

ABSTRACT

This project aims to conduct a comprehensive assessment of groundwater resources in Naivasha town, Kenya, with a focus on understanding the hydrogeological characteristics, water quality, and sustainability of the aquifers. Naivasha town, situated in the Great Rift Valley, relies heavily on groundwater for domestic, agricultural, and industrial purposes. However, rapid urbanisation, agricultural expansion, and industrial activities have raised concerns about the depletion and contamination of groundwater sources. The methodology involves a combination of field surveys, hydrogeological investigations, and water quality analyses. Geophysical surveys, including resistivity and seismic methods, will be employed to delineate subsurface geological structures and aquifer properties. Groundwater monitoring wells will be installed to assess groundwater levels and quality parameters such as pH, electrical conductivity, major ions, and trace elements. Furthermore, the project will investigate potential sources of contamination, including agricultural runoff, industrial discharge, and improper waste management practices. GIS-based mapping techniques will be utilised to spatially analyse the distribution of groundwater quality parameters and identify vulnerable zones. The outcomes of this study are expected to provide valuable insights into the current status of groundwater resources in Naivasha town, facilitate sustainable water resources management practices, and inform policy-making decisions. Additionally, the project will contribute to enhancing community awareness about groundwater conservation and pollution prevention measures. Ultimately, the findings aim to support the development of strategies for the protection and sustainable utilisation of groundwater resources in Naivasha town and similar regions facing similar challenges globally.