E2-31 Trace elements in Batticaloa lagoon

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An investigation was carried out to monitor the concentration of trace elements in the Batticaloa lagoon. This is the first time a study of this nature has been undertaken, and there are no recorded reports related to this subject. Water samples were collected from September 96 to March 97 at different locations of the lagoon where the pollutants are being mixed. Waste water from the market, hospital, slaughter house, Municipal council drainage, fishing boats landing centre and garbage dumping sites were considered. One water sample was collected monthly from each location for the analysis.

Atomic absorption spectrophotometric method was used to quantify Fe, Cu, Pb, Zn and Cd. Concentration of different trace elements varied from location to location. The highest concentration of Cu (more than 0.035 ± 0.03 mg/l), was found in a location closer to the slaughter house. Concentration of Fe showed a very high value (3.4 ± 4.65 mg/l) in a location near the hospital waste water canal. In a location named as Amirthakali, where the fishing boats landing centre is situated and the other 2 locations where the hospital waste water is mixed, concentration of cadmium showed a higher value (0.058 ± 0.016 mg/l). High concentration (0.21 ± 0.124 mg/l) of lead was observed in Amirthakali and lagoon closer to the hospital waste water canal. The highest value (0.109 ± 0.2046 mg/l) of zinc was observed in Amirthakali area. The concentration of trace elements was found to be high in September and October except for iron which was high (13 mg/l) in December.

The results indicate that concentration of trace elements as a result of the effluents discharged into the lagoon comply with the "Sri Lankan Standard for Effluents discharged into inland surface waters". Perhaps, a question does exist about the accumulation of trace elements over long periods, even though the concentration of the trace elements found in the lagoon water is low at present.