

Marine sediments (n=90), seawater (n=30) and several species of sea plants (n=151) along the Mombasa coastal region (English Point, Nyali bridge, Kenya meat commission, Makupa creek, Port Reitze, Vanga, Ramisi, Diani beach, Mtwapa creek and Marine park) were sampled with an aim to determine the levels of heavy metals and organochlorine pesticides. Heavy metals were determined by use of Atomic Absorption Spectrophotometry and Energy Dispersive X-Ray Fluorescence. Organochlorine pesticides were determined by use of Gas-Liquid Chromatography with electron capture detector.

In marine sediments collected at a depth of 5 cm below the seabed, there were high levels of manganese (1100.02 mg/l) at Vanga, zinc (347.70 mg/l) at Makupa Creek and titanium (5860.11 mg/l) at Ramisi compared to other study sites. In sea plants, lead was found in all species with *Ulva reticular* recording the highest level of 66.98 mg/l at Makupa Creek. Zinc (139.40 mg/l) was highest in *myrica* species from Nyali Bridge. In seawater, the heavy metals were detected in levels lower than those of marine sediment and sea plants. However, they were higher than those considered as natural in the ocean and the range was 0.01-13.5 mg/l. A comparison with a study taken in South Australia reveals that the study area is at risk by these pollutants.

Organochlorine pesticides detected in marine sediment were hexachlorobenzene (BHC), 0.014 mg/l (English point), BHC, 0.025 mg/l and endosulfan, 0.322 mg/l (Nyali bridge) and BHC, 0.032 mg/l and aldrin, 0.134 mg/l (Kenya Meat Commission). In sea plants BHC ranged from 0.045-2.571 mg/l while aldrin was only detected in *sargassum* species 0.076 mg/l and *padini* species 0.087 mg/l at Nyali Bridge and vanga respectively.

The study also aimed to study the trend (profile) of these pollutants. This was found to be random along the Coast of Mombasa Island. However, the trend of concentration of these pollutants in ascending order in seawater, marine sediment and sea plants was observed.