

Assessment of groundwater quality in Vihiga County, Kenya

Vihiga County does not have a sewerage system and therefore people rely on onsite sanitation system. Poorly designed and located on-site sanitation systems are potential threats to groundwater which is the main source of supply. Therefore, this study examined the water quality of dug wells located near pit latrines in the Sabatia sub-County in Vihiga County. Water samples were collected from 48 dug wells and both the physiochemical and bacteriological components of water were analyzed. Some of the physio-chemical parameters of water analyzed from the various dug-wells did not meet the national drinking water standards. The bacteriological analyses showed that the water was contaminated with total coliforms and fecal coliforms. The high values of fecal coliforms in the water samples could be attributed to the presence of the pit latrines and the sanitation around the dug-wells. The presence of these bacteriological indicators suggested that the water is harmful to human health if consumed untreated. Results show that three locations; Chavakali, North Maragoli, and Busali had higher water quality index as compared to the other three locations. Notably, we found that beyond a distance of about 30 m bacteriological variation of the water samples was insignificant. Achieving sustainable development goals on water for all is a mirage in the County if interventions are not put in place.

Authors

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