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Potential of using Rainwater as a Source of Drinking Water in the Anuradhapura District of Sri Lanka

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Abstract

Despite the fact that the drinking water coverage in Sri Lanka is 94%, the rest of the 6% is mostly concentrated in the rural areas. Some people in such areas consume water by purchasing it from vendors who transport water in very unsanitary plastic containers, by walking more than two km, or from rivers, streams or unprotected wells. The bimodal rainfall pattern invites the population to store water if possible at times of rain. Rainwater harvesting in that sense is not new to Sri Lankan rural communities. However, the rainwater harvesting has been a practice of convenience rather than a system of continuous supply. The possibility of using harvested rainwater water as a source of drinking water has not been adequately studied. Thus, the aim of the study was to investigate the potential use of harvested rain water as a source of drinking water in Anuradhapura district. The study selected two Grama Niladari divisions; Madawachiya and Kabithigollawa, where the water scarcity cause a heavier burden among the community. The study analysed the water quality (chemical and biological) parameters such as pH, electrical conductivity, turbidity, total dissolve solids, *E. coli* and coliform in 10 samples from each two selected study areas. Then a survey was conducted to collect primary data to investigate the preference towards the rainwater harvesting and using rainwater as a drinking water source with 50 randomly selected households from each division. The results show rain water samples collected from both areas meet required WHO standards of chemical and biological properties of drinking water. Survey results revealed that people in both areas preferred to have rainwater harvesting system for drinking water. The people in the areas equally prefer either to boil or filter harvested rainwater before drinking. This study shows that rainwater harvesting has a good potential to overcome the drinking water scarcity problem in rural areas at least for a certain extent.

Keywords: Rain water, Water scarcity, Drinking water, Sensory