# Strengthening the Business Case for WASH at RMG Factories in Bangladesh: Pilot Study

**Submitted To**

**WaterAid Bangladesh**

**Submitted By**

**Faisal M Ahamed**
**Md Sogir Hossain Khondokar**
**Md. Riazul Islam**

**May 2022**

# Executive summary & Table of Findings

**Background:** The readymade garments (RMG) makes a significant contribution to the national economy. Most workers reside in and around Narayanganj in low settlement areas or 'worker colonies' with a lack of reliable access to clean water, proper sanitation facilities, and drainage systems, leading to the risk of the rapid spread of water-borne illness.

WaterAid Bangladesh provided technical and financial support to Sajeda Foundation to implement a project in three selected garment factories. The target factories workers live in low-income settlements scattered across Rupganj, Araihazar, and Sonargaon Upazilas of the Narayanganj district. The technical support extended to increasing the access to WASH services in those areas.

**Objectives:** The assignment's main objective is to help design and co-implement the project's research component, including Baseline, midline, end-line, and calculation of return on investment of WASH interventions on factory production and RMG business concerning three designated factories. The specific objectives were: **(A)** Identify and explain with facts and figures derived from Baseline, midline, and end-line studies and other assessments, changes in WASH deprivation situation of the factory workers at factory and community, and their family members at the community level. **(B)** Articulate with clear quantitative measures the changes attained in four benefit parameters (absenteeism, productivity, quality, and turnover) following the WASH interventions at the community and factory level. **(C)** Measure changes in the workers' awareness and hygiene practice at the factory level, particularly handwashing and MHM behaviour. **(D)** Calculate using an acknowledged methodology the return on investment of WASH interventions at the community and factory level.

**Methodology:** The study design is a combination of quantitative and qualitative techniques. Data was primarily collected through garment worker's surveys at households for the quantitative study. The quantitative survey adopted a cross-sectional survey. Qualitative approaches included Focus Group Discussions (FGD) and Key Informant Interviews (KII). Besides, structured observations (water point, latrine, handwashing facilities, and food hygiene management) also took place in factories. Observations regarding handwashing behaviour were observed at factories during the lunch break. The Diary method was used for recording the performance of garment workers. All data collection methods and techniques remained the same as the Baseline to ensure data and information comparability.

The total sample size of workers will be 800 in the endline following Baseline. The baseline survey adopted a disproportionate sample of 80% female and 20% male, also adopted in the endline survey. The project team indicated that around 10% [using a random sample of 80 (±5%)] of workers received the full intervention[1]. So the sampling had two independent sections: 1) Workers receiving messages at factories and 2) workers receiving the full intervention.

**Demographic data:** 80% of female workers and 20% of male workers were selected for the study. The workers' average income has increased to BDT 13,017 ($148 USD), slightly higher than baseline BDT 12,400 ($140 USD), 5% higher than baseline. The average monthly expenditure of the workers has also expanded to BDT 11,143 ($125 USD) from BDT 10,210 ($115 USD)) (9.1% increase since baseline but not significant).

**Community-level changes:** The workers have better livings and social status, which they gained from the project interventions in their community. At the endline, 31% of households have access to safely managed water facilities which was 0% at baseline. Almost all the water sources (98.9%) are fully functional, and 79.3% of water taps are fixed with concrete. Almost (76%) households have motor water facilities for drinking purposes. Everyone here uses submersible water stored in the tank from

[1] Full intervention implies that the beneficiaries received knowledge at factories as hardware installation at community.

the surface through the motor, and water is always available here. Now, 79.3% of households collect their water in cleaned water pots.

77.2% of households have access to handwashing services, and 70.8% have cleaning agents at handwashing points. 98.9% of respondents received handwashing messages from the project activities, and 94.5% learned proper handwashing. Sajeda Foundation contributed regarding handwashing facilities. They have arranged latrines, safe drinking water, and tap for handwashing factory workers.

26.1% had safely managed sanitation facilities, and overall sanitation facilities have improved. The emission of bad smell was decreased 41.2% compared to baseline. 98.4% have running water within the latrines. Almost (100%) respondents have access to a handwashing facility with soap and water after using latrines. Visibility of faeces in latrines reduced to 12.3% compared to 31.7%. 89.7% of the respondents have suitable latrines for women's usage compared to 7.2% at baseline.

84.7% of females used sanitary napkins. 84% of female household members change their MHM materials within 6 hours.

90.7% washing and clean their food properly before cooking. 81.1% stored cooked food in a high and secured place. 95.8% of households received the food hygiene management message from this project.

All respondents knew COVID 19. 77.9% adopted handwashing with soap to prevent COVID-19, and they (89.8%) mentioned the TV media as a primary source of information. At least one household's member suffered from any diseases reduced almost 11 percentage points. A few families (10.4%) have suffered from waterborne diseases, including jaundice, typhoid, dysentery, diarrhoea, malaria, etc. The average suffering from the disease is 1.1 days, showing a significant decrease.

**Factory Intervention VS Full Intervention:** Workers who received messages at factory and hardware facilities at community received are termed as 'full intervention', and the workers who did not receive any hardware facilities at the community are termed 'factory intervention'.

In full intervention, 100% have access to safely managed water systems, whereas 8.2% in the factory intervention. 82.2% use motor lifting water for their necessary works, and all water system is functional. 80% collect water in a clean water pot.

Besides, 100% have access to safe sanitation systems in full intervention, whereas 1.8% in the factory intervention. There are slippers/sandals in every toilet in full intervention, and all respondents use them. 91.3% reported the toilet as women-friendly. 99.1% gained handwashing knowledge through the project promotions.

In factory interventions, 86.3% use a sanitary napkin for maintaining menstrual hygiene, and in full intervention, it is found 80.6.

**Factory-level changes:** All the workers use a deep tubewell as a source of drinking water. Besides, Supply water and Filter facilities were also included. 38.7% use ultraviolet water disinfection system purified water. All of the factories have safely managed water sources for drinking.

Every RMG has a single-sex latrine. 96.1% of the latrines are cleaned every day. 30.8% stated that handwashing agents are available now in all factories. Moreover, 52% agreed in one point that they got WASH massages regularly. 82.1% of female and 52.1% male workers wash both hands with soap and water.

98% of the RMG workers are comfortable enough to change MHM materials in the latrines of factories. Almost 88% of the interviewed female RMG workers received messages on menstrual hygiene management. Sanitary napkin users increased every month, especially after providing MHM

awareness messages, so the menstrual hygiene management practice among female workers had improved, and the rate of menstrual-related leaves decreased.

37.6% of workers bring their homemade food and have it in the Factory dining. 99% of the RMG workers consider the available handwashing places adequate. 98% have availability of shelves or rack for storing food and the opportunity for keeping cooked food at factories.

**Changes contribution to Project Activities:** Many households consider the project's recent action regarding water improvement. 83.1% thought that this project significantly contributed at the household level, and all gave opinions regarding full Intervention that Shajida Foundation/WaterAid had brought changes.

Rainwater harvesting (RWH) is the collection and reservoir of rain. The water storage capacity for Fakir Fashion is 3000 cubic meters. In comparison, Esquire has a preservation capacity of 300 cubic meters of water at a time. Esquire uses this rainwater for washing and dyeing of the products. Esquire Knit uses this water for toilet flushing and gardening

**Social Benefit:** It is observable that more household members have access to safe drinking water, basic sanitation service and handwashing facility which have been possible because of the hardware instalment managed by this project. Additionally, the awareness campaigns led by this project have helped household members increase their knowledge about the occasions or proper times of handwashing, benefits of using sanitary napkins, hygienic way of washing and drying reusable cloths for MHM and food hygiene management. Consequently, it is noticeable that their practice level has also increased.

Safe water, good sanitation, and proper hygiene practices can significantly change people's health, education, and socioeconomic development. A range of diseases occur and spread because of unsafe water, poor sanitation, and hygiene practices. The components of ROI together made a positive impact on the intervention localities. The primary data analysis suggests a significant decrease in the occurrence of water-borne diseases, especially diarrheal disease.

The community-level impact of these accessibility and hygiene behaviour improvements is identified by decreasing disease episodes at the endline compared to baseline. 35.2% of the beneficiaries reported that at least one household member suffered from any disease, which is significantly lower (46.1%) than the baseline. The incidence of water-borne disease decreased almost 4 percentage points (down to 3.3% from 7.2%). The decrease in disease episodes decreased 27% of the average health expenditure while increasing income by 5%.

**Return on Investment (ROI):** Analysis indicates that within the project period, the WASH benefits contributed to a 16% reduction in employee absenteeism, a 7% reduction in staff turnover, a 40% improvement in rejection rate, and a 12% increase in productivity. These improvements created an overall positive return of the investments. The trends in absence and leaves have decreased; overall, there is a 2.5% decrease in paid leaves, an 4% decrease in sick leaves (associated with the decreased incidence of disease), 7% decrease in sick leaves since baseline due to project activities. The rejection rate is down to one-third compared to baseline. The cost of the health facility at the factory also shows a decreasing trend. However, the staff turnover does not show a steady decrease since baseline. But the productivity shows a great improvement.

The results from the three factories provide different perspectives and results. Within the programme period, only Fakir Fashion shows a positive ROI. However, the overall ROI within the programme period is positive indicating benefit of the WASH activities within the factories; and every 1 USD invested in the programme, the average return is USD 1.2 ranging between -5.4 and 9.0. The overall projected ROI (estimate) after 10 years post intervention, increases five fold. In 10 years, the every 1 USD investment generates a return of USD 6.3 raging between USD -9.0 and 30.0. The cumulative business benefits in 10 years combining all factories is estimated as 529 Million BDT ($6.2 million).

**Conclusion:** The combined impact of safe water, good sanitation, and proper hygiene practices significantly changed people's health and socio-economic conditions and contributed to the business benefit of the RMGs. It is foreseen that the long-term impacts benefit the RMG sector and the overall socio-economic conditions of the workers and, in extension, the community. The activities of the RMG sector can play a pioneering effect on other sectors leading to overall social development towards improved living standards.

The overall return on investment of the project is positive, and indicates that the WASH intervention/ investments can be beneficial for the RMGs in Bangladesh. The financial analysis also indicate that the overall benefit can increase five fold in 10 years (compared to the first 2 years) preceding the programme activities. The project findings confirm that the WASH interventions can lead to business benefits for RMGs and with a very small amount of resources (maintenance and orientation cost), the benefit can be carried out for decades. The WASH interventions by the factories can be an adaptable solution to improve the living standards for the RMG workers. The activities of the RMG sector can play a pioneering effect on other sectors leading to overall social development towards improved living standards.

The WASH infrastructure development should be well planned for a period of more than 10 years and the overall activity should include consistent reminder on the hygiene behaviour and practices as like this programme adopted. At the urban level, replication of this project can lead to sustainable livelihood development among the people living in low-income settlements. This project can be expanded at a national level where the largest RMG groups can be the direct stakeholders making contributions alongside the donors while BGMEA acts as the liaison.

## Table of Contents

Executive summary & Table of Findings ..... i
Abbreviations ..... vii
1. Introduction ..... 8
1.1 Introduction ..... 8
1.2 Objectives of the Assignment ..... 8
2. Methodology ..... 10
2.1 Primary Data ..... 10
2.1.1 Methods and Sampling for Primary Data ..... 10
2.2 Secondary Data ..... 13
2.2.1 Treatment of Secondary Data ..... 13
2.3 Measuring Business values ..... 14
2.4 Survey Implementation ..... 16
2.5 Assumptions, Challenges and Mitigation ..... 16
3. Brief Context ..... 17
4. WASH Context and Intervention Details ..... 18
5. Outcome and Impact Pathway ..... 22
6. Key Findings - Rethinking the value of WASH interventions in supply chains ..... 24
6.1 Discussion and Analysis of Demographic Data ..... 24
6.2 Discussion and Analysis of WASH Indicators ..... 26
6.2.1 Community Level Changes ..... 26
6.2.2 'Factory Intervention' Compared to 'Full Intervention' ..... 34
6.2.3 Factory Level Changes ..... 36
6.2.4 Changes Contribution to Project Activities ..... 43
6.2.5 Findings from Factory Observation (Handwashing Practice and WASH facilities) 44
6.2.6 Rainwater Harvesting System (RWHS) ..... 45
6.3 ROI and business findings, and links to WASH indicators ..... 46
6.3.1 Summary table on ROI and business indicators ..... 46
6.3.2 Discussion and analysis of Business Indicators of ROI ..... 47
6.3.3 Discussion and analysis of business indicators ..... 47
6.3.3.1 Project Cost ..... 48
6.3.3.2 Attrition to Project Activities ..... 49

6.3.3.3 Reduced Employee Absence ..... 49
6.3.3.4 Improved Quality ..... 50
6.3.3.5 Reduced Staff Turnover ..... 51
6.3.3.6 Increased Productivity ..... 51
6.3.3.7 Rainwater Harvester ..... 52
6.3.3.8 Health Expenditures by the Factory ..... 53
6.3.4 ROI within Project Period ..... 53
6.3.5 ROI and business value trends ..... 54
6.4 Social Return ..... 59
6.5 Case studies ..... 62
7 External Factors ..... 64
7.1 Impact of COVID-19 on ROI ..... 64
7.2 Annual Variation in Market Demand and Supply ..... 64
8 Key learnings and Conclusion ..... 65
8.1 Key Learning ..... 65
8.2 Conclusion ..... 66
9 Appendices ..... 67
Appendix I: Return on Investment (ROI) Formula and Business Indicator Formulas ..... 67
Appendix II: Data Tables ..... 72

# Abbreviations

| | |
|---|---|
| BDT | Bangladeshi Taka |
| BGMEA | Bangladesh Garment Manufacturers and Exporters Association |
| EPB | Export Promotion Bureau |
| ESQ | Esquire Knit |
| FF | Fakir Fashion |
| FGD | Focus Group Discussions |
| FHM | Food Hygiene Management |
| GD | Group Discussion |
| GoB | Government of Bangladesh |
| HH | Household |
| HDRC | Human Development Research Centre |
| JMP | Joint Monitoring Programme |
| KII | Key Informant Interviews |
| MHM | Menstrual Hygiene Management |
| PA | Public Address |
| RMG | Readymade Garments (RMG) |
| ROI | Return on Investment |
| RWH | Rainwater Harvesting |
| SDG | Sustainable Development Goal |
| TVC | Television Channel |
| USD | US Dollar |
| WASH | Water Sanitation and Hygiene |
| WSP | Water Safety Plan |