

Sky-blessings to Quench Thirst



Bangladesh is blessed with high amount of annual rainfall. Considering the people's plight in accessing safe drinking water in different parts of the country, NGO Forum has been giving its special efforts in order to ensure safe water supply. The Forum has been innovating and promoting different water supply options that are affordable, compatible and feasible to geophysical conditions of different difficult & vulnerable areas. As part of it, the Forum has been promoting the Rain-water Harvesting System (RWHS) at household and community levels taking the natural blessing especially of the coastal, hilly and haor areas' hydro-ecological context into consideration.

In the coastal areas, especially in the south-west coast of Bangladesh, it is widely experienced that Shallow Tubewells are not feasible due to excessive salinity in groundwater. Saline water encroachment in both surface water bodies and groundwater aquifers is the main constraint for fresh water supply in the coastal belt. Among the feasible options, the community people are reluctant to go for other cost-consuming water supply options. It is also very difficult to get a big, neat, clean and hygienic pond at the community level since ponds are leased out and used for fish culture. Again, in the hilly region its rocky soil texture is a barrier to installing Tubewells. There are no other alternative water supply options at household levels forcing the hilly community people to drink unsafe water of springs flowing across the Hills. The haor zone is blessed with plenty of rain while other alternative options are not that much feasible due to different geo-hydrological limitations. In these regions, NGO Forum is playing a potential role in promoting the scientific way of preserving and using rain-water for drinking and cooking purposes.

Rain-water Harvesting System: The Rain-water Harvesting is an option, which has been adopted in many areas of the world where conventional water supply systems are not available or have failed to meet the needs and expectation of the people. The rain-water is free from arsenic contamination and the physical, chemical and bacteriological characteristics of harvested rain-water represent a suitable and acceptable means of potable water.

Our Life is in This Tank

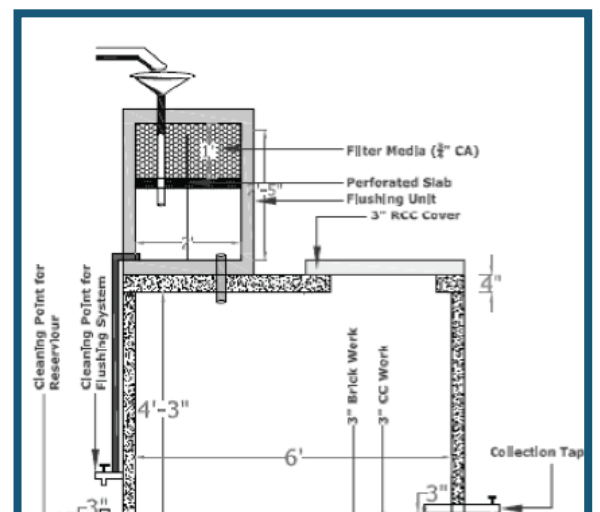
The RWHS installed within 55-year old Sabita Mandal's house premises holds the key to her well-being. It is a community-based RWHS from which 9 families are taking water. Water is collected from the Bengali month of Jayshta (May) to the end of monsoon. Water crisis is at peak during the months of Magh (January) to Jayshta (May) while there is not a drop of sweet water available in the entire area. Every pond of the village is used in shrimp cultivation. In those difficult times, only 5 pitchers of water is distributed in a week for each family. The families use the water for only drinking purpose then. In this way, they are managing to reserve water round the year. In Sabita's words, "I am a surgery patient. This water keeps me well. I have to have it all year round. I feel great affection to this tank, as our lives are in it."



The Technology

Rain-water Harvesting System (RWHS) is a technique of water collection, which has been used since antiquity. The RWHS has different components like catchment for harvesting water, gutter to flow the water in a particular direction, flushing system to flush out the dirty water, storage tank to store harvested water, collection point to collect water and drainage pipe to clean the storage tank. Different types of Rain-water Harvesting Plants in terms of size, shape & materials are being developed and installed to make the system affordable to all.

Ferro-cement tank is used to make the Plant low-cost. An easily operated flushing system of 38 mm dia PVC pipe along with GI elbow and end cap is used. The design of flushing system is suitable and adequate to flush the first foul rain-water. Storage tank is kept covered to protect dust and entrance of sunlight directly that causes growth of bacteria (TC/FC) and algae. A simple drainage pipe is used to clean the storage tank. CI sheet catchment is used in the RWHS because run-off co-efficient of CI sheet is higher than other roof materials. The catchment size is selected considering the rainfall intensity and tank size is made according to the per capita consumption, family size catchment area, etc. The tank size is calculated for the amount of water to be required in dry period. A simple and easily operated tap is used to collect water from the tank.



RWHS is in high demand among the Neighborhood



Amarendra Chakma's (36) family now has drinking water around the year. His 3,200-litre capacity RWHS has been running strong and serving drinking water for his family and passersby for the last 6 years. Also the school children stop by to drink water while returning home. The water is available during the dry periods of Ogrohayon (November) to Chaitra (April). It would have lasted longer if not for the school children. In Amarendra's words, "At least ten to fifteen school children and passerby stop to drink water everyday. In the hills, it is not possible to say no to a thirsty person. My daughter and wife do not have to go down the hills to the lake for collecting water anymore. In one word, the technology is very good."

The Technical Distinctness of RWHS

- Provides with acceptable quality of drinking water;
- Relatively cheap materials can be used for construction;
- Maintenance cost is low as well as easy for the community and families;
- Construction is done with locally available materials making it affordable for the community;
- Offers user-friendly operation;
- Ensures preservation of safe water for drinking purpose;
- Collected rain-water can be consumed without treatment;
- Affordable O&M contributes to extend the technology's sustainability.

They are Free from Water Poverty

Basanti Mandal (60) has managed to save some money to buy fishing net. Widow Basanti along with her two daughters and a son live in Kalikabari village of Chadpai union, Mongla, Bagerhat. Adding to their miseries is the return of her elder daughter Anumati Mandal whose husband went to India after just 12 days of their marriage and never came back. Basanti and their children earn their day to day living by day labouring, working in other people's house and fishing. This poorest family had to spend Tk. 600 per month and a huge time for collecting 30 litres' of water compromising with the time for day labouring or fishing. Basanti says "In this locality nobody is meager than us. The whole water collection process was a big mental pressure and financial burden for me as a family head". Through CBO initiative, a RWHS was set up at Basanti's residence. Now the family is free of worrying about drinking water. It has released some of their distress and economic burden.



Community Ownership and Sustainability

With drought conditions prolonging the Rain-water Harvesting System is valued as an essential asset of a community or household. Information regarding sustainability of the option, field experiences from different geo-hydrological zones shows that these survive around decades.

Secured-system for Sustaining the Water Point

The 6-member Water Point Management Committee is running the 10,000-litre-capacity community-based RWHS installed in 2013 in a sustaining manner. The 6 members are from six different households of the water point user group residing in highly saline-prone Brahman Math village in Chandpai union, Mongla of Bagerhat where crisis for sweet water is massive. Md. Rabiul Islam, a committee member mentions, "We have fixed certain rules based on mutual understanding. We have made a regulation on a 100-taka stamp note on which the rules have been undersigned by all the committee members. This has made it official". Md. Sohrab Mollah, another member of the Committee added, "Our Ward Member has signed in it as our Witness and we shall preserve a copy of the stamp note at the UP office and SEBA (NGO Forum's implementing partner in the area). In this way, there will not be any disputes centering the usage of the water point as well as its overall management for saving it from the brunt of natural disaster".



Scope of Scaling-up

The people especially of coastal zone have been traditionally collecting rain-water from their roofs and storing it into large pots locally called 'matka'. But the indigenous form of rain-water collection has neither fulfilled their water thirst, nor is it safe in terms of quality. This improved form of RWHS has brought safe and scientific way to collect and store rain-water for drinking purpose for at least four dry months of the year. Due to its easy operation and low maintenance cost, the technology is now in high demand among the water-scarcity areas. The RWHS has turned into a blessing for the poor households and they consider it as their valuable asset. NGO Forum's rich experience in promoting RWHS proves it as a viable and sustainable drinking water option.



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