

## The Sustainable use of Household Roof Top Rainwater Harvesting System in Ampara District, Sri Lanka

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**Abstract:** This study was conducted at three Tsunami resettlement villages namely Kalugolla, Thandiyadi, Kavadippiddi in the Ampara district, Sri Lanka to find the present status and sustainability of the rain water harvesting project that are implemented immediately after the Tsunami. Total number of households with the rainwater harvesting tank is 194 in those three villages. Information was gathered from 75 households (25 households in each village) using a structured questionnaire, personal interview, direct observation and the secondary data were also collected from relevant departments. Descriptive statistics were used to analyse the results using Statistical Package for Social Sciences (SPSS). The study revealed that, the availability of water in most of the rainwater harvesting tank is limited to 8 months (October to May). As far as the usage of water from rainwater harvesting is concerned, about 4% of the people are using the rainwater harvesting tank only for the drinking purpose, at the same time 40% of the people are using for drinking, toilet and cleaning purpose. Similarly, 52% of the people are using in the rainwater harvesting tank for the multipurpose such as drinking, toilet cleaning, washing and for irrigation. The results show that maintenance and usage of these tanks were good in most of the houses in the study areas even without the monitoring team of the implementing organizations. Nearly 67.3% of the people are maintaining the tanks well for the drinking purpose whereas only 4% of tanks and pipe lines are damaged by children and livestock. However, it was found that, the people from Thandiyadi are not utilizing the water from rainwater harvesting tank for drinking purpose in most of the days due to the introduction of water supply scheme by the National Water Supply and Drainage Board (NWSDB) to that area. Though the project is not successful at present in Thandiyadi village, it served a lot to the people residing in that area in providing drinking water immediately after Tsunami. The rainwater harvesting project is successful in other areas because, they do not have any alternative source for drinking water. However, the capacity of existing tanks is insufficient to store rainwater to meet the drinking water demand during dry period. The people from these areas are collecting water from tube well that are located from neighbouring villages during dry period. The quality of the harvested rainwater has never been checked in these villages. Therefore, it is necessary to check the qualities of water periodically or to fix the filters with regular maintenance are very important as far as their health is concerned. A complete study of the areas including groundwater potential and possibilities for future pipe born water supply, length of dry spell and potential family size should also be considered in selecting the location during planning and implementation of the rainwater harvesting tank to the success of it.

**Keywords:** Rainwater Harvesting, Water supply, Water quality, Ground Water