An overview of groundwater and sanitation challenges in Kisumu City, Kenya

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Abstract

Shallow wells provide freshwater to billions of people worldwide who are not connected to the piped water supplies. The source is also the main alternative when piped supplies are either intermittent or unavailable. In many low-income cities and peri-urban areas in the tropics, these shallow wells are hand dug and typically less than 20 metres in depth; this same sub-surface environment is also used as a repository of human waste. Here, we report on groundwater and sanitation challenges in the city of Kisumu, Kenya based on a rapid survey, sampling, interviews, existing literature review and historical borehole data conducted under the *AfriWatSan* project.. Previous studies in the area have shown that the number of shallow wells, buildings, density of unimproved pit latrines, and sanitary risks have increased tremendously over the last two decades. Most of the wells are shallow and therefore prone to contamination by pollutants. Fluoride and chloride concentrations in most borehole discharges exceed recommended WHO maximum values and the local KEBS standards. We further confirm that the main water and sanitation challenges in Kisumu are poor and deteriorating water quality, poor waste disposal management systems and poor sanitation services. T there is need for the introduction of new and sustainable groundwater approaches supported by scientific models and involving all stakeholders. Current deficiencies in the provision of adequate water and dignified sanitation to the

poor in Kisumu can be remedied through improved knowledge on shallow aquifer dynamics and innovative research. It was noted that apart from the donor agencies and multi-national NGOs, the private investors are unwilling to invest in water projects in Kisumu due in part to government legislation that constrains the cost that may be levied for water..

Key words: Kisumu, Groundwater, wells, water pollution and sanitation