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Usage of groundwater resources in some tsunami affected areas of the Indian Ocean tsunami after 2 years: A case study from Southern Sri Lanka

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The extent and magnitude of groundwater pollution that occurred as a result of the Tsunami on 26 December 2004 in Southern Sri Lanka were studied. Almost all the open dug wells in the affected zone were excessively damaged and groundwater resources were heavily polluted by salt water intrusion. Tsunami caused extensive damage to the entire aquifer system. Prior to the tsunami groundwater in the southern coastal margin was non-saline and was used by the people for drinking and other domestic purposes. The bacteriological pollutants and many other toxic pollutants on the earth surface along with seawater have severely contaminated the groundwater resource. A Questionnaire survey was conducted among 242 tsunami affected households in the Matara District during October - November 2006, 23 months after the tsunami. The tsunami affected coastal areas occupied two thirds of the coastal belt and covered a distance of one to two kilometers. The main objective of the questionnaire survey was to understand the changes of groundwater usage patterns that have taken place in domestic use over the two years following the tsunami. The number of wells used for drinking purposes was reduced by 52 %. The relative proportion of neglected wells (not used for any purpose) was 7 % at the end of 2006, which amounts to a seven fold increase (746%) when compared with the situation prior to the tsunami. Usage of well water for industrial purposes increased considerably due to the expansion of small-scale livelihood industries in the area with rehabilitation projects initiated by foreign and local NGOs. The proportion of wells that were used for purposes other than for drinking (e.g. washing, bathing, livestock, etc.) increased by 33.37% in comparison to usage prior to the tsunami.

Authors acknowledge the financial assistance from the National Science Foundation.

Keywords: aquifer, salinity, tsunami, contamination, recharge