

## Abstract

Availability of water in quantity and quality affects economic growth. The aim of this study was to assess water resource conservation under fluctuating inter-annual rainfall regimes in Imenti North District, Kenya. Unsustainable use of water resources has drastically affected the volumetric flows of Ngaciuma/Kinyaritha River rendering some of its tributaries seasonal. This has adversely affected accessibility to adequate water for both domestic and agricultural use. A study was carried out to understand the adoption levels of water conservation practices in Imenti North. The influence of water resource accessibility on adoption of water conservation (WC) practices and constraints were assessed. Primary and secondary data were utilized. Descriptive statistics was used to analyse socioeconomic parameters. Regression, correlation and spearman's t- test were used to compare the relationship between variables. Tree planting, roof catchment and bench terraces were the major WC practices in use. Multiple regression analysis revealed that lack of technical knowhow could explain 83.5% variations of adoption level of WC practices. One sample t-test comparing the means of WC practices among respondents' was significant at  $P < 0.01$ . Spearman's rank test revealed a decreasing trend during the long rains (March-May) for the period 1986-2008 at  $P < 0.05$ . The disparity between the level of adoption among water users coupled with the decreasing seasonal rainfall calls for urgent and better management of water resources in the study area.