

WaterAid in Bangladesh



Advancing Sustainable Environmental Health (ASEH) Impact Study



Prepared by

Abul Barkat

Golam Mahiyuddin, Avijit Poddar, Rowshan Ara

Matiur Rahman, Md. Badiuzzaman, Shahnewaz Khan, Asmar Osman



Human Development Research Centre

House 05, Road 08, Mohammadia Housing Society
Mohammadpur, Dhaka 1207

Te: 8116972, 8157621 Fax: +88 02 8157620
Email: hdrc.bd@gmail.com Web: www.hdrc-bd.com

Prepared by

Abul Barkat, Professor, Department of Economics, University of Dhaka and Chief Advisor (Hon.), HDRC

Golam Mahiyuddin, Sr. Consultant, HDRC

Avijit Poddar, Sr. Consultant, HDRC

Rowshan Ara, Professor, Department of Philosophy, University of Dhaka and Consultant, HDRC

Matiur Rahman, Professor, Department of Statistics, University of Dhaka and Chief Advisor (Hon.), HDRC

Md. Badiuzzaman, Consultant, HDRC

Shahnewaz Khan, Consultant, HDRC

Asmar Osman, Consultant, HDRC



Published on 18 February 2009

EXECUTIVE SUMMARY

Introduction

WaterAid, an international non-governmental organisation working in Bangladesh, has implemented the project entitled 'Advancing Sustainable Environmental Health (ASEH)' which focuses on the provision of basic water and sanitation services. With funding support from DFID, the project uses empowering approaches and is guided by the core principles of participation, equity, gender sensitivity, governance and a livelihoods approach to poverty reduction. The project commenced in 2003 and is expected to end in March 2009.

The project has undertaken a number of studies to understand the overall impacts of the project. A baseline study was conducted in 2004 which was followed by a mid-term assessment in 2007 and a final round of impact assessment in 2008. The general objective of this studies was to assess the impact of the ASEH project by comparing the baseline and mid-term study findings using the log frame indicators at goal and purpose level. Specifically, the areas of assessment were: (i) the reduction in expenditure by households on water and sanitation-related diseases in ASEH project areas, and (ii) the increase in disposable income, especially for women and girls, due to time saved, savings in household expenditure on treatment of water, sanitation and hygiene-related diseases, increased social mobility, and an increase in livelihood opportunities in ASEH project areas.

Methodology

The present study (2008) belongs to a category known as 'Impact studies against baseline information and mid-term assessments without control design'. It follows on from a baseline study (2004) and an impact study carried out in 2007. Primary and secondary information was generated to assess the impact of the project at the time of its phasing out. A three-stage random sampling procedure was adopted. At stage one, primary sampling units (PSUs) were chosen with 'union' as the PSU for rural areas, and 'slum' as the PSU for urban areas. At stage two, one ASEH cluster from within the selected sampling unit was chosen and at stage three, the respondents were selected.



Photo: Juthika Howlader

A total of 852 respondents (529 from 40 rural villages and 181 from 20 urban slum households) were visited during the information collection. In addition, 142 adolescent girls were interviewed. A total of 13 data collection instruments were employed for the data/information collection. The field work for the study took place in November and December 2008.

KEY FINDINGS

Basic economic characteristics of the population

Rural: According to the Direct Calorie Intake (DCI) method of assessment, around 49% of surveyed rural households are currently 'absolute' poor compared to about 48% in 2007. Furthermore, 31% of the surveyed households are, at present, 'hardcore' poor (compared to 20% in 2007). The average monthly household income has increased over time from Tk. 3,786 in 2004 to Tk. 5,326 in 2007 and Tk. 6,363 in 2008. The present average monthly household expenditure is Tk 4,819 compared to Tk. 3,506 in the 2004 baseline study and Tk. 3,563 in the 2007 impact study.

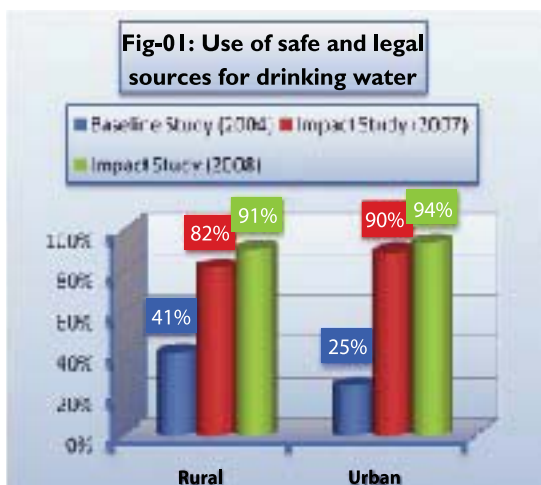
Urban: According to the Direct Calorie Intake (DCI) method of assessment, around 65% of surveyed urban households are currently 'absolute' poor, compared to 48% in 2007. Furthermore, 42% of surveyed households are currently 'hardcore' poor (compared to 20% in 2007). The average monthly household income has increased over time from Tk. 4,531 in the 2004 baseline study and Tk. 4,928 in the 2007 impact study to Tk. 6,836 at present (2008). Currently the average monthly household expenditure is Tk. 6,379 which compares to Tk. 4,167 in 2004 and Tk. 5,165 in 2007.



Benefits of water, sanitation and hygiene intervention

Rural: A total of 55 distinct benefits, categorized into 10 broader groups, have been derived from the project activities. The benefit stream scenario in both the impact studies (2007 and 2008) has remained similar. Within the broader groups of benefits, the most frequently reported benefit is sanitation (with 100% of households seeing improvement) followed by the reduced incidence of diseases (98.7%) and improved employment and linkage (98.3%). Improved hygiene knowledge and practice was reported by 97.4% households.

Urban: The benefit stream scenario in both of the impact studies (2007 and 2008) has remained similar. Within ten broad groups, the highest reported benefit has been the reduced incidence of diseases (99%) followed by sanitation (95%). Benefits in hygiene education and improved knowledge and practice were reported by 92% of urban households.



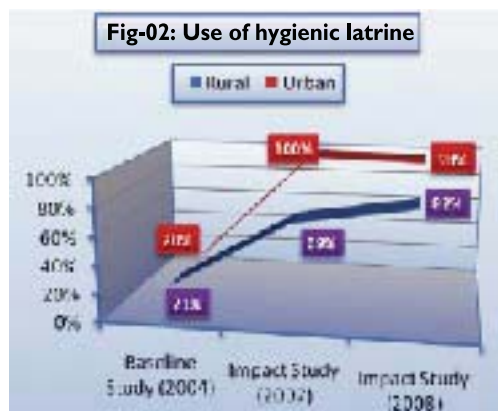
Changes in water, sanitation and hygiene practices

Rural: At present, the main sources of drinking water are either green marked (arsenic free) shallow tube-wells (46%) or deep tube-wells/Tara pump II (35%). The current use of deep tube-wells/Tara pumps has more than doubled in comparison with the 2004 baseline study figures and has risen by about 7% compared to the 2007 impact study figures (Fig.-01). There has been a meaningful reduction in the distance between households and prime sources of drinking water. The distance is currently 21 yards compared to 90 yards in 2004 and 27 yards in 2007. Ownership of the main sources of drinking water by households has increased from 27% in 2004 to over 75% during the impact studies in 2007 and 2008. Over 50% of households are reported to store water for consumption. About 90% of them keep water in a clean, covered earthen pitcher which is raised above floor level. Almost all of the respondents (97%) keep food covered before serving.

Use of sanitary latrines in the project's rural clusters is currently as high as 82% compared to 21% in 2004 and 69% in 2007/(Fig.-02). Moreover, around 40% of children under five years old currently use a latrine, compared to 16% in 2004 and 38% in 2007. Disposal of excreta for children under five has seen a substantial improvement over the course of the three studies. Nearly three-fifths of latrines

were found to be moderately or almost clean. However, half of these were located within 20 yards of water points.

Urban: At present the main sources of drinking water for 42% of households are pipeline supplied community-based water points. In the 2004 baseline study, tube-wells were the main source for the highest proportion of slum dwellers (37%). However, in the 2007 impact study, the highest proportion of respondents (45%) reported using pipeline supplied



roadside water points as their main source of drinking water (Fig.-01).

There has been a substantial reduction in distance between households and prime sources of drinking water. Currently the distance is only five yards compared to 63 yards in 2004 and 27 yards in 2007. The use of sanitary latrines in project slums has increased dramatically. At present almost all of



Fig-03: Pathways of gradual development of women leadership through CBO after intervention of ASEH project

the households surveyed (98%) use sanitary latrines compared to only 20% at the in 2004 (Fig.-02). Moreover, around 76% of children under five currently use a sanitary latrine, compared to 36% in 2004 and 67% in 2007.

Inclusion and participation of women in ASEH



Rural: Almost all respondents (96%) reported that opinion was sought from the female members of households when selecting a latrine location. This figure is similar to the 2007 impact study findings. The participation of women in different committees was found to be much higher than male participation (81.4% and 17.6% respectively) compared to the 2007 findings (31% and 21% respectively).

Urban: In the impact studies in 2007 and 2008, about 97% of respondents reported that females' opinions were sought when selecting latrine location. In addition, in the current study, over 80% of adolescent girls reported the existence of sanitary latrines at their school or college, compared to about 51% during the 2007 impact study.



Medical expenditure and disposable income

Rural: Incidences of water-borne diseases have decreased over time in the rural ASEH clusters. Water-borne diseases as a percentage of total disease incidence have reduced to 15% from 28% in 2004 and 19% in 2007. The average monthly medical expenditure per household due to water or hygiene-related diseases has reduced to Tk. 56. The adjusted value for the same in the 2004 baseline study was Tk. 237 and in the 2007 impact study it was Tk. 96. Thus, the 'expenditure saving' (disposable income gain) per beneficiary household as a result of the decrease in water-borne diseases has been estimated as Tk. 2,184 compared to Tk.1, 729 (adjusted to current prices levels) in 2007. The estimated annual saving in rural areas due to ASEH mediated reduced incidences of water-borne diseases is Tk. 722 million (equivalent to US \$10.3 million). The same estimate for 2007 was Tk. 328 million (US \$4.7 million). Alternative use of this disposable income gain is given at (fig.-04).

Urban: Incidences of water-borne diseases have decreased over time amongst households in the ASEH slums. Water-borne disease as a percentage of the total incidence of diseases has reduced to 20% from 25% in 2004 and 23% in 2007. The average monthly medical expenditure per household due to water or hygiene-related diseases has reduced to Tk. 165. The adjusted value for this expenditure in the 2004 baseline study was Tk. 470 and in the 2007 impact study it was Tk. 173. The estimated 'expenditure saving' (disposable income gain) per urban slum household as a result of the decrease in water-borne diseases has been estimated at Tk. 3, 897 compared to Tk. 3,564 (adjusted to current price levels) in 2007. The annual saving in all project slums due to ASEH mediated reduced incidences of water-borne diseases is Tk. 105 million (equivalent to US \$1.5 million). The same estimate for 2007 was Tk. 102 million (US \$1.46 million). Alternative use of this disposable income gain is given at (fig.-05).

Fig-04: Income gain attributable to alternative expenditure in rural areas

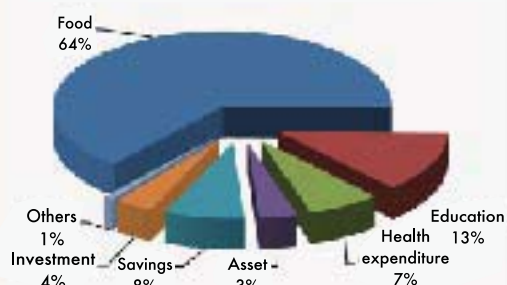
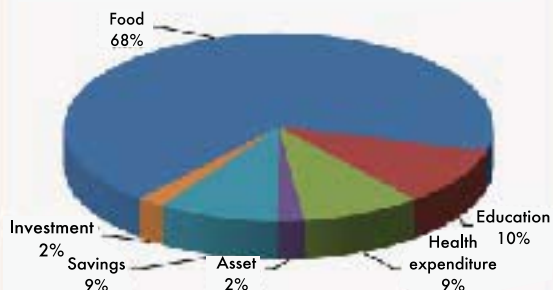


Fig-05: Income gain attributable to alternative expenditure in urban areas



Time saved in water collection

Rural: The estimated total time saved by a household for collecting drinking and cooking water, calculated from the 2004 baseline study to the present (2008), is about 104 minutes. The same estimate from the 2004 baseline study to the 2007 impact study was 71 minutes.

Urban: The estimated total time saved by each household for collecting drinking and cooking water, calculated from the 2004 baseline study to the present (2008), is about 86 minutes. The same estimate from the 2004 baseline study to the 2007 impact study was 74 minutes.

Social mobility of women

Rural: Although the ASEH project concentrates on water, sanitation and hygiene issues and does not focus directly on women's social mobility, it is evident that after successful interventions, women's social mobility within and around different institutions (both Government and private) has been significantly increased. Women can now go freely to Union Parishad, attend Community Based Organization (CBO) meetings at Union Parishad, visit banks and NGO offices etc.

Urban: Women's social mobility within and around different institutions has increased in comparison to their social mobility before the project started. More women can now visit schools, health centers, NGO offices and banks, etc. In addition, currently more women are participating in CBO meetings.

Livelihood opportunity

Rural: The ASEH project has contributed notably to improving the livelihood opportunities (in terms of water, sanitation and hygiene issues) of the beneficiary households. The estimated composite livelihood opportunity score for rural beneficiaries is currently 80 points compared to 43 in 2004 and 61 points in 2007 (Fig.-06).

Fig.-06: Changes in Rural Livelihood Opportunity: Composite Score

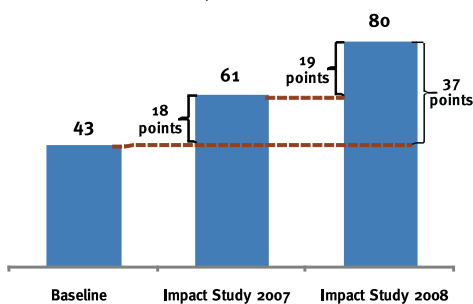
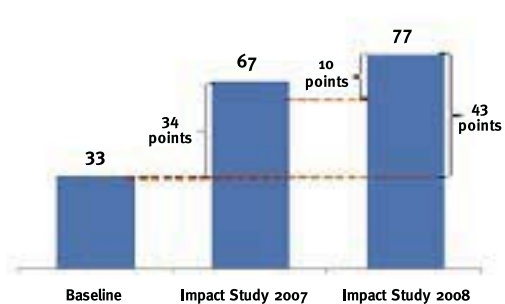


Fig.-07: Changes in Urban Livelihood Opportunity: Composite Score



Urban: The ASEH project has contributed substantially to improving the livelihood opportunities (in terms of water, sanitation and hygiene issues) of the beneficiary households. The estimated composite livelihood opportunity score for urban slum dwellers is currently 77 points compared to 67 points in 2007 and 33 points in 2004 (Fig.-07).

RECOMMENDATIONS

On the basis of the key findings, the following three categories of recommendations have been made:

Future designs of the programme

In all future designs, the potential role of ASEH-related programmes in reducing economic and human poverty should be incorporated according to the Millennium Development Goals (MDGs) as well as being one of the major national poverty reduction and economic development strategies. This is fully in line with the 'Government's Vision 2021'.

In all future designs, efforts should be made to ensure more pro-active participation of people, especially women, children and the poor, in the planning and implementation of all ASEH programme components.

ASEH-related programmes need to be designed in a way that ensures most women can properly utilise their saved time in water collection for income generation activities and thereby further improve their livelihoods.

Understanding the true impact of ASEH

In order to understand the true benefits and impact of ASEH, as well as exploring the poverty reduction role of this model, a comprehensive socio-economic cost-benefit and cost efficiency study is recommended.

The necessary continuation of similar ASEH programmes

In view of the robust and high economic gain, programmes like ASEH should continue - incorporating all of the programme's current components but also including more pro-poor insights.

Considering its high annual saving due to the reduction of medical expenditure, programmes like ASEH should continue as one of the key health-poverty reduction strategies in both urban and rural communities in Bangladesh.



WaterAid Bangladesh

House 97/B, Road 25, Block A, Banani
Dhaka 1213, Bangladesh
Tel: 88 02 8815757, 8818521
Fax: 88 02 8818521
info@wateraidbd.org
www.wateraid.org/bangladesh



WaterAid's mission is to overcome poverty by enabling the world's poorest people to gain access to safe water, sanitation and hygiene education.