

## **Heavy metals in sediments from Makupa and Port-Reitz Creek systems: Kenyan Coast.**

### **Abstract**

Copper, zinc, lead and cadmium heavy metals were determined in sediments from the Kenyan Coast. Sediment samples were obtained from Makupa and Port Reitz Creek systems. The samples were digested using concentrated hydrochloric acid and the metal content determined using Atomic Absorption Spectrophotometer (AAS). The method of analysis was evaluated using Soil-7 certified reference material (International Atomic Energy Agency, IAEA). For comparison, sediment samples were also analysed using Energy Dispersive X-ray fluorescence technique and results obtained show good agreement. Higher metal concentrations were obtained in Makupa Creek sediments (Cu, 102 $\pm$ 46.0; Zn, 1017 $\pm$ 840; Pb, 103 $\pm$ 35.8; Cd, 51.0 $\pm$ 14.3) as compared to Port Reitz Creek system (Cu, 21.6 $\pm$ 7.1; Zn, 57.1 $\pm$ 17.9; Pb, 26.2 $\pm$ 11.6; Cd, 1.38 $\pm$ 0.7). There was significant ( $p=0.05$ ) variation in the elemental concentrations between and within sites. Industrial activities and a nearby municipal dumpsite were associated with the higher elemental concentrations particularly in Makupa Creek.