

Impact of Water Interventions under WASH Program in the South-west Coastal Region of Bangladesh

Authors : S. M. Ashikur Elahee, Md. Zahidur Rahman, Md. Shofiqur Rahman

Abstract : This study evaluated the impact of different water interventions under WASH program on access of household's to safe drinking water. Following survey method, the study was carried out in two Upazila of South-west coastal region of Bangladesh namely Koyra from Khulna and Shymnagar from Satkhira district. Being an explanatory study, a total of 200 household's selected applying random sampling technique were interviewed using a structured interview schedule. The predicted probability suggests that around 62 percent household's are out of year-round access to safe drinking water whereby, only 25 percent household's have access at SPHERE standard (913 Liters/per person/per year). Besides, majority (78 percent) of the household's have not accessed at both indicators simultaneously. The distance from household residence to the water source varies from 0 to 25 kilometer with an average distance of 2.03 kilometers. The study also reveals that the increase in monthly income around BDT 1,000 leads to additional 11 liters (coefficient 0.01 at $p < 0.1$) consumption of safe drinking water for a person/year. As expected, lining up time has significant negative relationship with dependent variables i.e., for higher lining up time, the probability of getting access for both SPHERE standard and year round access variables becomes lower. According to ordinary least square (OLS) regression results, water consumption decreases at 93 liters for per person/year of a household if one member is added to that household. Regarding water consumption intensity, ordered logistic regression (OLR) model shows that one-minute increase of lining up time for water collection tends to reduce water consumption intensity. On the other hand, as per OLS regression results, for one-minute increase of lining up time, the water consumption decreases by around 8 liters. Considering access to Deep Tube Well (DTW) as a reference dummy, in OLR, the household under Pond Sand Filter (PSF), Shallow Tube Well (STW), Reverse Osmosis (RO) and Rainwater Harvester System (RWHS) are respectively 37 percent, 29 percent, 61 percent and 27 percent less likely to ensure year round access of water consumption. In line of health impact, different type of water born diseases like diarrhea, cholera, and typhoid are common among the coastal community caused by microbial impurities i.e., Bacteria, Protozoa. High turbidity and TDS in pond water caused by reduction of water depth, presence of suspended particle and inorganic salt stimulate the growth of bacteria, protozoa, and algae causes affecting health hazard. Meanwhile, excessive growth of Algae in pond water caused by excessive nitrate in drinking water adversely effects on child health. In lieu of ensuring access at SPHERE standard, we need to increase the number of water interventions at reasonable distance, preferably a half kilometer away from the dwelling place, ensuring community peoples involved with its installation process where collectively owned water intervention is found more effective than privately owned. In addition, a demand-responsive approach to supply of piped water should be adopted to allow consumer demand to guide investment in domestic water supply in future.

Keywords : access, impact, safe drinking water, Sphere standard, water interventions

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