IDENTIFICATION OF THE POLLUTING SOURCES OF THE VAVUNIYA TANK AND THEIR EFFECTS TO PROVIDE SUITABLE MANAGEMENT SUGGESTIONS

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One and only tank in the heart of the Vavuniya town is Vavuniya tank. The quality of water in the tank is degraded due to various anthropogenic activities. These activities include rapid urbanization and agricultural practices. The objectives of the study were to identify the sources of pollution to the tank and significance of the impacts from pollution and proposing measures to prevent further degradations of the tank.

Six sampling locations were selected. The samples were collected at a distance about 2-3 meters away from the edge of the water spread area of the tank and to a depth of 30-45cm for 3 days. Electric conductance (EC), pH and salinity were measured by portable meters and standard methods were used in the determination of Cl- (Chloride), NO3- (Nitrate), Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), Total Dissolved Solid (TDS) and Total Suspended Solid (TSS). The obtained values were compared with Sri Lankan Surface Water Tolerance Limits. Several pollution sources were also identified.

The results of the analysis elucidate that Cl^- and pH were within the tolerance limit in all these locations but the TSS and NO_3^- were very high. Salinity and EC were very high at Waste Water Drainage site, College of Education site and close to the Rice Mill site. BOD and DO values were found to be high at the Waste Water Drainage site and close to the Rice mill site. Pollution sources identified during the study showed high number of *Eichornia, Parthinium* and *Salvinia*, improper solid wastes, oil, grease and wastewater. Other than these some encroachers are in the tank bed.