Assessment of Ground Water Quality Influences on Human Health and Agriculture: A Case Study in Pakistan

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Abstract
Groundwater contamination through toxic metal/elements has a considerable impact on public health and agriculture in the areas of Pakistan, where majority of the people rely on groundwater for drinking purposes and agriculture. Taking this situation into consideration, groundwater samples from 119 public places in flood affected areas of the district Sanghar of Pakistan were investigated for physico-chemical parameters, essential metals and trace elements (color, odor, pH, electrical conductivity (EC), turbidity, chloride (Cl), alkalinity, nitrate (NO_3), sulphate (SO_4), TDS, calcium (Ca), magnesium (Mg), sodium (Na) and potassium (K)), trace elements (iron (Fe), zinc (Zn) and arsenic (As)). Chemical analysis data showed that 55, 41, 08, 33, 32, 16, 55 and 46% water samples were having high concentration of Hardness, Ca, Mg, Cl, Na, K, SO_4 and TDS respectively. Trace elements such as Fe, As and Zn were also high in 49, 26 and 9 % samples respectively. Due to the elevated levels of above parameters, it can be concluded that groundwater could pose a serious threat to the health of the people residing the area and the agricultural soils.

Keywords: Groundwater quality, Agriculture, Health risk, Trace metals, Sanghar
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