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LOCAL ACTION WITH INTERNATIONAL COOPERATION TO IMPROVE AND SUSTAIN WATER, SANITATION AND HYGIENE SERVICES

The outcomes of community-based water, sanitation and hygiene interventions: a case of Bangladesh

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The study explores the outcomes of integrated water, sanitation and hygiene interventions, implemented under community-based development initiative program at 8 communities in Magura, Kustia, Nator and Nilphamary districts of Bangladesh. Installing and implementing appropriate interventions, hygiene behaviours and practices were improved significantly among the communities. The coverage of using improved latrine reached 100% in 2012 as compared to 67% in 2010. Open defecation rate declined at zero. Diarrheal and vector-borne diseases reduced by 48% in 15 rural villages through adopting good practices i.e. avoiding open defecation, using improved latrines, washing hand with soap before taking meal and after using toilet etc. Such results were achieved by the active engagement and participation of change agents and community people in planning, implementation and monitoring stages. The integrated approach with other components like disaster risk reduction, health, education and livelihood in the program triggered to achieve such results.

Problem statement

In Bangladesh, around 72% people live in rural areas and 28% population live under poverty line (BBS, 2011). Out of them, 52% households in Bangladesh have the access to improved toilet facilities, but in rural areas it was only around 48%. In an another study of National Institute of Population Research and Training (NIPORT), 47% households use non-improved toilet facility; 31 % of households use pit latrines without slabs, and 7% use a hanging toilet in Bangladesh. Unsanitary latrines either leak raw sewage into the surrounding environment or fail to prevent flies and other vermin from accessing the pit that contains the raw waste. Hanging latrines, those constructed over ditches, ponds and rivers, are still used in many areas in Bangladesh. Faecal matter in water sources also increases the spread of disease-carrying bacteria (UNICEF, 2008). The probabilities of affecting diarrheal diseases are principally depended on the condition of water, hygiene and sanitation facilities, and practices of rural communities.

The households without proper sanitation have a greater risk of diseases like diarrhoea, dysentery, and typhoid than households with improved sanitation facilities (NIPORT, 2011). Inadequate access to safe drinking water and sanitation facilities and poor hygiene are not only associated diarrheal diseases but also linked with skin diseases, acute respiratory infections (ARIs), and vector borne diseases. Diarrheal diseases and acute respiratory infections remain the leading causes of child deaths in Bangladesh (NIPORT et al., 2005). Almost 90% of child deaths from diarrheal diseases are directly connected to contaminated water, lack of sanitation, or inadequate hygiene. Over thirty thousand people had been dying annually in Bangladesh due to diarrheal diseases (GACC, 2013 and BSS, 2013).

Considering the country scenario, Bangladesh Red Crescent Society with the support of International Federation of Red Cross and Red Crescent Societies implemented a Community-based Development Initiative Program including WASH interventions between 2010 and 2012 at 8 impoverished communities in 4 districts (Natore, Nilphamari, Kustia and Magura) of rural Bangladesh to improve the water, sanitation and hygiene condition of 2,252 households. In the baseline study report of the program, it was revealed that 67% populations of the four districts were using improved latrines (BDRCS, 2010). Open defecation was a common scenario around the courtyard, road, and even in the crop field. Some of the households were using

shallow tube-wells water for drinking purposes. However, most of the tube-wells had no platform that was leading to bacterial contamination in water. Besides, a significant proportion of households were however used unsafe source like pond and river for their cooking, washing, bathing and even for drinking. On an average 89% people washed their hands before eating and 30% people washed their hands after defecation. However, the peoples were not using soap regularly to wash their hands. Only 5% people disposed their household solid waste at proper place. Community people noticed that they had been affected frequently with diarrheal diseases and sometimes their family members died without taking proper treatment as the health centre is very far from the communities, and the communication between communities and health centre was not good. While monitoring the diarrheal diseases in May, 2011, it was revealed that around 500 people had been affected with different water, faecal and vector borne diseases within every four months in the project area.

Approaches to address the prevailing situation

Addressing the problems in the communities through baseline findings, the program was designed emphasizing water, sanitation and hygiene interventions with other interventions i.e. livelihood, health, education and disaster risk reduction in the consultation with local government institutions, non-government organisations, and beneficiaries to implement at the community level. The water, sanitation and hygiene interventions were given in the following Table 1.

Table 1. Water, sanitation and hygiene interventions in community-based development initiative program		
Water interventions	Sanitation interventions	Hygiene interventions
<ul style="list-style-type: none"> • Installation of new water points (tube-wells) • Rehabilitation old water point (tube-well) • Monitoring water quality of water point and marking the arsenic affected tube-wells • Promotion of Arsenic Removal Filter • Distribution of water point repairing kits • Training to volunteers on repair and maintenance of water points 	<ul style="list-style-type: none"> • Construction of Household Latrines at the community Level • Installation of Solid Waste Management Pit at the community level • Advocacy with local government to provide subsidy latrines • Trainings to volunteers to construct household latrines 	<ul style="list-style-type: none"> • Participatory Hygiene and Sanitation Transformation (PHAST) Training to the volunteer • Participatory Hygiene and Sanitation Transformation (PHAST) session for community people • Community Based Health and First Aid (CBHFA) health session for community people • Trainings and Workshops on hygiene promotion • Hygiene promotion through Information and communication materials i.e. poster, leaflet, booklet etc.

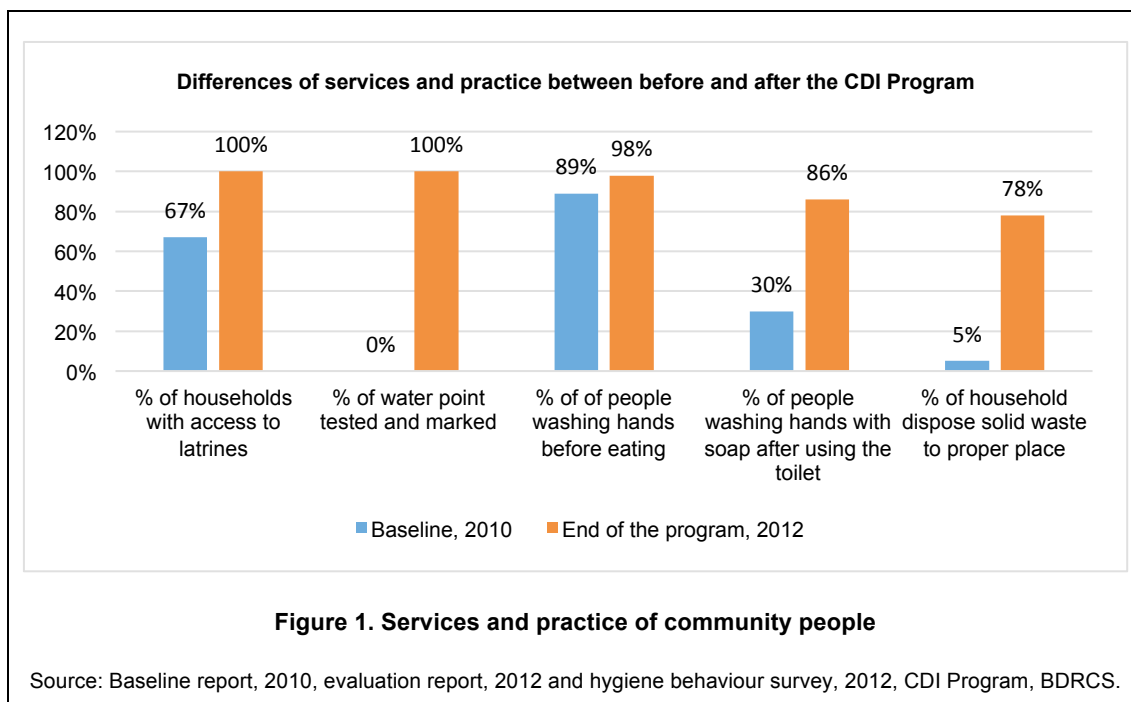
At the end of the program, 51 tube-wells were installed and 240 old tube-wells had been rehabilitated to increase the accessibility and availability of safe drinking water. In order to ensure the water quality, all new and existing tube well's water had been tested and the tube wells were colour coded accordingly. Those households exposed to arsenic-contaminated water were given Arsenic Removal Filter for drinking safe water. In total, 1293 new improved pit latrines with slabs were installed at the household of hard core poor, who did had latrines and used to went out for open defecation. Apart from that, all households had been brought under Participatory Hygiene and Sanitation Transformation (PHAST) and Community Based Health and First Aid courtyard session conducted by 56 trained volunteer (IFRC, 2013) in order to raise hygiene behaviour and practices to achieve total sanitation. The water, sanitation and hygiene related information had been shared through information and communication materials like poster, leaflet, booklet etc.

Outcomes of water, sanitation and hygiene interventions

The effective follow-up and monitoring mechanism were taken place so as to monitor the results of the intervention through hygiene behaviour and diseases surveillance survey. Also, focus group discussion and key informant interview were done with beneficiaries and key change agents to monitor the outcomes. It was revealed that at the end of the program, the differences of water, hygiene and sanitation condition had

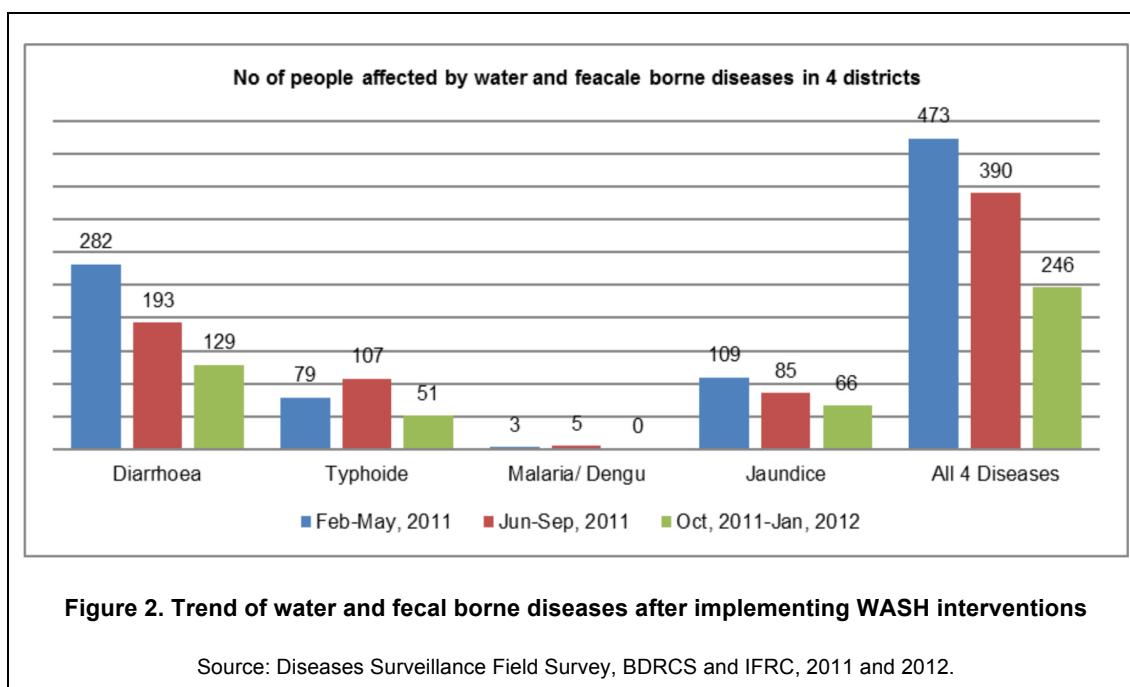
been changed drastically due to installing latrines, tube-wells, compost pits and conducting various software activities like community meetings, workshops and trainings. The water and sanitation component showed an impressively positive effect on the population. The latrines were found well used, clean, with water, soap and slippers present and even children randomly asked were aware of the correct hygienic behaviour (BDRCS, 2012). Community people noticed that open defecation rate came down to nearly zero. The entrance road of the community which remained almost filled with human faeces and odour on both of its sides is according to them ‘‘dazzling’’.

The immediate results of the WASH interventions were assessed through regular monitoring visits and hygiene behaviour survey, which had been given in the following Figure 1.



The above Figure 1 describes the access of services and result of sanitation between baseline and end of the program. The data shows that 100% percent of households had been using improved latrines after the end of the program while 67 percent household had the access of sanitary latrine at the initial stage of the program. Cent percent tube-wells water had been tasted and marked with colour those had unacceptable arsenic. There had been a significant change of hand washing with soap after toilet. At the end of the program, 86% people washed their hands with soap after toilets, which was only 30% during baseline. The households, however, had disposed solid waste at proper pace and it had been reached at 78 % as compared to 5%. The data of the above figure proved that the sanitation behaviour and practices had been changed enormously through the implementation of WASH intervention at all the communities.

In order to monitor the effects of aforementioned immediate result, diseases surveillance survey was conducted three times in one year at the intervals of four months to document the next level of outcomes. Through the survey, the number affected people with water, faecal and vector borne diseases had been counted and it became apparent that those diseases decreased significantly in most of the communities, which had been illustrated by the following Figure 2.



The above Figure 2 reports the number of people affected by water, fecal and vector borne diseases over the one-year period. The numbers of affected people have been identified through interactive interview based on a structured questionnaire survey at household level i.e. diseases surveillance survey. The aforementioned survey method was applied as health data are unavailable due to non-existence of health clinics at some communities. Data validation was done at different stages through crosschecking during collecting, and recording. It had been noticed that the number of affected people with diarrhea and jaundice dropped significantly. The number of typhoid affected people, however, increased during Jun-Sep, 2011 cohort as some of the communities of Natore, Kustia and Nilphamary district were inundated by flash flood and the water remained stable for two weeks. Besides, the diseases were spread more in rainy season in comparison to other season in Bangladesh. During Feb-May, 2011, 473 people were affected with all four diseases, which reduced to 390 during Jun – Sep, 2011. So, the reduction rate from Feb-May, 2011 to Jun – Sep, 2011 is 18%. During Oct, 2011 – Jan, 2012, 246 people were affected with all 4 diseases. If we compare it with the first quarter (Feb-May, 2011), 48% less people were affected at the end last quarter (Oct, 2011-Jan, 2012). Such results are achieved through software and hardware WASH interventions, implemented between 2010 and 2012. However, diseases data were between Feb, 2011 and Jan, 2012 in order to draw the results of WASH interventions.

Lesson learned

The lessons learned of the study are as follows.

- People adopted good hygiene practices like handwashing with soap before eating and after using the toilet getting the knowledge from the program
- Households were using improved toilet giving bad habits of open defecation
- Communities were sensitised on the link between water and faecal borne diseases and bad sanitation and hygiene practices
- Involvement of community people and change agents in planning, implementation and monitoring of WASH interventions worked well to change the hygiene behaviour and practices
- Good hygiene behaviour and practices lead to reduce the diarrheal diseases
- WASH interventions could be incorporated with DRR, livelihood, health and other relevant program for holistic change of the impoverished communities

Conclusion

The combine methodologies of both hardware and software interventions of water, sanitation and hygiene efforts of Community-based Development Initiative Program worked well with the active involvement and

participation of all levels of change agents and beneficiaries in planning, implementation and monitoring stages. The parallel implementation of WASH interventions with the interventions of livelihood, DRR, health and education achieved not only the WASH outcomes, it also reduced poverty and illiteracy. As such, the water and sanitation component could be integrated in any other development issues where possible to maximize the impact. The consistent follow-up and monitoring activities, involvement of community volunteer and beneficiaries were also the essential determinants of gaining such success in the program. As such, the documentation of results of any other WASH intervention should be done properly and shared with all stakeholders to promote and replicate the good initiatives. Even though these WASH interventions achieved significant results, it is only covered eight communities of four districts due to limitation of resources. However, there are lot of communities like them, where people were suffering with the same problems. The government and development organization should work there for improving their condition through implementing water, sanitation and hygiene interventions.

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