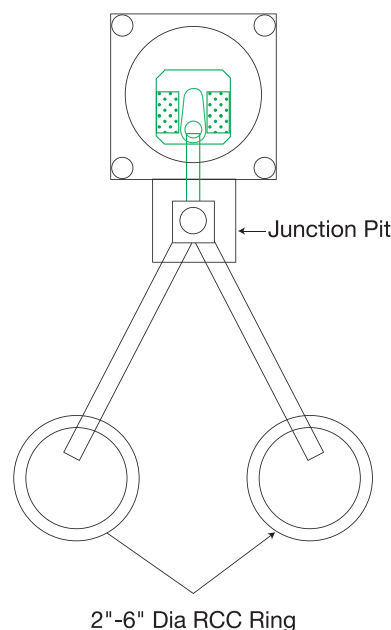
Learning and adapting

- Introduced the more sustainable double-pit offset latrines (see diagram), an alternative option to the single-pit latrine. Each pit takes about two years to fill up (for a family of 4-5), so the two pits can be used in rotation; when one fills up, the other one can be used, while the content of the filled-up pit is digested into organic fertiliser over the next two years.
- Increased the amount of grant (subsidy) to the ultra poor from BDT 1,800 (USD 23) to BDT 3,000 (USD 38; loan for the poor from BDT 500 (USD 6) to BDT 1,500 (USD 19);

and revolving fund for rural sanitation centres from BDT 10,000 (USD 128) to BDT 15,000 (USD 192). This was in response to the rising costs of sanitation materials across the country.

- Changed latrine superstructure for ultra poor from bamboo to tin, to make them more sustainable.
- Introduced the SaTo pan²⁹, especially in water scarce areas during WASH II – a low-cost plastic toilet pan pioneered by American Standard and iDE that requires less water to flush, since it has a mechanical trap-door style water seal.

Diagram 1: Design of a double-pit latrine



Water

The water interventions of the programme were on a smaller scale compared to the sanitation interventions. This is because the programme chose to take a more focused approach, specially targeting areas which were prone to high levels of arsenic and salinity.

BRAC WASH has directly supported 1.6 million people to gain access to safe water sources in the 152 and 20 upazilas supported by EKN. Indirectly through motivation for repairing and mobilising funds from other stakeholders, another 19.6 million people gained access to improved water sources. As shown in Figure 11a, till 2015, 21.2 million people have gained access to improved sources of water. The greatest contributor to increasing water coverage was support from

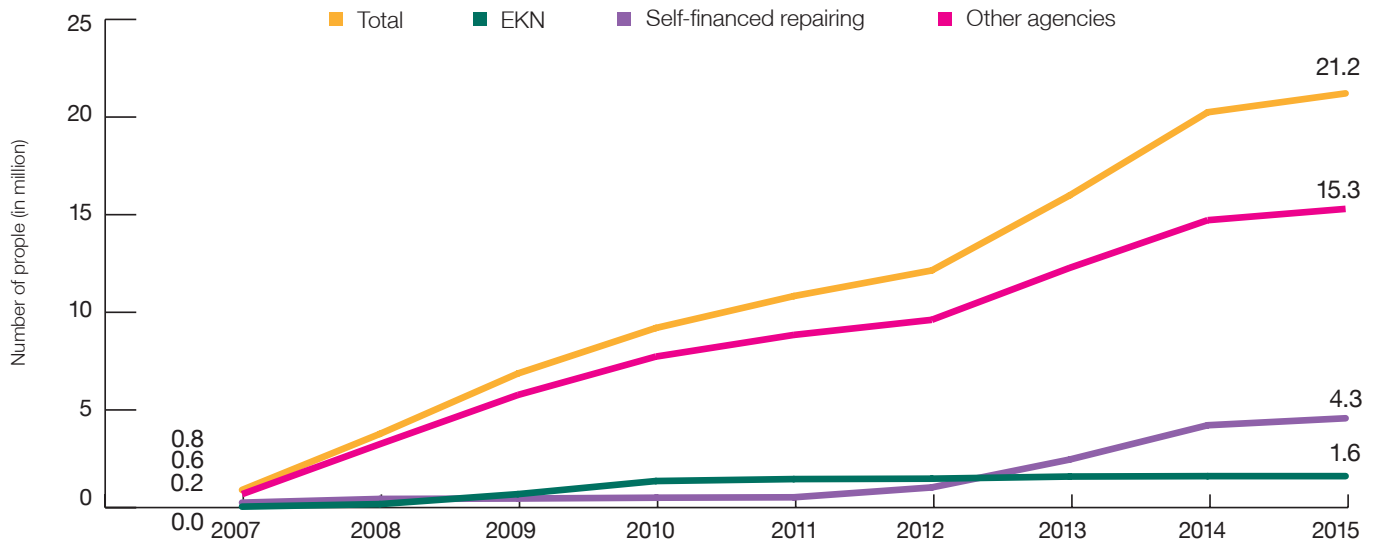
²⁶ After emptying they deposit the sludge in a hole in the garden/field, cover the hole and reuse the latrine (in case of single-pit latrine), or they cover the filled pit (in case of double-pit latrine). Some households also let the faecal sludge turn into compost by keeping it in the pit for at least 12 months.

²⁷ Dey, Digbijoy, Ridwanul Haque, Babar Kabir, Elisabeth Kvarnström, Peter McIntyre, Sharmin Farhat Ubaid. "Nothing left to waste: the prospects for faecal sludge-based organic fertiliser in Bangladesh." (2015). (<http://goo.gl/XsISH0>)

²⁸ The Bengali version of this leaflet has been disseminated in the field: <http://goo.gl/abkbTk>

²⁹ Read more on the SaTo pan: <http://goo.gl/3gl41P>

Fig. 11a: Water coverage (by financier)



other agencies – including government, other NGOs and other BRAC programmes – with an increase from 0.6 million people in 2007 to 15.3 million in 2015. The self-financed repairing of water sources also increased significantly from 0.2 million in 2007 to 4.3 million in 2015.

However, even though all the water sources fall under JMP’s “improved” definition³⁰, the actual water quality is unknown as many of the new and existing (repaired) sources have not been tested in the last 10 years.

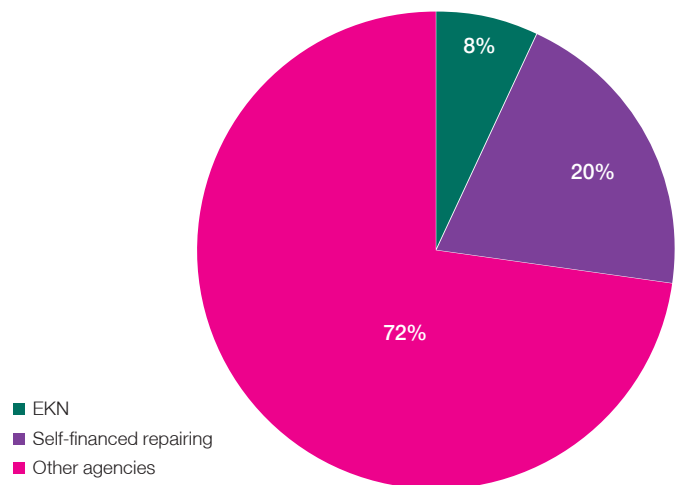
In fact, of all the new water sources, only those 1.6 million water options that are directly provided by BRAC (EKN-funded) have been tested for water quality parameters³¹ and have been confirmed as safe water sources. Therefore, testing the quality of all water sources in programme areas (not just the ones provided by the programme) is a priority which BRAC WASH has identified for its upcoming phase.

(Please note: Figure 11a only shows the gains from 2007-2015, it does not include people who already had access to improved water sources prior to the programme’s inception).

Learning and adapting

- For areas where deep tube wells are not feasible or suitable to the hydrogeological context, alternative water technologies have been provided:
 - Introduced small (70-80 HHs) and large (300-500 HHs) piped water systems³² for hard-to-reach areas.
 - Introduced two-headed and three-headed deep tube wells and pond sand filters in order to increase the access to water for the community and avoid more boring of wells.
 - Piloted solar desalination plants in the coastal belt, which is prone to salinity intrusion.

Fig. 11b: Water coverage (by financier)



³⁰ See JMP definitions here: <http://goo.gl/1luNK3>

³¹ Arsenic, manganese, iron, pH and salinity.

³² A small piped water system costs about BDT 650,000 (USD 8,333) and operation and maintenance costs about BDT 5,000 (USD 64) per month (including electricity, caretaker’s salary, and repairs). A large piped water system costs about BDT 5 million (USD 64,102) with BDT 25,000 (USD 320) for O&M since the system has to cover a larger physical area. These costs can vary depending on the hydrogeological and geographical situation.

WASH in Schools

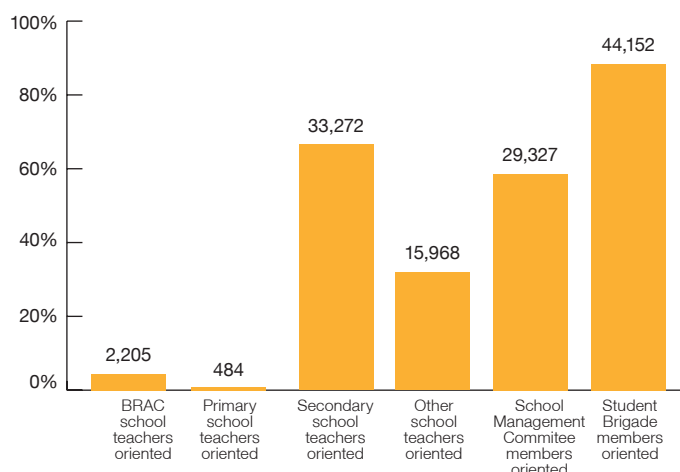
Access to safe water and provision of proper sanitation in schools are essential for acquiring a quality education. Moreover, schools are an excellent platform for hygiene education and the learning of overall good hygiene practices, such as handwashing, drinking safe water, and using hygienic latrines. BRAC WASH promotes hygiene education in all the schools in the programme areas. Moreover, the programme identified the lack of separate latrines for girls and lack of menstrual hygiene management facilities in secondary schools, and therefore intervened in this regard. For better management and maintenance of the facilities, school WASH committees and student brigades are set up in these schools. Additionally, the schools are encouraged to create a fund to meet water and sanitation-related expenses.

BRAC WASH has constructed hygienic latrines for girls, with menstrual hygiene facilities, in over 4,233 secondary schools in the 172 upazilas³³ on a cost-sharing basis³⁴ with the schools. Since BRAC started with WASH in schools, about 1.2 million boys and 1.4 million girls were reached with hygiene education (including menstrual hygiene education for girls) through the school hygiene sessions. According to an impact evaluation of the first phase of the BRAC WASH programme by BRAC's Research and Evaluation Division (RED), the absenteeism of female students reduced from 44% in 2006 to 33% in 2011³⁵. However, correlation between absenteeism and separate toilets and/or menstrual hygiene facilities was not studied. Therefore this is something the programme plans to incorporate into its future activities.

Moreover, in addition to providing hardware support to the schools, BRAC also builds the capacity of teachers, students and school management committees by providing orientation on WASH issues when it starts working in schools³⁶ (Figure 12). This helps promote taking ownership and responsibility for addressing WASH issues in educational institutions.

To ensure sustainability of the WASH facilities in schools, school WASH committees comprised of 14 members are formed in each school, with the headmaster as chairperson and a female teacher as member secretary. In order to represent all stakeholders, members include teachers, parents, representatives from the school management committee, and the school cleaner. The committee meets on a monthly or a bimonthly basis to review activities, including

Fig. 12: Orientation of teachers, students and school management committees



latrine use and maintenance. The overall responsibility of the committee is managing, maintaining and mobilising funds for the school's WASH facilities.

In addition to the school WASH committees, student brigades are established in these schools for better management and maintenance of the facilities. Each student brigade consists of 24 students (equal number of boys and girls in co-ed schools), selected from classes 6 to 9. They receive a three-day long residential training along with their teachers. Student brigades are responsible for proper usage and maintenance of latrines as well as the overall cleanliness of the school premises. They are encouraged to promote WASH messages to their peers within and outside of school and to their families as well.

A short film showing this work in practice can be found here: <https://goo.gl/2pgZOX>

The BRAC WASH example of providing separate latrines for girls has recently been adopted by the Bangladesh government, with a circular issued which instructs all schools, colleges and madrasas to keep separate toilets for girls. Prior to that, the government also strongly recommended schools to follow the BRAC WASH approach of forming student brigades and school WASH committees, and keeping an operation and maintenance fund.

³³ WASH in schools was not a part of the BMGF project activities, hence the data reflects EKN-funded activities from 152 and 20 upazilas

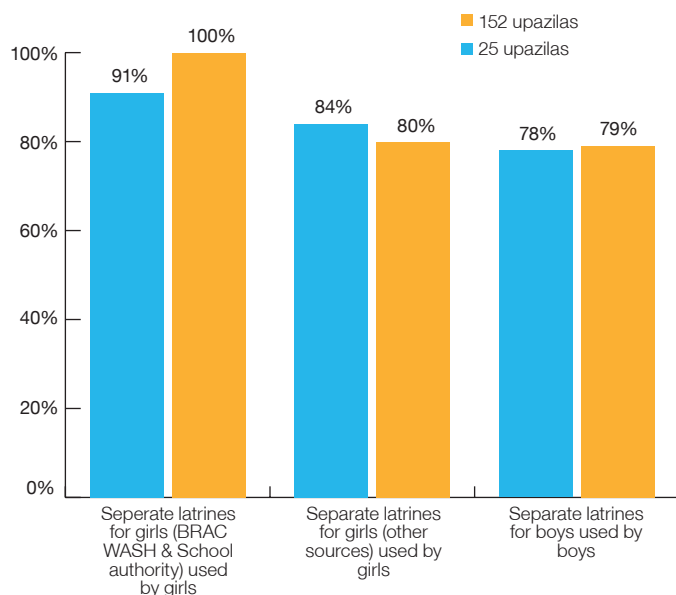
³⁴ At the beginning of the programme, co-ed and girls' schools were selected based on need and willingness to share costs. The programme proposed a fixed budget from its side to the schools, and the schools were asked to cover the rest. Based on that, BRAC WASH and schools then went into an agreement. The cost-sharing usually came out to about 50% for each side (but varied slightly from school to school).

³⁵ BRAC Research and Evaluation Division. "Achievements of BRAC Water, Sanitation and Hygiene Programme Towards Millennium Development Goals and Beyond." (2013). (<http://goo.gl/hGJ4OR>)

³⁶ School WASH guidelines and training materials can be found here: http://brac.net/sites/default/files/portals/School_WASH_guidelines_and_training_materials.zip

According to the QIS outcome monitoring data, among the BRAC WASH-supported schools, 91% of the girls' latrines provided by BRAC WASH (on a cost-sharing basis with the school authority) are used only by girls in 152 upazilas while the percentage is 100% in case of 20 upazilas. About 84% (152 upazilas) and 80% (20 upazilas) of the girls' latrines provided by other sources are used only by the girls. Moreover, 78% and 79% of boys' latrines in 152 upazilas and 20 upazilas are being used only by boys.

Fig. 13: Separate latrines in schools



BRAC WASH also supports hygiene promotion and the provision of menstrual hygiene management facilities. Among the BRAC WASH-supported schools, 71% in 152 upazilas and 96% in 20 upazilas had menstrual hygiene management facilities available (Figure 14a & 14b). This variance is mainly due to the fact that many schools in the 152 upazilas did not properly maintain the end-disposal facilities (a concrete dumper within the school grounds where sanitary napkins are incinerated). Since these results were obtained, field staff has been instructed to visit those schools and encourage the schools to improve their end-disposal facilities. Student brigades were formed and functional in 86% schools in 152 upazilas and 81% in 20 upazilas (Fig. 14a & 14c). School WASH committees were formed and functional in 78% of schools in 152 upazilas and 81% of schools in 20 upazilas. Moreover, 60% of schools have established a fund for maintaining WASH facilities.

Fig. 14a: Performance of BRAC WASH supported schools

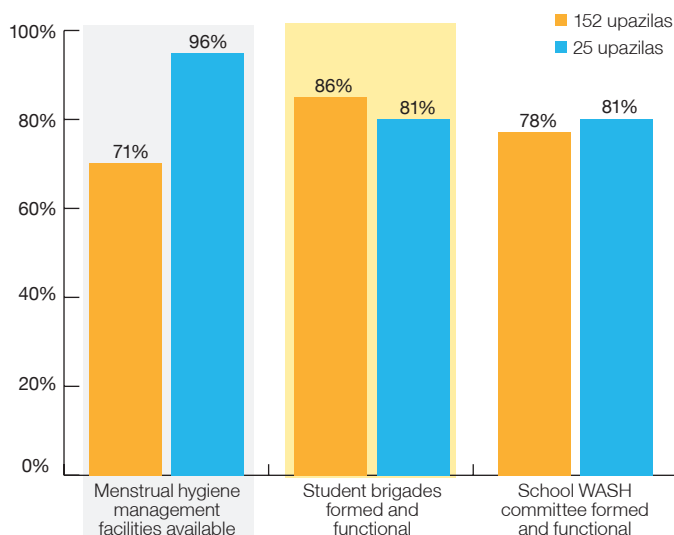


Figure 14b: Menstrual hygiene management facilities (detailed)

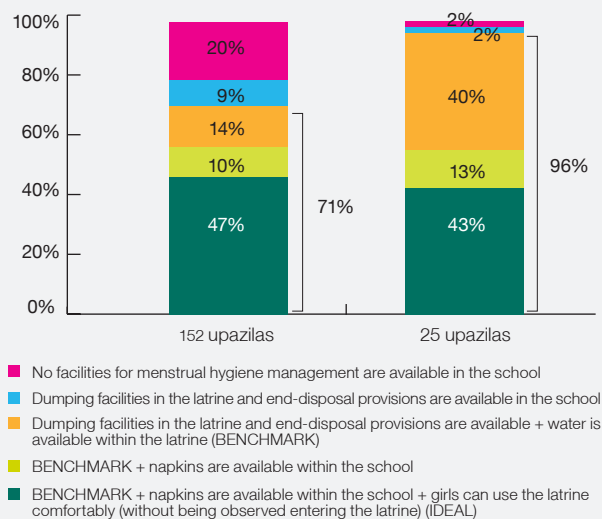
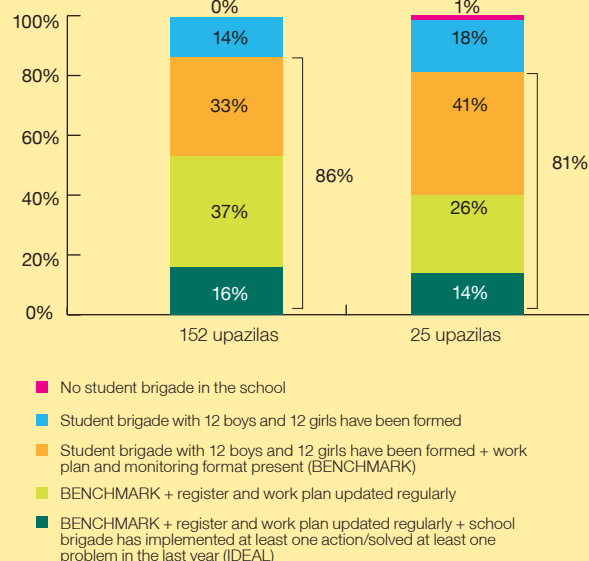


Fig. 14c: Performance of student brigades (detailed)



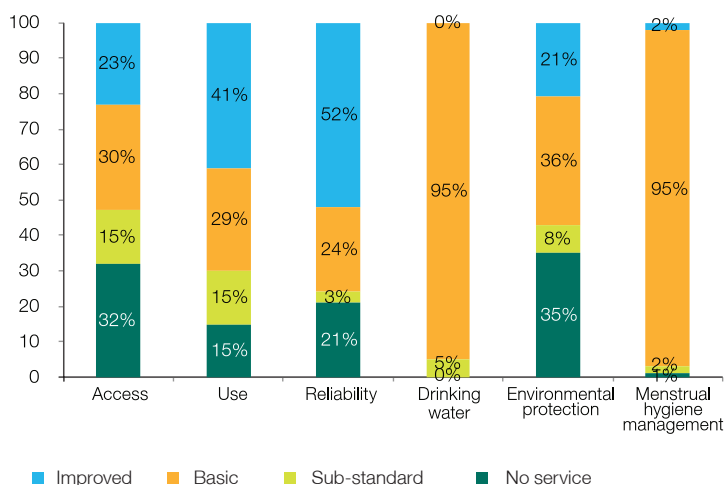
In addition to this work, BRAC WASH did a study on costs focusing on the following questions: what basic level of service is required? What does it cost to sustain behaviour change? What can be paid by schools and students? What level of external support is required?

To get insight into these questions, a service level framework was developed with six criteria and each school was assessed against these criteria:

1. Access (number of latrines per student, separate toilets for girls)
2. Use (safe use of latrines, handwashing station with water and soap)
3. Reliability (O&M, cleanliness)
4. Drinking water (available and safe)
5. Environmental protection (faecal waste safely disposed)
6. Menstrual hygiene management (availability of napkins and disposal)

If a school scored positive on all criteria it was given a basic level score. The levels run from 'no service' and 'sub-standard service' to 'basic service' or 'benchmark' and 'improved service'.

Fig. 15: Service level scores from schools based on six criteria



For the access criterion, 32% scored 'no service' and 15% sub-standard, which was due to the fact that these schools did not meet the national standard of 1 toilet per 50 students³⁷. The next step was to identify how much it takes to progress from no service or from a sub-standard level to a basic level of service³⁸. Two types of costs were collected: capital expenditure or one-off costs for items like toilet construction, handwashing stations, land, hygiene promotion strategy, water tanks; and recurrent costs which include energy costs, menstrual hygiene management, pit emptying, upgrading facilities, and salaries.

Taking only the schools with at least a basic service level we found that – for capital expenditure – it takes at least BDT 814 per student (USD 10) – including disposal and menstrual hygiene management. We also found that for each taka that BRAC invests per student, the schools invest BDT 8. For recurrent cost we found that for a basic service at least BDT 108 per student per year (USD 1.4) is required, of which a large part (BDT 41 per student per year (USD 0.5)) for hygiene promotion activities. Ownership and commitment appeared to be high looking at the fact that for each taka that BRAC invested, the schools and students invested 2.5 times on major and minor maintenance of infrastructure which provides good chances for sustainability.

BRAC WASH has placed major focus on providing sanitation facilities for girls, and is now beginning to take initiatives for boys as well.

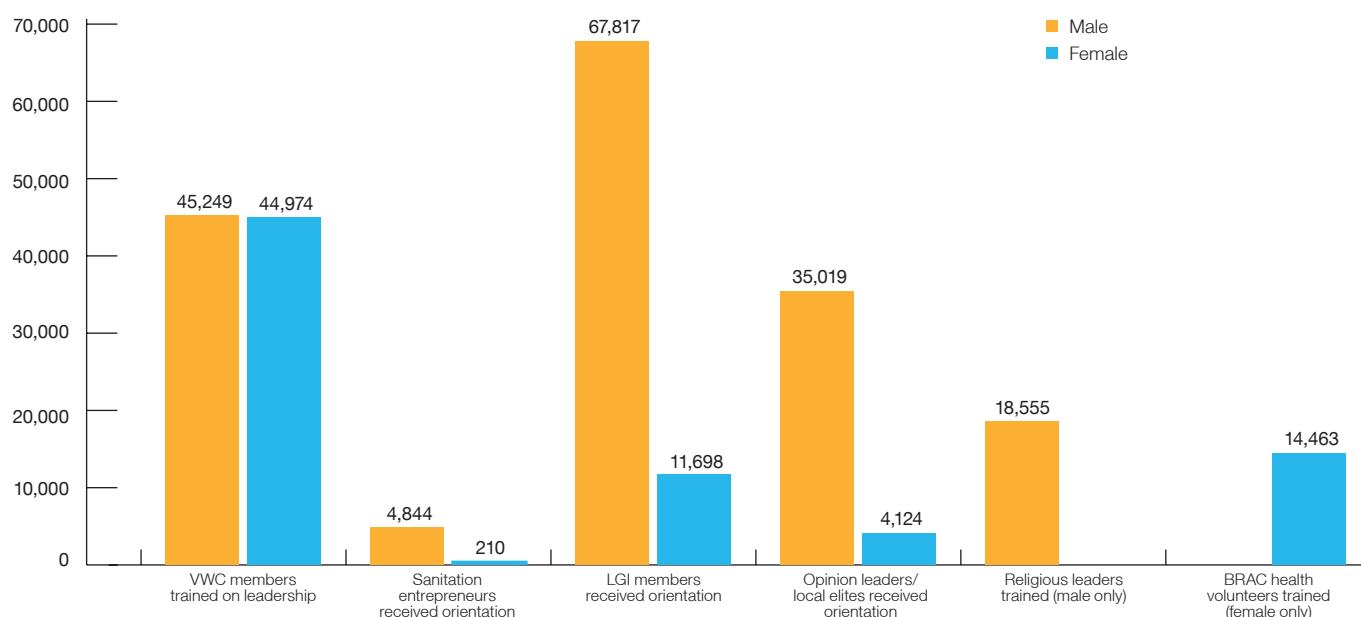
Learning and adapting

- In WASH I, the programme organised hygiene orientation (one day) with 2 teachers from each school. For WASH II this was merged with the student brigade training module, so the teachers and students received training together. After receiving the training, teachers make a plan/schedule for conducting weekly hygiene promotion sessions in class which is included in their class routine.
- The programme had mainly focused on providing hygienic latrines for girls in schools, but after recognising the need and receiving community feedback, BRAC expanded the programme to include provision of safe drinking water and the provision of latrines for boys in schools since 2014 (with the support of the organisations charity: water and Splash).

³⁷ From testing the methodology in six secondary schools (both government and BRAC supported), it was found that the student/toilet ratio was one toilet for anywhere from 71 to 150 students — all well above the national standard and therefore not considered "a basic level of service", but closer to "below-standard".

³⁸ Mekala, Snehalatha, Catarina Fonseca, Mizanur Rahman, Rakib Uddin, Mahjabeen Ahmed, Athoye Joy Sharif. "School WASH programmes in Bangladesh : how much does it cost?: applying the life-cycle costs approach in selected upazilas." (2015). (<http://goo.gl/6xFDUj>)

Fig. 16: Capacity building



Capacity building

In order to create an enabling environment, a sense of ownership, and ensure sustainability, BRAC WASH helps build the capacity of targeted members of the community. To date, 46,297 VWCs have been formed³⁹ in the 177 upazilas. From these VWCs, 45,249 men and 44,974 women have received leadership training (Figure 16). BRAC has also given orientation on WASH issues to members of local government institutions (LGIs), and to local elites and opinion leaders. Furthermore, BRAC WASH helped create linkages between these WASH committees and the local government to strengthen the enabling environment. This is done in several ways. Firstly, in many of the VWCs, representatives from the local government serve as advisors. Secondly, VWC members are instructed on how and when to contact the Union Parishad (Union Council) as part of their training. Moreover, VWC members also come into contact with LGI members during WATSAN committee meetings, along with the advocacy workshops and women’s conventions organised by the programme.

For further hygiene promotion, BRAC trained around 14,000 health volunteers (shasthya shebika), and 18,555 imams (Muslim religious leaders), to disseminate WASH messages to their local communities. The imams are provided with khutba (sermon) guidebooks⁴⁰, which have been developed based on religious verses that refer to cleanliness and hygiene.

To ensure an adequate and quality supply of sanitation materials, the programme provided interest-free microloans to 1,750 sanitation entrepreneurs, and provided orientation to over 5,000 of them. BRAC WASH assessed the existing sanitation entrepreneurs in each union, and provided loans to the ones which were most in need of improving their business. Most used this loan to invest in raw materials and equipment, and 100% of these loans were repaid. Unfortunately, not many of the sanitation entrepreneurs were women; this was also the case with opinion leaders and LGI members.

However, wherever there were women involved, BRAC WASH has tried to empower them as much as possible and many inspiring stories have come out of that. Visit the following link to read about Rasheda Sahab (<http://goo.gl/qsmlod>), a woman running a very successful sanitation business; and see the next pages for some more case stories.

³⁹ VWC guidelines and training materials can be found here: http://brac.net/sites/default/files/portals/VWC_guidelines_and_training_materials.zip

⁴⁰ The guidebook can be downloaded here: <http://goo.gl/Dns1FK>

Road to Success: The Story of Hosneara



This is the story of Hosneara Hena, a homemaker, and the wife of Md. Hemayet Hossain (Hiru) of Shivpur village in Boalmari upazila of Faridpur. Hosneara kept busy in family life, keeping to herself and didn't frequently engage with her neighbours. Not having the opportunity to advance in studies herself, she made sure her two sons and two daughters received education.

The BRAC WASH workers first met Hosneara Hena in 2007, when the programme went to Boalmari to carry out surveys. Then during the formation of the north Shivpur village WASH committee (VWC), the locals proposed that as a female youth development trainee, she should stand for the post of member secretary. Along with everyone's presence and consent, Hosneara was elected as the member secretary of the VWC, and thus began her life of public service. After receiving basic training from BRAC WASH, Hosneara displayed sincerity in her work and stood by the underprivileged population. As the years rolled by, she received considerable recognition and immense popularity.

As a result, the locals advised her to become a candidate for the councillor post in the 2011 Boalmari municipal election. After discussing with the VWC and her family, Hosneara took the decision to participate in the election. During the election, she was elected as the councillor with huge support from the locals.

After the win, Hosneara remained as an advisor to the VWC, and through regular visits, ensured the progress and spread of the programme's activities. When asked



about her future plan, Hosneara says that if she is elected this year in the municipal election then she will take responsibility to increase sanitation coverage in her vicinity. At present she has fulfilled marital obligations of her elder son and daughter, while the younger two are still studying. Her elder son is a successful business man and her family has now reached financial solvency. If other women like Hosneara Hena involve themselves in different development activities, then women's empowerment will be further established.

VWC member to social activist: Rabeya's Journey



"My name is Rabeya Begum and I am a housewife. I live with my husband and two children in Durgapur village in Rajbari district. For a long time I did not think my opinions mattered. But in 2007, when the BRAC WASH programme formed a village WASH committee in my area, the committee adviser suggested electing me as member secretary. To my astonishment, everyone agreed. Later I came to learn more about WASH and women's empowerment from a programme organiser. After receiving leadership training, I began encouraging others to make their latrines more hygienic. I also persuaded those without latrines to install ones that are safe and clean.

Soon my community members began appreciating my work. But I wanted to do more, so in 2011, I took part in the union parishad (union council) elections and was elected as a member. Now I am not only working with the union parishad and BRAC, but am also collaborating with other organisations to reach as many people as I can.

My work largely involves taking strong stands against the practices of dowry, child marriage and multiple marriages. Most of the families in my union support and appreciate the work I have done for my community."

According to the QIS outcome monitoring data, 99% VWCs in 152 upazilas and 100% in 25 upazilas are existing and functional⁴¹ (Figure 17a). Women members attend and participate in the meetings in 100% of the VWCs in 152 upazilas and 94% in 25 upazilas (Figure 17a & 17b). The fact that the VWCs in the 152 upazilas have been around since 2006, whereas the VWCs in the 25 upazilas have been existing since

2011, could account for the better performance in women's inclusion. In fact, when the programme first started in 2006, it was extremely rare for men and women in rural areas to sit together and make decisions. Thus, considering that, great progress has been made with regard to gender relations.

Fig. 17a: Village WASH Committee performance

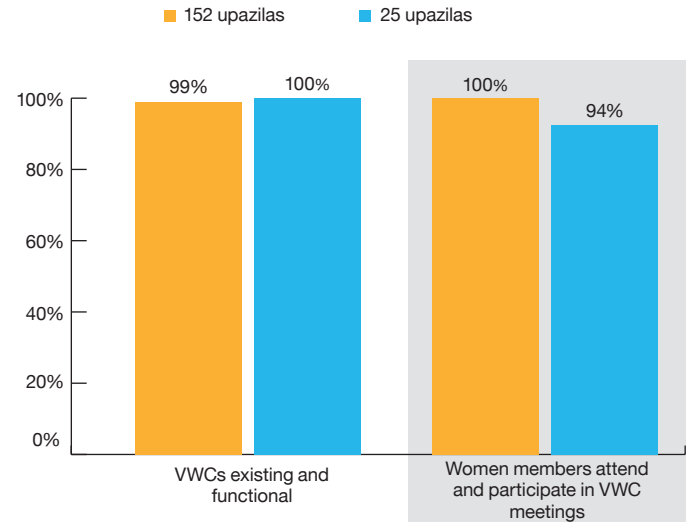
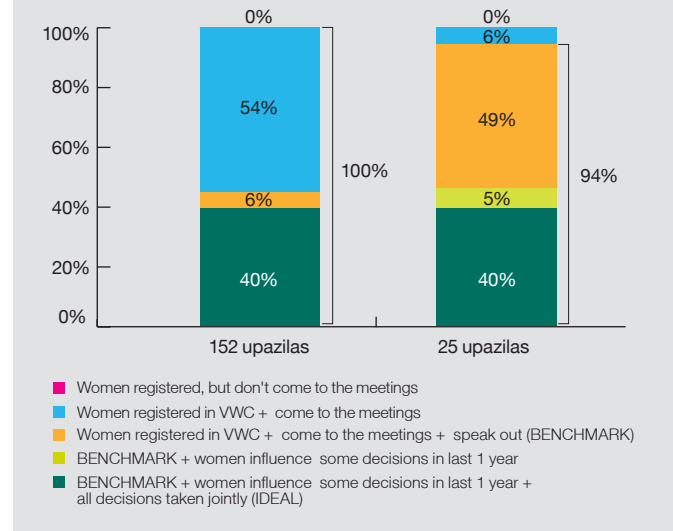


Figure 17b: Women's participation in VWCs (detailed)



Learning and adapting

- Stopped providing imam training for khutba dissemination in WASH II. In phase I, the programme duration was 5 years and it had enough resources. But in phase II, the duration of was only three and a half years, of which most of the time was spent on VWC formation, PRA, needs assessment and providing hardware services, hygiene promotion through cluster meetings, etc. In addition, the political situation was not favourable for conducting this kind of training. Therefore the programme could not organise imam training.

⁴¹ The benchmark for a VWC to be functional is that the committee (male and female members) meets every 2 months and maintains a list of decisions and meeting minutes.

RISKS IDENTIFIED AND MITIGATED

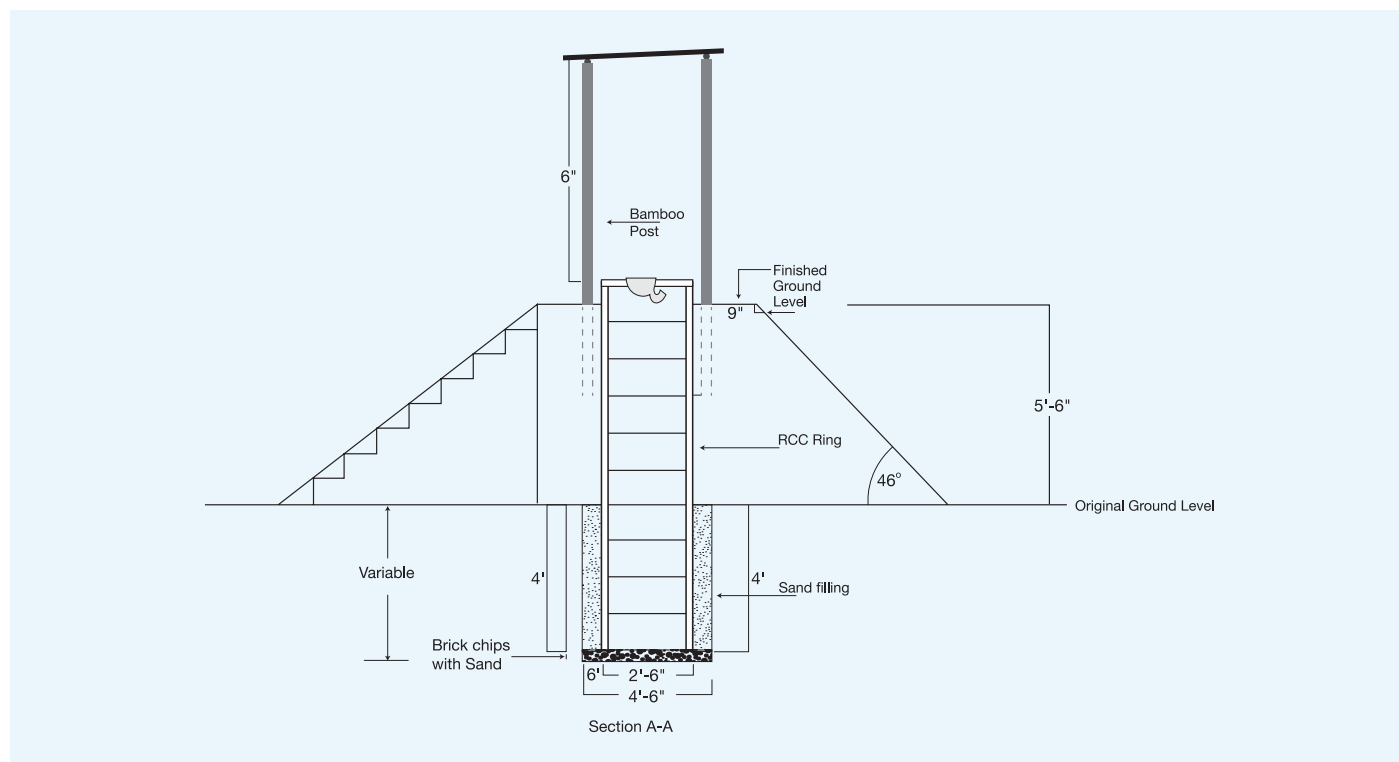
A number of possible risks had been identified at the beginning of the programme phases, to identify their possible impact on the programme implementation. This section shows what actions were taken and to what extent the risks were mitigated.

Risk	Actions for mitigation	Result of mitigation
Internal Risk		
Risk of inflexibility – i.e. applying one overall strategy in all programme areas and only driving for preset targets.	A strong internal learning mechanism was established in the programme structure for WASH II areas and a gradual scaling up of implementation was undertaken.	The programme was flexible and responsive to the needs of particular areas.
Appropriate technologies in hard-to-reach and underserved areas are not sufficiently low-cost for the community.	Supporting rural sanitation entrepreneurs to open sub-centres in areas where access is low.	Sub-centres of Rural Sanitation Centres (RSCs) are available in hard-to-reach areas.
Management processes of piped water supply are too difficult or are not taken up by communities.	The programme followed the piped water schemes carefully through monitoring and regular meetings. Motivation and awareness were also disseminated through meetings to ensure that the water management committees were functioning well.	Water management committees are strong and are running the operation and maintenance of the piped water supply systems properly.
That village WASH committees do not function and are not operating actively as was expected during the planning stage.	Regular monitoring and follow up was done to ensure active VWCs. VWC reformation has also been made with active and interested members of the community.	In 152 upazilas, 99% of VWCs are active and in 25 upazilas 100% are active, as mentioned previously.
Cultural habits which are barriers to change the traditional or bad hygiene practices.	Refine hygiene promotion strategy, with promotional activities for differentiating according to socio-cultural and geographical condition.	Progress in behaviour change has been taking place, as evident throughout this report.
Technical Assistance inputs are not sufficiently practical or timely.	Research and Learning Committee (with members from BRAC, the Embassy and IRC) planned and oversaw the Technical Assistance component.	IRC personnel visited the WASH programme frequently and provided technical assistance.

External Risk (Natural)

Natural disasters and climate change could destroy WASH facilities and therefore affect the sustainability of the WASH programme	BRAC Disaster Management and Climate Change Programme (DMCC) took measures with technical and other support as required.	All WASH staff were trained by DMCC programme, and DMCC also constructed more than 300 disaster resilient latrines in WASH programme areas (see diagram on next page).
Water scarcity and lowering of water tables.	It still remains a challenge; BRAC WASH is carrying out a pilot to address these issues especially in the hard-to-reach areas with some innovative approaches.	

Diagram 2: Design of a disaster-resilient latrine with elevated platform



Risk	Actions for mitigation	Result of mitigation
External Risk (Other)		
Commitment and cooperation of local government is weak, with demands for construction-focused programme.	Special emphasis was on maintaining liaison with the respective people. Effective orientation and negotiation at the beginning of programme with local government. Monitoring, with action taken in weaker areas.	Orientations at the beginning, and during the programme period good rapport was maintained through regular workshops and meetings with local government.
Major changes in the country's socio-political environment which may be unfavourable for BRAC to carry out its ongoing work.	Advocacy and WASH activity linkages were increased with the government, based on situations prevailing. BRAC continued with its present practice of information dissemination and cooperation with the government and other development partners.	BRAC WASH continues to maintain good rapport with the government, from the national to the local levels – with ongoing coordination and collaboration taking place.
The ADP block grant for sanitation from the local government is not well targeted to the ultra poor and coordinated with the programme activities	Advocacy was done at the community level to create awareness of the fund, and union and upazilas were supported by the programme to identify the ultra poor.	Regular presence in union and upazila WATSAN meetings and sharing of programme activities along with the list of ultra poor HHs that need latrines. Helped mobilise over 660,000 ADP grants (currently BDT 1,000/ USD 13 per HH).
That all the stakeholders at national and local levels, as well as BRAC staff from other divisions, are not supportive and do not sufficiently cooperate in the programme activities	Disseminate programme activities and findings through workshops. Arrange for government letters stimulating cooperation to LGI personnel. Orientation within BRAC and its field office.	Good relations maintained within and outside BRAC, as mentioned before.

SUSTAINABILITY

Changing the conditions for water, sanitation and hygiene in Bangladesh is not only about taking new steps forward. It is also about sustaining the gains and ensuring that things do not slip back. Investments in infrastructure, institutions and ways of thinking and behaving must be protected and enhanced.

With a combination of programme elements BRAC WASH enhanced the chance that achievements are sustained after the programme phases out. It is expected that EKN will carry out an external evaluation to assess elements of sustainability of the BRAC WASH programme two to three years after ending financial donor support⁴².

Financial sustainability

To work towards financial sustainability BRAC WASH made sure that households or user groups share costs:

- 5%-10% of the costs of new tube wells is borne by the community⁴³
- 100% of costs for constructing tube well platforms (through loans)
- Users contribute to the operation and maintenance of drinking water supply systems: minimum BDT 60 to BDT 80 (USD 0.77 to USD 1) monthly household payments for one connection to piped water supply system, and BDT 20 to BDT 50 (USD 0.26 to USD 0.64) monthly for pond sand filters. The fact that the systems still operate since they were built in 2007 shows these contributions work.
- More than 170,000 loans to poor households for hygienic latrines, of which 99% are repaid

From another life cycle costing study (at the household level)⁴⁴, it was learned that without the grant for latrine construction, twin-pit latrines would not be affordable for the ultra poor since they would require them to spend almost 6% of their reported income (0.3 USD per person per day). Hygienic latrines provided by BRAC for the ultra poor can

be maintained at a low cost to the households. The typical annual operating expenditure is BDT 402 (USD 5) per year per household for the ultra poor households, BDT 497 (USD 6) for poor households, and BDT 948 (USD 12) per year for non poor households. The difference is mainly due to the fact that non poor households more often have a septic tank which is more expensive to maintain; they spend more on cleaning materials (e.g. liquid cleaner, plastic brush instead of ash and bamboo broom) and spend more on upgrading than ultra poor household members.

- As mentioned before, 10.6 million people built latrines and 11.3 million people converted their unhygienic latrines to hygienic ones at their own cost.
- On average, 50% of costs of sanitation facilities was shared by secondary schools.
- 60% of schools have funds for maintaining WASH facilities. Coming from zero at the start of the programme, this is a significant increase. Advocating for a maintenance fund has become an integral part of the school WASH approach.
- The LCCA study on schools shows that in total (not per year), the costs per student of all the capital hardware and software expenditure on water and sanitation were BDT 587 per student (USD 8). Overall, the BRAC programme contributes with BDT 103 per student (USD 1.3) while the remaining costs were borne by the schools. If only the schools that have achieved a basic service level are taken into consideration, benchmark costs indicate that at least BDT 814 per student (USD 10) needs to be spent on capital expenditure for both water and sanitation facilities in schools (including disposal and menstrual hygiene management) and at least BDT 108 per student per year (USD 1.4) needs to be spent on all recurrent costs, of which the continuous direct support to hygiene promotion activities and training of students and teacher brigades is absolutely critical to ensure sustainability of facilities and behaviours.
- 1,750 interest-free loans to rural sanitation centre entrepreneurs, of which 100% has been repaid

⁴² To assure sustainability in Dutch development programmes it is required to have insight in how interventions contribute to sustainable development. One of the frameworks used by the Dutch government to look at sustainability topics is FIETS which stands for five sustainability elements: financial, institutional, environmental, technical and social sustainability. At the start of WASH II this was not introduced yet. Ideally this framework should be used at the start, to develop a good WASH programme.

⁴³ This was calculated by converting the time spent on labour in the amount of taka they would have earned if it was paid work.

⁴⁴ Fonseca, Catarina, Snehalatha Mekala, Mizanur Rahman, Rakib Uddin. "Costs, equity and affordability of sanitation in Bangladesh for low income rural households : applying the life-cycle costs approach to the Bagherpara Upazila." (2014). (<http://goo.gl/ts45B7>)

Institutional sustainability

BRAC WASH works towards institutionalising WASH in various ways. By integrating or strengthening existing structures or developing new ones:

- Creating and strengthening linkages with union and upazila (sub-district) government by providing orientation and participating in planning and coordination meetings. BRAC WASH ensures continuity by handing over to another district BRAC representative in that area.⁴⁵
- At the national level, BRAC WASH is member of the National Task Force on Sanitation, co-creates policy documents, and participates in the Local Consultative Group (<http://www.lcgbangladesh.org/>) meetings
- BRAC WASH has formed more than 46,000 village WASH committees. Some of these active and capacitated agents of change will continue to carry on WASH activities in the community – probably as individuals in some areas and as committees in others – when the programme phases out. The current performance of WVCs seen through QIS data shows promise for this.
- 4,233 secondary schools in programme area have improved and sustained sanitation facilities – including MHM facilities – in place. Student brigades consisting of boys and girls have been formed in each of these schools and water, sanitation and hygiene issues are taken up in the text curriculum of every class.
- Working with more than 8,000 field staff. This is part of the community empowerment approach of BRAC WASH. Even when the programme ends, more than half of the staff will remain in the community as that is where they were recruited from, while others are recruited by other BRAC programmes thereby ensuring community and institutional memory.

Environmental and technological sustainability

BRAC WASH works with low-cost technologies to allow as many people as possible to make use of these. During the second phase of the programme, BRAC WASH started promoting double-pit latrines instead of single-pit latrines. The two pits can be used in rotation; when one pit is full the contents can be allowed to compost, while the other pit is

used. Even if the content of the pit is not re-used, it makes it easier and safer for people to empty the pit and dispose of it safely⁴⁶. While this contributes to environmental sustainability, there is an issue of concern for financial sustainability. The costs for double pits are higher than single pits which will cause problems for the ultra poor and the poor when there is no money for construction and later on when the toilets need maintenance. For this reason, grants were provided to the ultra poor to construct double-pit latrines. However, this does not cover money for maintenance and therefore the programme may need to continue looking into and adapting the current strategy.

For water, 4,968 deep tube wells have been provided. However, such technologies do not apply to all areas. According to the supply and demand study, 21% of households in water-challenged areas do not have an appropriate toilet, for example. Alternative water and sanitation technologies were implemented in these cases. The following technologies are used and are still functional:

- 30 pond sand filters – with strong community management component to ensure safe use and maintenance. Pond sand filters require regular maintenance and cleaning to keep functioning. In BRAC's programme areas, a water management committee oversees each pond sand filter, encouraging community members to contribute with labour and money to help keep the filters functioning.
- 7 piped water schemes in areas with severe saline and/or arsenic contamination, all of which are still functional.
- 243,425 SaTo Pans – a toilet pan which needs less water for flushing, is made of durable plastic which is manufactured in Bangladesh by RFL. In addition, it has no risk of clogging, compared to a standard water seal, which presents a major improvement over existing products.
- BRAC WASH also works on managing faecal sludge in a sustainable way by looking into ways to safely dispose of or use the pit contents, for example by turning it into compost or into energy. Studies for BRAC WASH by the University of Leeds⁴⁷ and BioSol Energy Europe⁴⁸ looked into different modalities and commercially viable models.

⁴⁵ There are three types of meetings at the upazila and union level where BRAC WASH is participating; first one is WATSAN meeting, second one is NGO coordination meeting and third one is development coordination meeting. BRAC has designated personnel at the district level called District BRAC Representative (DBR) who is responsible for coordination and collaboration with local government and administration. After BRAC WASH leaves, DBR will provide instruction to the respective programme (Microfinance, Health, Education) personnel to participate in aforesaid meetings.

⁴⁶ However, the helminth challenge still remains since pit content digested for 15-18 months carries viable helminth eggs. Further processing/drying (by the method the programme developed) neutralises them but during the emptying, there is a chance of contamination.

⁴⁷ Evans, B., Fletcher, L.A., Camargo-Valero, M.A., Balasubramanya, S., Rao, C.K., Fernando, S., Ahmed, R., Habib, Md.A., Asad, S.M., Rahman, M.M., Kabir, K.B., Emon, M.H. "VeSV - Value at the end of the Sanitation Value Chain: final report." (2015). (<http://goo.gl/BUjNU1>)

⁴⁸ Wilde, Antonie de, and Azim Syed. "Financially sustainable processing of fecal sludge: feasibility study." (2015). (<http://goo.gl/r91uhs>)

Social sustainability

The programme's core principle is to help women and other disadvantaged groups, notably poor and ultra poor households, to become aware of WASH issues and to develop the willingness and ability to improve their situation. Findings from the independent verification study (<http://goo.gl/rt4U4U>), commissioned by BMGF, showed a huge achievement in addressing inequality, 81% of the people reached by the programme are classified as ultra poor, 9% are classified as poor, and the remaining 10% as non poor.

Focus on the poor

Over 900,000 subsidies for the ultra poor resulted in nearly equal access to toilets for ultra poor, poor and non poor. From the QIS data we have seen that once people have a toilet they also use the toilet: it has become a habit. Open defecation is now considered a social taboo and critical mass has been achieved.

The programme has achieved access to and use of hygienic latrines at a very large scale and, as mentioned before, the gaps in equity between the ultra poor, poor and non poor have been quite small.

The programme's investments in the ultra poor generate 18-20 times their value in investments made by the families themselves. LCCA data from 1,000 households in one upazila shows that for every dollar BRAC WASH spends targeting the poorest, the poor spend USD18 per person on latrine construction and about USD 2 a year on maintenance. This is excellent value for money. This data is representative for the households in this particular upazila and provides an insight into how it might be in the other upazilas where BRAC works.

The Life Cycle Cost Approach study

To understand if the toilets provided were affordable to the poorest, the BRAC WASH team, with the technical support of IRC, analysed the spending of 1,000 households with latrines older than three years which were well-maintained and hygienic (with a pit, superstructure and water seal) in Bagherpara district as a pilot.

This upazila was part of the 152 upazilas where BRAC WASH started in 2006. It has "average" conditions: not extreme climate, standard technologies, standard support from BRAC, standard contributions from communities, a spread of socioeconomic conditions. This is representative of the upazila and provides an idea how it is in the other upazilas – not with 100% statistical significance, but with a good degree of common sense certainty. Bagherpara is not a hard-to-reach upazila, where costs are normally higher. From the supply and demand study it was seen that also in hard-to-reach areas poor and ultra poor spend money on constructing their toilet.

The following costs were collected: a) Capital expenditure: One off (CapEx) costs, e.g. materials (rings, ring slabs, bricks), mason work, transport costs; b) Operation and minor maintenance: Regular and small (OpEx) costs, e.g. brush, bucket, broom, liquid & powder cleaner, soap, siphon, latches; and c) Capital maintenance: Irregular and larger (CapManEx) costs, e.g. superstructure, upgrade, pit emptying, ring, slabs, roof, colouring, pan, pipe.

See the full report at <http://goo.gl/ts45B7>

Focus on gender

As is evident throughout this report, gender is a cross-cutting issue which has been taken into account and reported on throughout this document as one section would not be sufficient to cover all of it. This section provides a summarised view of the various ways in which gender plays a role in this programme.

In 2007, BRAC adopted a gender policy to help realise gender equality in its programmes and organisation. The goals are to promote gender equity and equality within the organisation, equally serve the needs of women and men and help eliminate all forms of discrimination against women. In the same year, BRAC WASH developed its operational guidelines on addressing gender and equity in WASH⁴⁹.

A gender-inclusive approach to WASH implementation is based on the understanding that for WASH to succeed, everyone in a community must play a positive role. Women play a critical role in household decisions on water, sanitation and hygiene. However, they often lose out on wider decision-making, especially relating to finances – which are most often controlled by the men of the household. Moreover, men are usually not as concerned about WASH-related issues as women are. This approach is therefore needed to convince men that WASH is an issue for them too.

In fact, BRAC WASH places the inclusion and participation of women at the centre of its decision-making processes, especially when it comes to site selection of household latrines and community water points. The community is strongly encouraged to support the women's opinions and concerns regarding the locations for latrines and water points and take them into consideration.

As mentioned before, separate hygiene promotion sessions are carried out in the community for men, women, adolescent boys, adolescent girls and children. Moreover, WASH messages are tailored and customised for these groups. Awareness on proper menstrual hygiene management is raised among women and adolescent girls, both in the community and at schools. BRAC's sanitary napkin production centre (one of its social enterprises) has been supplying affordable, biodegradable napkins since 1999, to meet the public health needs of poor women and girls in rural areas. BRAC's health volunteers (shasthya shebikas) sell these sanitary napkins door to door, and also

supply them to school teachers so that students can buy them at a minimum cost (approximately BDT 5 or USD 0.06 per piece) while at school.

As discussed earlier, among the BRAC WASH-supported schools, 91% of schools in 152 upazilas and 100% in 20 upazilas had separate latrines for girls provided by BRAC WASH (on a cost-sharing basis with the school authority) that are used only by girls. With regard to the availability of MHM facilities at these schools – even though a good proportion of schools have disposal facilities, progress still remains to be made.

Through experience, the programme recognised the fact that a gender-inclusive approach does not only mean women's inclusion and empowerment, but that men need to be included in the conversation as well. For this reason, action research on an effective method for hygiene promotion for men was conducted, after which tea stall meetings for men were initiated with great success.

To create an enabling environment and ensure sustainability, BRAC WASH helped build the capacity of targeted community members, including sanitation entrepreneurs, members of the local government, local elites, etc. Even though women do not constitute a large proportion of these groups, BRAC WASH was as inclusive as possible. Continued empowerment of women is still needed, for example, greater encouragement of female entrepreneurs.

The VWCs, on the other hand, have been a great example of improving gender relations and empowering women. All VWCs consist of 6 women and 5 men, and one woman and one man from each VWC have received leadership training. A more detailed look at women's participation shows very encouraging results – with a major proportion of VWCs having female members who speak out and participate in decision-making. When the programme began in 2006, it was highly uncommon for men and women in a rural setting to be sitting together and taking decisions together. Considering this fact, we can see that great progress has been made over the years – not just for the WASH sector, but in society as a whole.

For further information, see Annex C for the gender objectives set in the WASH II proposal and the results achieved.

⁴⁹ Operational guidelines on Gender & Equity can be found here: http://brac.net/sites/default/files/portals/Gender_and_Equity_guidelines.zip

LESSONS LEARNED AND INNOVATION

The WASH programme has taken a formative approach, applying lessons learned and undertaking innovative research to address difficult challenges.

Looking at the results – using data from outcome monitoring, and regular output monitoring – BRAC WASH clearly achieved its objectives. Even more so, an independent BRAC WASH outcome verification report (<http://goo.gl/rt4U4U>) showed the significant effectiveness of the support, where high scores for hygienic use of latrines were reported.

Excellent progress on rural sanitation access at scale, including a reduction of the class-based sanitation gap, was possible through three main interventions of the BRAC WASH programme:

- Community mobilisation linked with supply chain strengthening and coordination with local government institutions.
- Gender-specific WASH motivation, which included interpersonal communications at places and times suitable to different gender age groups and the poor(est): a redesign of the communication strategy, focusing on fewer practices and two-way communication.
- The provision of toilet loans for the poor and grants for the ultra poor.

The QIS methodology, a quantified qualitative monitoring system with progressive behavioural scales, makes it possible to measure and report on gender and poverty-specific changes in sanitation and hygiene habits and WASH management in households, schools and communities. Results indicated that men were more difficult to reach and action learning with fieldworkers led to a new way of reaching and involving men: expanding behaviour change communication activities to tea stalls focusing on hygiene messages and talking points which are of particular interest to men.

Progress at scale needs long-term strategies with periodic adjustments. A solid management and monitoring system made sure that actions were followed up, and that those subsidies reached the right persons.

Lessons learned: Multiple grants

From 2011 onwards, BRAC WASH has seen an increase in the number of donors funding the programme. This was a positive development and a sign of the donors' support for BRAC and its WASH program and the benefits brought about by pooling of resources and technical expertise. This has been highly beneficial to the programme as it has allowed BRAC to go more in-depth by adding resources from various donors and therefore address multiple challenges in the sector. However, reporting cycles and requirements are often different for each donor organisation, and calculating donor contributions and results from multiple phases was also challenging. Harmonising donors reporting cycles and forms/templates would allow for more efficient reporting. It is a good practice and BRAC would like to follow such a mechanism in the future. It also gives better scope to fill the gaps and make equitable and rational distribution of resources, and therefore gives good value for money.

Specific lessons learned related to action research for innovative solutions

BRAC WASH is a very large implementation programme, one of the largest in the world, and at the same time it is a learning project for BRAC and the sector. Often learning projects are small projects, but that is not the case for BRAC WASH. IRC's role was very supportive to the programme; and the partnership with IRC was very much complementary: BRAC focuses on the delivery of a quality programme at a very large scale and through IRC, learning and innovation was introduced with best practices from other countries and programmes.

Within its programme, BRAC has identified a number of areas of concern for which studies and/or pilots have been undertaken. Some of these were carried out by BRAC WASH themselves, some were part of the support activities carried out with IRC as knowledge partner and some were studies for which an independent tender procedure was undertaken.

BRAC WASH initiated action research

Action research	Integrated in programme	Remarks
Latrines for haor areas	No	<ul style="list-style-type: none"> Initial investment is very high
Solar desalination plant	Piloted, but not scaled up	<ul style="list-style-type: none"> Expensive, difficult to maintain
Faecal Sludge Management (http://goo.gl/XslSH0)	Yes, but more to be done	<ul style="list-style-type: none"> The first phase (methodology; testing pit contents) took place with IRC support Awaiting license authorization from government Will disseminate messages around turning pit contents into money
Training of imams to deliver sermons (khutba) in their mosques on WASH issues (http://goo.gl/kE7Wkd)	Partly	<ul style="list-style-type: none"> More than 18,000 imams were trained. Although the sermons on WASH did not continue in the second phase⁵⁰, the process of linking up with religious leaders in an early stage of the programme and involving them in the system for WASH service delivery is still common practice. This contributes to ownership, empowerment and as such higher chances for sustained change.
Other initiatives		
2/3 headed tubewell	Yes	<ul style="list-style-type: none"> Effective in areas with water crisis
Single-pit to double-pit latrines	Yes	<ul style="list-style-type: none"> Sustainable and safe disposal as pit contents from first pit can be used as compost⁵¹
SatoPan	Yes	<ul style="list-style-type: none"> It has proven its effectiveness Affordable, durable, and requires less water

⁵⁰ Due to political situation the programme could not continue this in WASH II.

⁵¹ Additional drying/heating of sludge needed to assure that all helminth eggs are killed

IRC supported learning and action research

Jointly with the BRAC WASH team, a redesign of the communication strategy was undertaken. This was a huge effort as more than 8000 staff had to be trained to communicate differently. This also meant focusing on fewer practices and encouraging two-way communication. The QIS methodology and the associated progress scores were jointly designed with the team at head office and in the field. Two other methods piloted were the life-cycle costing approach for calculating costs of services for sanitation at household level and schools and for the piped schemes set up by BRAC; and SenseMaker, a qualitative research method using stories. These field research pilots and studies were supposed to feed back into field operations. This has only partly happened.

In order to be efficient and effective at a large scale, BRAC WASH has a rule that it should not take longer than one year for BRAC staff to learn and implement it themselves within a year - without substantial support from outside BRAC. Setting up and implementing the QIS, the revised behaviour change communication approach, and piloting SenseMaker and the life-cycle costing studies was done in close collaboration between BRAC WASH head office and field staff. Of these, the QIS and the revised hygiene promotion approach was taken up and integrated into the WASH programme. The costing studies were used to inform the future strategy of BRAC WASH. SenseMaker was not taken up. Although the first pilot confirmed results from the QIS, the team was not convinced about the added value of SenseMaker for direct service delivery. Also, although the method was carried out a second time with field staff, the team found it still too complicated to replicate without hiring external advisors.

Action research	Integrated in programme	Remarks
Behaviour change communication strategy (http://goo.gl/jc5Vof)	Yes	Focus on less practices and two-way communication using social marketing techniques
Involving more men in hygiene promotion through tea stall sessions (http://goo.gl/IOkvOq)	Yes	Taken up in the regular hygiene promotion activities
Qualitative Information System (QIS) (http://goo.gl/JWVL36)	Yes	<ul style="list-style-type: none"> Highly successful outcome monitoring system, which has been fully implemented within the programme External validation of QIS (commissioned by BMGF) showed excellent results
Supply chain Briefing note (http://goo.gl/EJqsGH) Activity report (http://goo.gl/P4i6ud)	Partly	<ul style="list-style-type: none"> Identified gaps and areas for improvement Toilet quality standards were developed and a rural sanitation centre certification system. The study took place halfway through the programme which made it difficult to integrate all findings The programme plans to implement findings from the study in future interventions.
WASHCost School study (http://goo.gl/6xFDUs) Community study (http://goo.gl/ts45B7)	Partly	<ul style="list-style-type: none"> Results are being cited in proposals, concept notes and other programme communication materials
SenseMaker	No	<ul style="list-style-type: none"> Was not prioritised by the programme Focal person changed few times Analysis of data not straight forward and difficult to do independently by own staff

Tendered action research

Six of the studies were tendered with financial support (1.5 million EUR) of EKN. The topics were identified by BRAC WASH as key challenges emerging from the first phase: appropriate sanitation technologies for high water table areas and wetlands; faecal sludge management from latrine pits; drinking water treatment and management in salinised, arsenic-polluted and water scarce areas; innovative geo-referenced monitoring platform.

Action research	Key finding/output	Remarks
Low-cost sanitation technology in areas with a high water table (SANTE) (http://goo.gl/8po4au)	Toilets designed for areas with high water table are significantly more expensive than the conventional models. One option worthwhile to explore further is a specific dry toilet.	<ul style="list-style-type: none"> Finished too late. Weak links/communication with WASH team. Designs may be revisited when starting to work in coastal region.
Value at the end of the sanitation value chain (VeSV) – faecal sludge management business options for single pits (http://goo.gl/BUpNU1)	Use of human waste is profitable if: <ul style="list-style-type: none"> access to finance is available less bureaucracy in time-consuming compost certification procedure. 	<ul style="list-style-type: none"> Method of drying faecal sludge is replicated. Results are being cited in proposals, concept notes and other programme communication materials.
Converting faecal matter into commercially viable fertiliser, biogas and electricity (http://goo.gl/r91uhs)	Business plan with figures on all aspects of the FSM business: from collection to energy and compost. With one tested unit at scale: 4.5% revenue; with 10 plus units this will increase to more than 20%. Profitability increases if heat can be sold (e.g. for cold storage facility).	<ul style="list-style-type: none"> The consortium lead BioSol Energy Europe is now looking for investors to take it to the next step. Potential for government to reduce costs on health care and environmental management.
Low-cost water supply technologies (ASTRA) (http://goo.gl/4Pmh7U)	Support tool developed for helping to come up with the most relevant, affordable and acceptable water supply method.	<ul style="list-style-type: none"> The programme will use the findings from the study for future interventions in coastal (saline) areas.
Managing saltwater intrusion impacts in Bangladesh (SWIBANGLA) (http://goo.gl/1uj0sY)	Water quality monitoring kit; a model supporting mitigation of saline intrusion; a salt water app.	<ul style="list-style-type: none"> Work seemed useful for DPHE staff; the results do not seem to be of direct use for the WASH programme. The programme will revisit the findings when starting interventions in coastal (saline) areas.
WASH data ecosystems for monitoring (WASH Info) (http://goo.gl/p8ZMP7)	Online database simplifying monitoring data access and analysis.	<ul style="list-style-type: none"> Survey builder for mobile monitoring worked well. Analysis part has high potential but too much delay in delivering to be useful for the existing programme. Combining two new activities: QIS and WASH Info caused extra burden for WASH staff.

Uptake of the programme of tendered action research: the start of the action research projects was too late for the programme to fully benefit from the results; however even if it would have started earlier, integrating results means translating the findings in such a way that they can be turned into the practices for a huge army of field staff. For small things this is doable but for more substantial changes it is easier to do at midterm or in a new phase of the programme.

In order to be of more use to the existing WASH programme, the tendering should have been the first activity to have taken place in 2012. Especially considering the long process of setting up a research committee (with BRAC WASH and IRC staff), preparing guidelines, selection and rating criteria, setting up an independent advisory committee, having independent experts on each topic available for reviewing proposals; getting sufficient proposals in with the limitation of having a European organisation in the lead. In addition, some projects took longer than expected. Most importantly, however, the studies were undertaken as an 'outside' activity rather than an integrated programme activity. Although BRAC WASH supported the researchers by linking up with field staff and selecting appropriate areas for the studies, carrying out the research was an academic exercise which did not sufficiently provide recommendations or indications on how management and field staff could use the results for service improvement of the current WASH programme. In areas where BRAC WASH will continue or expand work, for example in coastal regions and urban areas, the research findings are solid evidence to build on. Beyond BRAC WASH, in the wider WASH sector, the results were seen as valuable inputs in addressing a number of challenges the sector faces.

REPLICABILITY

BRAC WASH is a well-managed programme with strong presence in the field - through field staff, VWC members, and health volunteers (*shasthya shebika*).

The BRAC WASH approach is an integrated approach, working on the full sanitation service chain (including waste treatment and re-use) to its focus on addressing school sanitation and menstrual hygiene management. Key elements include:

- Mobilization and leadership by village WASH committees and by local government in each union.
- Monitoring of implementation by line staff, by a mobile internal monitoring team visiting each union and, in addition, a BRAC external monitoring of operations and finance.
- Planned household/personal contacts and structured courtyard cluster meetings enlisting the attendance of men, women, adolescent girls and boys, and children around 4 times a year throughout the programme areas.
- Creating links between the VWC and local government institutions and local sanitation entrepreneurs.
- Special emphasis is placed on reducing gaps in equity – thus poor households receive loans and ultra poor households receive grants for hygienic latrines; special attention to ensure involvement of both men and women in all processes.

At a time when many are questioning our ability to achieve the Sustainable Development Goal for sanitation, BRAC has proven that it is possible to deliver at scale, with equity, with excellent value for money and with proven impact on the poor, women and girls. BRAC's WASH programme has made a major contribution to better hygiene, sanitation and water provision in rural Bangladesh – changes that are powered primarily by people and behaviours rather than by infrastructure.

How replicable is this approach? What is it other sector players, development partners and (local) government can take up? An important element is to have the development partners or donors aligned and focused on a joint outcome. BRAC does not run 'projects', but focuses on 'programmes'. This means that the organisation focuses on long-lasting change that enables communities to sustain and grow. BRAC WASH systematically tracks and measures this change. These are programme elements that can be taken up by others too. Capacities were strengthened for new activities such as outcome monitoring, service levels and

costing studies, supply and demand study; and where gaps were identified, for example on behaviour change communication. Although developed for BRAC WASH, many of these tools and training materials can be taken up by others.

Some key elements others can take up are:

1. Systematic tracking and measuring
 - Use of an outcome monitoring approach to track changes in behaviour and processes and to measure the rate at which the ultra poor and poor are reached
 - Track costs of services delivered (not only hardware but also operation and maintenance costs).
2. Mobilising community members, involving all socioeconomic groups, local leaders and local government institutions.
3. Starting with behaviour change communication from the start and continue throughout the whole programme.
4. Use of tools and training materials
 - Hygiene promotion – training materials
 - Supply and demand – rapid assessment methodology
 - Life-cycle costing methodology and tool
5. Testing and scaling further promising technologies and business models. BRAC WASH is an implementing and coordinating organisation and works on key challenges the whole sector is struggling with, especially faecal sludge management and drinking water supply and sanitation technologies in water challenged areas. That is: areas with either too much water, too little water or water that is too contaminated. There is for example an urgent need for safe toilets that will not be flooded/emptied by high water in coastal and haor (low-lying flood plain) areas.
6. For faecal sludge management there are some examples available that seem promising, e.g. the business model studied by BioSol Energy Europe⁵². However, more research is needed, research with direct use in the field and with large scale in mind, to make it replicable.

However, it should be noted that BRAC has some unique characteristics (such as its size, its presence in, and rapport with, communities across Bangladesh) which enables the organization to be effective at scale. This may make the programme difficult to replicate elsewhere, in the absence of either a nimble and effective government, or a large NGO presence or mass membership organizations.

⁵² Read more on BRAC's work to turn faecal waste into energy at <http://goo.gl/QG2YaA>

RECOMMENDATIONS FOR FUTURE ACTIONS: REACHING THE UNREACHED

While initial work on BRAC WASH was generously supported by a range of donors – all supporting one programme in good coordination, BRAC is ensuring the continuation and scaling of the programme through integration into its ongoing health, education and other programmes.

In order to sustain the gains achieved from 2006-2015, BRAC WASH has begun to integrate WASH services as a component into other BRAC programmes as applicable in each of those programmes. For example, the BRAC Health, Nutrition and Population Programme's (HNPP) health workers can carry out WASH promotion at the community level; WASH issues can be included in the BRAC Education Programme's (BEP) curriculum; the BRAC Microfinance Programme can provide sanitation loans to households and entrepreneurs; and BRAC's Targeting the Ultra Poor (TUP) Programme can provide grants for building latrines to its ultra poor clients.

Although the BRAC WASH programme represents a large contribution to the achievement of MDG target 7C (access to clean water and basic sanitation) in Bangladesh, this is not sufficient. The SDG for water and sanitation aims for all people to have safe drinking water and sanitation in 2030. Future work should focus on reaching the unreached, including expanding the reach to further hard-to-reach areas and a greater focus on water quality and quantity. This may require a somewhat different approach.

Keeping track on progress towards the programme goals and towards the SDGs is crucial. This means that future programmes should look into monitoring at community level, include peri-urban and urban areas and work on solutions for safe disposal and reuse of faecal sludge.

Monitoring and linking with the Sustainable Development Goals

- Future programme objectives – and therefore also the monitoring – need to be aligned with the SDGs to allow for comparison within the sector and the region.
- Further monitoring of outcomes (such as the result of capacity building of various stakeholders).
- Monitoring systems that are specifically gender responsive, and help to enhance women's agency, power, autonomy, and give better insight into changing gender roles and responsibilities.

- Strengthen the community and school role in checking and reinforcing sustained hygiene practices. With small adaptations, such as using pictograms instead of narratives, the same proven QIS methodology can be a good tool for that. This has two benefits: through this way of monitoring, promotion of safe WASH practices is happening at the same time. Frequent promotion is needed to turn positive behaviour into a habit, not only during a programme but also after a programme has finished. This way of monitoring also makes it possible to zoom in on locations with less positive results, especially hard-to-reach areas, the coastal belt and other areas vulnerable to climate change, and urban areas.

Focus on urban and peri-urban areas

To reach everyone with improved WASH services it is not sufficient to focus on rural areas only. Roughly 30 million people live in the small towns that dot the countryside of Bangladesh⁵³. These small towns or pourashavas⁵⁴, fall between the cracks regarding water and sanitation services within Bangladesh as most urban WASH funding goes to Dhaka and other cities. The hundreds of small towns lack adequate waste disposal, safe sanitation and water services; and, they lack the organisation and expertise to address these needs⁵⁵. Around half of the towns have year-round supply from protected sources although the actual quality of these sources is not known. Coverage with basic sanitation, usually open pits, in towns is high, while access to hygienic latrines is very low.

Safe solutions for faecal sludge management after the latrines have filled up

This issue is getting even more urgent in growth centres or small towns.

Building upon the three research studies BRAC WASH has undertaken it recommends

- To expand in promoting double-pit latrines⁵⁶ of sufficient depth to eliminate the removal of dangerous sludge. In addition, safe disposal of dangerous sludge in closed dug pits should be promoted more aggressively.

⁵³ These areas include those with water challenges and overlap significantly with the Delta areas DGIS and other sector players are focusing on for integrated water resources management activities.

⁵⁴ As per the Pourashava Act 2009, the government shall declare any rural area as a pourashava if it is satisfied by these four criteria: three fourth of adult population are chiefly employed in pursuits other than agriculture, 33% of land will be used for non-agricultural purpose, contains not less than 50,000 population, population density not be less than 1500 inhabitants per square kilometer.

⁵⁵ For example, a current externally-funded solid waste project is meant to cover many towns that are often unaware of their eligibility for support. When they do receive financing for solid waste management, many local governments lack the institutional set up and don't know what to do with the funding.

⁵⁶ For safe disposal in another pit. To use the content for compost an additional round of heating/drying the sludge is needed to kill the helminth ovae entirely. From a cost-perspective the double pit may not be the most feasible option for the poor and ultra poor as operation and maintenance costs are relatively high.

- To focus on practical and safe treatment of faecal sludge and marketing of products such as fertiliser on a medium and large-scale. Advocacy is needed to simplify administrative processes for certification of products and deal with troublesome subsidy issues for inorganic fertilisers.

Finance and business models

- In the BRAC WASH programme grants and loans have proved an effective way to encourage and support community efforts. Future work should focus on strengthening existing loans and subsidy models while at the same time developing new finance and business models to cater for the remaining households without WASH services, and to support existing households in maintaining and upgrading their WASH facilities. Financing services should benefit the vulnerable groups, especially the ultra poor and the poor. A new step has already been taken with starting a joint project with BRAC's Microfinance programme to develop a sanitation loan product. This may also be a solution for operation and maintenance costs of existing toilets, which will become a challenge in the near future, especially for the poor and the ultra poor.
- For costly infrastructure, such as piped water, or treatment, and equipment for faecal and liquid waste treatment, implementation can be done with a blend of public and private investments. The programme will stimulate equitable cost-sharing for services among all economic groups.
- Make use of joint funding and cost sharing. Support local government institutions (and other institutions) to use their financial resources, particularly to serve the poorest. An example has been the use of the ADP grants for the ultra poor.

Greater focus on menstrual hygiene management

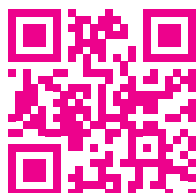
Despite the amount of work that has been done towards menstrual hygiene management, there is still much progress to be made. MHM interventions in schools need to be focused on and strengthened. Furthermore, there is a need to evaluate the actual impact that interventions around MHM have on the lives of women and girls.

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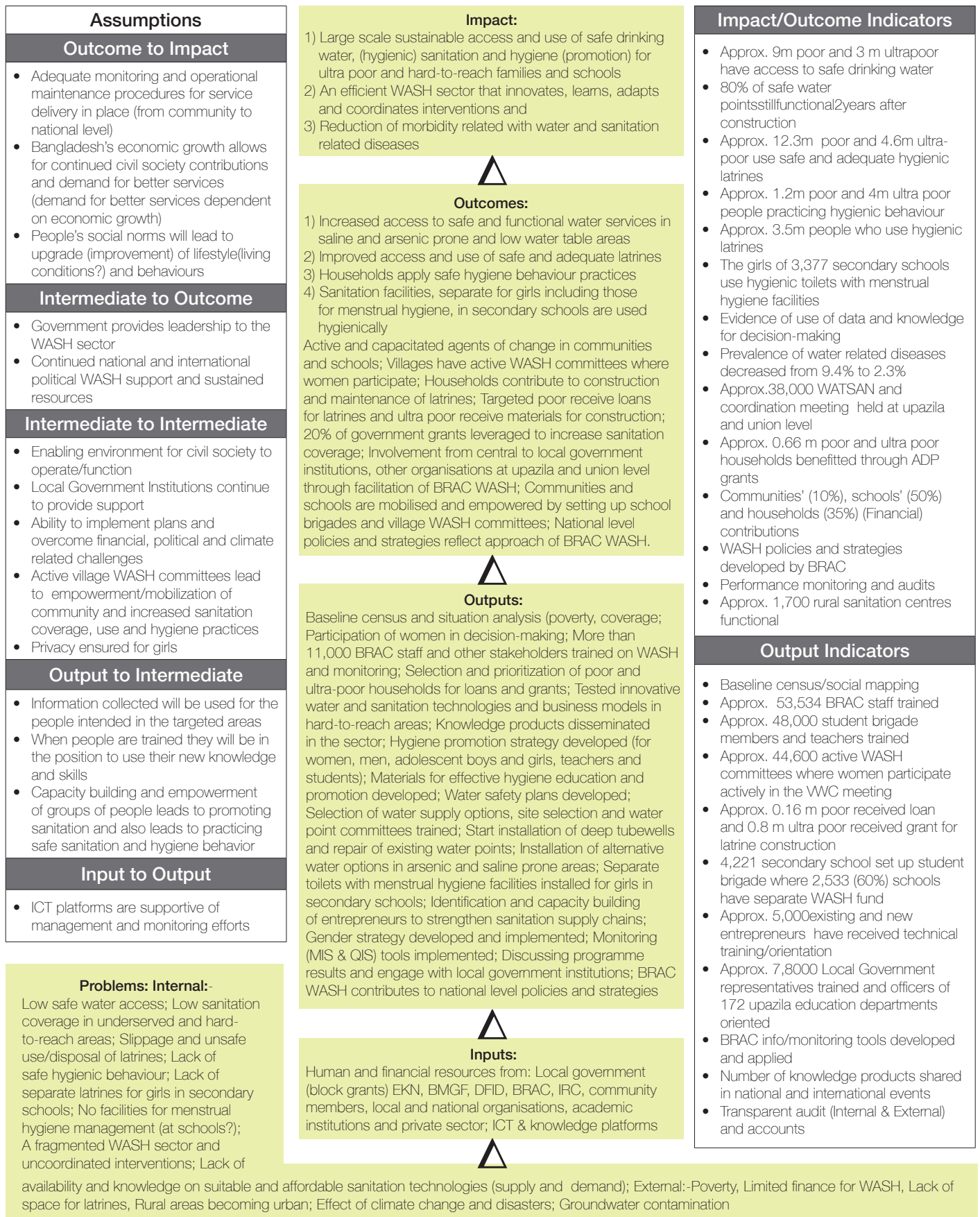
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An overview of news, blogs, resources and videos of the BRAC WASH Programme can be found here:

<http://goo.gl/dSlwxO>



ANNEX A: Result chain



ANNEX B: Monitoring Systems (MIS & QIS)

From its inception, monitoring was considered one of the fundamental elements of the programme and as such played a very crucial role for the continuous improvement of the programme. With the significant results from the monitoring new additions and adaptations were made.

During the early years inputs and outputs were measured thorough the Management Information System (MIS). Then an independent quality control unit (within the programme) was established to ensure accountability and transparency at the field level. Beside these, BRAC's Monitoring Department independently monitored the programme and BRAC's Research and Evaluation Division (RED) carried out independent studies respectively, including baseline, midline and endline surveys (<http://goo.gl/nGJ4OR>). But, there was a need for measuring the quality of services provided by the programme and outcome data, e.g. changes in the behaviour of the individuals or households, such as how well and when latrines are used, whether all the household members are using it, how well VWCs continue to perform, to what extent women are integrated in planning and

management, etc. Considering that need, the Qualitative Information System (QIS) was introduced to BRAC WASH programme in 2012, developed jointly by BRAC WASH and IRC.

The first round (<http://goo.gl/a4FSMN>) of data was collected in 2012, and the second round in 2014 (some of which is presented in this report).

The QIS was not integrated into other BRAC programmes, but BRAC RED was involved in verification of the QIS data. Moreover, validation of the QIS methodology was done as part of the independent study (<http://goo.gl/r4U4U>) commissioned by BMGF to verify BRAC WASH programme results.

This method quantifies qualitative process and outcome indicators, such as participation and inclusiveness (process) and behavioural changes (outcomes), with the help of progressive scales ('ladders'). Each step on the ladder has a short description, called a mini-scenario, which describes the situation for a particular score. Typically, scores are structured as given in the table below.

Scaling principles of QIS

DESCRIPTION	QIS score
No characteristic of condition/practice present	0
Primary characteristic present (<i>The initial step</i>)	1
BENCHMARK: Primary + Secondary characteristic is present (<i>Minimal scenario that the programme wants to achieve programme-wide</i>)	2
Primary + Secondary + Tertiary characteristic present	3
IDEAL: all four (key) characters are present (<i>The majority can probably hope to achieve only at the end of the programme</i>)	4

The QIS helps the programme to understand the outcomes of various activities. For example, members of rural communities have received a number of hygienic latrines because awareness had been raised through hygiene promotion, and obtaining grants and loan support. Information attained from the MIS and QIS enables the programme to comprehend factors such as:

- Whether the hygienic latrines are being used or not
- If they are being used, then how many are actually using them
- Whether the latrines are maintained hygienically or not (in water scarce areas people tend to break the water seal, making the latrine unhygienic)

In addition to these, households can score high in any particular behaviour but low in some others. In such cases, the MIS and QIS assist in identifying where to prioritise.

As for limitations in both processes, firstly, the data validation could have been a limitation but this was overcome through the management and monitoring by the quality control unit. At the same time, BRAC's Monitoring Department also oversees the activities. A second challenge was trying to make staff members understand the working process of outcome monitoring. Staff members were put through a more rigorous training process to overcome this hurdle.

MIS data is collected every month while QIS outcome data is collected every two years; and all information attained from MIS and QIS is available in the form of reports.

For further understanding of the monitoring system, the following link goes to a blog with a clear description of the monitoring system of the BRAC WASH programme:
<http://goo.gl/o3xRRh>

Open access data

All data from the various research projects undertaken are available online in the form of reports (linked throughout this document). The programme is also working on bringing all its MIS, QIS and research data onto a single platform which will be accessible by the public within this year.

ANNEX C: Gender objectives and results

	Objective	Results
Benefits continue	1. At least 4 out of 5 households have toilet located conveniently for use and affording sufficient privacy.	"Convenience" and "sufficient privacy" has not been measured. However, QIS outcome data shows high proportion of HHs with hygienic latrines is actually using them (see Fig. 8a & 8b).
	2. Water sources for drinking, cooking, domestic use and perhaps other uses are located within the 50 meters or less	Not captured in monitoring data, however, since the water sources are community-based (not for individual households), the programme encourages the community to install it in a location that is convenient for the households that it will serve, especially for the women.
Programme inputs	3. Women users decide on the location of water and hygienic latrine points, given technical guidance by the programme.	As part of the core programme activities, women are encouraged to take part in these decision-making processes. Fig. 17b show how women of the VWCs are participating and taking joint decisions.
	4. Women equally with men have a voice in the selection of technology.	Same as above.
	5. A detailed hygiene education/promotion intervention is designed and carried out for men and adolescent boys and another for women and adolescents girls.	The selling not telling approach was adopted and messages were tailored for different demographic groups. Separate cluster meetings were held for each group (men, women, adolescent girls, adolescent boys, and children) as shown in the report.
	6. Alternative water and sanitation technologies are gender friendly.	All technologies provided can be used by men and women both.
	7. Technological training organised for women and adolescent girls with men and boys.	Technological issues are a component of most trainings/ orientations (e.g. VWC, student brigade, etc) which are attended by male and female participants.
	8. Menstrual hygiene education and low-cost sanitary napkin promotion are facilitated for girls and young women.	MHM education provided both at the community level and at schools. BRAC's health volunteers sell low-cost napkins in the community, and to school teachers to keep for students' emergencies.
	9. At least one woman and one man in each household are involved in hygiene promotion/education.	Not measured in this particular way. This would require a unique identifier for each HH, which the programme did not have resources for. However, Figure 10 shows the average numbers of male and female HH members (adult, adolescent & children) were involved in hygiene promotion/ education.
	10. All girls and boys in school in class 6 and above, share equally in all tasks for fetching water and cleaning sanitation facilities.	This is encouraged but has not been monitored.

	Objective	Results
Programme inputs	11. Separate toilets are provided for girls and boys with nearby and menstrual hygiene facilities.	Separate toilets for girls (with MHM facilities) provided in 4,233 secondary schools in 172 upazilas.
	12. Toilet kept open during school hours.	Quality Controllers found a few rare cases where toilets were kept closed (usually because it had just been completed and had not been inaugurated), but this has not been a major problem.
	13. WASH committees have 60% female member of women from different walks of life and efforts will be undertaken to stimulate their equal participation in the committees.	Each VWC has 6 women and 5 men, from all different socio-demographic groups in the community. See Fig. 17b for results on women's participation in the VWCs.
Action research	14. A pilot study will be undertaken for hygienic promotion developed specifically for men who are heads of households and its positive results will be applied within the project.	Action research on hygiene promotion for men conducted and tea stall sessions implemented.
Income/ employments	15. Where possible, the programme has a positive impact on income for women for example in the sale of soap and sanitary napkin, Rural Sanitation Centre (RSC), local entrepreneurs, etc.	Done to a certain extent (see narrative).
Management	16. BRAC will pro-actively attract women for mid and senior level manager positions in the programme team.	Women constituted about 30% of regular BRAC WASH employees and 100% of project staff, and all staff members received gender sensitisation training.

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