

ABSTRACT

This project aims to carry out a water quality analysis of River Riara in Kiambu County with a focus on determining the suitability of the river for various uses and determining the presence of pollutants and contaminants in the river. The study involves collecting water samples from various locations along the river and analyzing them for a range of physicochemical parameters.

Water samples were collected at regular intervals over a month period, encompassing different seasons and potential variations in water quality. The physicochemical parameters examined include pH, dissolved oxygen (DO) levels, biochemical oxygen demand (BOD), chemical oxygen demand (COD), total suspended solids (TSS), total solids (TS), fluorides and turbidity.

The obtained data were compared to established water quality standards and guidelines set by the World Health Organization (WHO). Analysis was performed to identify the pollution trend and potential pollution sources along the river.

The results of the water quality analysis indicated that certain sections of River Riara exhibited elevated pollution levels, primarily attributed to domestic discharges biological waste runoff. The increased concentrations of pollutants, along with low DO levels suggest a potential negative impact on the river's ecosystem health. Mitigation measures were suggested with key emphasis on the role of man in improving and maintaining the health and quality of rivers. Conclusions and recommendations based on the objectives of the project were made at the terminal phase of the project.