

ABSTRACT

Drinking water is one of the most valuable resources that we need for survival. Water has a variety of physical, chemical and biological qualities that are essential for the existence of life. All form of life depends on water. Water resources such as rivers, lakes, oceans and streams are the primary sources of water that we as human beings depend on. However, these sources are at times faced with the challenge of pollution, especially from its dependents, who are the people.

To investigate the effects of pollution of water resources, a water quality analysis of Kalundu River and Dam was carried out, which is located in Kitui Central constituency. Kalundu River is a river that passes through Kitui town, and where the population uses water from the river for various purposes, including home use, irrigation, and fishing among other uses.

A variety of physicochemical parameters were investigated, including pH, temperature, dissolved oxygen (DO), biochemical oxygen demand (BOD), chemical oxygen demand (COD), turbidity, electrical conductivity (EC), and total dissolved solids (TDS). The study also included microbiological tests, which focused on the presence of coliform bacteria as indicators of potential contamination.

According to the findings, there are seasonal variations in the water quality of the Kalundu River and Kalundu Dam. During the wet season, there are higher levels of pollutants in the water due to runoff and agricultural activities. Several parameters, including turbidity, BOD, and coliform counts exceeded the World Health Organization (WHO) guidelines for safe drinking water. This raised concerns about possible health risks to the local communities.