Hydrological Assessment in Polwathumodara River Basin and its impact on community development –Sri Lanka

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Groundwater is of major importance in providing water supply to the fields in the river basin areas in terms of economic and social health of population, especially in the developing world. The main objectives of the study identify the groundwater quality changers with river water and its impact on community. Groundwater monitoring in the Polwathumodara River Basin was conducted during December 2006 to January 2007 to determine the hydrogeological conditions by selecting 32 (thirty two) dug wells where water level, electrical conductivity (EC), total dissolved solids (TDS), Salinity and pH was measured in monthly interval. Shallow unconfined aquifer could be identified in the study area.

The groundwater table of the study area distributed 1.86m below mean sea level to 3.70m above mean sea level. EC, TDS and Salinity were decreased with the increment of the distance perpendicular from river bank. Also the same water quality changing pattern obtained along the upstream of the river. As a result of the variations in EC the groundwater quality in river bank area showed an increase of salinity in dug wells. The highest EC value in groundwater was found (1400 micro Siemens per centimeter) near the sea and the lowest EC value was found (126.3 micro Siemens per centimeter) in river basin area. The groundwater salinity increase directly affected the urban community development in the River bank area.