# LEVELS OF POLUTION AT THE SAKUMO RAMSAR SITE HYDROCHEMISTRY AND HEALTH RISK ASSESSMENT

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## ABSTRACT

This research was carried out to assess the level of pollution with emphasis on heavy metals contamination and their distribution in the Sakumo wetland, which is being polluted by industrial, domestic and urban runoff. Samples of water, sediment and fish were analysed for the concentration of heavy metals (Arsenic, cadmium, chromium, copper, iron, mercury, nickel and zinc) using atomic absorption spectrophotometry and instrumental neutron activation analysis. The sequence of order of the heavy metals in the water, sediment and fish samples observed in the Sakumo wetland were as follows: Fe> Mn> Cu> Hg, Mn> Fe> V> Cr > Cu > Ni> Zn ≈ As> Co> Cd> Hg, Fe> Cu> Mn> V> Hg> Cd respectively. The results showed elevated levels of copper and manganese in all three samples (water, sediment and Fish) although mercury and cadmium were available in relatively low concentration in the fish. Sampled sediment materials exhibited higher concentrations of the heavy metals. The PLI value of the area was, however, low (>1) as the concentration heavy metals like arsenic, cadmium, chromium, copper, iron, manganese, nickel and zinc, were very low. Iron (Fe), Mn and Zn concentration in fish were greater than WHO/FAO certified values; therefore, regular monitoring of metal elements is necessary for fishes collected from the Sakumo lagoon. These heavy metals however, did not pose any immediate health risks to humans but due to the bio-accumulation and magnification of these heavy metals in humans, it is essential to safeguard levels of the metals in the environment.

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