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Sustainable drinking water: Aila's enduring effects

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AILA made a devastating strike at the coastline of Bangladesh more than five years ago. The affected regions still remain scarred from its ravages. An unforgettable nightmare for the local people, Aila took their lives, property, and livelihood, and damaged the ecosystem, while affecting land fertility and drinking water sources. The Centre for Climate Change and Environmental Research (C3ER), BRAC University, conducted a study in the coastal areas of Bangladesh to investigate the current scenario of safe drinking water there. The study collected data from six villages of Satkhira, Khulna, Bagerhat, Barguna, Patuakhali and Pirojpur district. A total of 758 households were surveyed.

While the local people have painstakingly rebuilt their lives, their access to drinking water sources has been severely damaged. Salt water entered their ponds and made the water unfit for drinking. Thus there are limited sources of reliable water supply in the study area. Pond water is very popular in the local community; however its quality remains unmonitored and questionable. Unfortunately, very few initiatives have been taken by the government or non-government organizations to investigate the quality of pond and tube well water in the study area.

Around 96% of total people surveyed do not have any tube wells of their own; most of them collected drinking water from their ponds. In fact many used to drink water from the canals in Bagerhat, Patuakhali and Pirojpur. However, in the Ashan Nagar and Char Nimdi village, local people depend on other sources like tube well, rain water harvesting, pond sand filter (PSF), etc. Unfortunately these sources are widely dispersed. Rain water harvesting for drinking

purposes is now becoming more common. Those who have a sufficient numbers of water containers can harvest rain water during the wet season. But the poor people cannot use this method of water storage because of the financial implications. A possible strategy here is to build community based rain water harvesting systems to ensure good quality drinking water for the poor people.

People also have to travel long distances in order to collect water. Out of the total population studied (i.e. around 8,576 people), 28% collect water from a distance of 201 to 500 meters. More than 40% travel greater distances for the same purpose.

During a natural disaster like flood, storm surge or cyclone, the villagers become highly vulnerable in terms of drinking water. The greatest problem at this time is the collection of water from far way as the sources of drinking water are damaged and the existing road network is also washed away. Wastage of time is thus a major burden. All road networks, especially in Satkhira district, went under water immediately after Aila. Besides, in Bagerhat, Barguna and Patuakhali districts some people collected water by using boats. In most cases children are the ones who are made to collect water using boats.

People also use pitchers made from metal or plastic bottles to collect water. Though clay pitchers are a safer medium for water storage, their suitability is questionable for reasons of durability or fragility. Very few people thus use clay pitchers for collecting water. Chemical treatments like using fitkari (potash alum), chlorination and iodine tablets are also popular practice in rural areas. Especially in areas where natural gas is not available as fuel, people prefer using fitkari (alum) for water purification. Deep tube wells serve as a drinking water source in Bagerhat and Khulna districts, while in some areas of Bagerhat, Khulna and Barguna district local people purchase water from solar based PSF system. People from other districts are also aware about the PSF system and are willing to pay for safe drinking water.

There are both old and new styles of drinking water gathering technologies in use in the six study villages which include using ponds, tube wells, rain water harvesting, PSF, and solar-based PSF. However, blending indigenous and modern technologies has been working well (e.g. solar-based PSF and rain water harvesting systems). Moreover, in the coastal region there is no community based organization to ensure safe drinking water for all. Our study found that ownership is the primary reason. Nobody owns the community based water supply system, even those provided by GOs or NGOs. There are fewer than 3% of the households in the six districts that have taken collective initiatives to preserve drinking water.

Due to poor socio-economic condition, lack of education, and lack of rural institutions, the responsibility of providing water for the households primarily lies with the government and the NGOs. In fact, the activities of NGOs are also limited to easily accessible places, while the remote areas are completely neglected. Moreover the coastal areas are disaster prone. Thus, after any catastrophic event, most of the water sources become unusable. Hence, it is very difficult for the community people to keep them from becoming vulnerable. If solar based PSF water can be supplied through pipes to different collection points, people will pay for the facility. They can form a management committee where community people will be engaged in monitoring and maintaining solar-based PSF systems. Community-based organizations should be strengthened and ownership should be encouraged in these areas to improve the current situation of drinking water sources. Experts aver that the effects of catastrophic events like Aila, which are sure to recur, can endure for a long time horizon. This requires thinking of innovative and resilient water storage systems both at the technical and human community levels to mitigate their devastating effects.

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