

## **Investigation of surface water quality of Karagan Lewaya in Hambantota aftermaths of Tsunami**

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**Key words: water quality, Tsunami, Hambantota**

### **Abstract**

Karagan Lewaya is a seasonally hypersaline costal lagoon in the Hambantota District. Total area of the lagoon is approximately 835 ha, with relatively small catchment area of 58 km<sup>2</sup> and annual catchment discharge of 67 million m<sup>3</sup>. The Lewaya was severely affected by Tsunami on 26<sup>th</sup> December 2004. It was reported that several dead bodies, vehicles and other house hold items were washed into the lagoon.

The study was targeted to determine the quality of surface water of the lagoon. The quality of surface water samples obtained from lewaya was tested for several chemical and microbiological parameters.

Present study of surface water quality shows high level of biochemical oxygen demand (BOD), which indicates high pollution levels of surface waters. The nutrient parameters do not indicate adverse conditions in general and found to be near natural conditions. However elevated nitrate levels were observed at some points within the lagoon.

Aerobic plate counts of all water samples were very higher than the standard limits for potable water. Some were observed with the *coliform* and *faecal coliform* counts. *E.coli* was identified in large numbers from all tested water samples where there cannot be any *E. coli* present in potable quality water. There was no incidence of *V. cholera* contamination in any of the samples while five out of six were tested positive for *Salmonella* spp. However consequent sampling and analysis did not found any positive identification for *salmonella*.

The study of chemical and micorbiological parameters of surface waters indicate that Karagan Lewaya is highly polluted.

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