

**ASSESSMENT OF RURAL WATER SUPPLY IN SRI LANKA: A CASE STUDY  
FROM WATTEGAMA WATER SUPPLY SCHEME, KANDY**

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Sustainability of rural water supply schemes (RWSS) is widely discussed, which are usually proposed to be managed by community-based organizations. Wattegama RWSS in Kandy district was selected for a case study as there were several complaints regarding the poor quality of drinking water. The study was focused on assessing the physical (Temperature, turbidity, total dissolved solids, electrical conductivity), chemical (pH, alkalinity, Cl<sup>-</sup>, NO<sub>3</sub><sup>-</sup>, NO<sub>2</sub><sup>-</sup>, Br<sup>-</sup>, PO<sub>4</sub><sup>3-</sup>, SO<sub>4</sub><sup>2-</sup>, Al, As, Cd, Ca, Cr, Cu, Fe, K, Na) and microbiological (*Escherichia coli* and total coliform) water quality parameters through the process of catchment-to-consumer. Samples were collected from 13 locations covering the catchment, different stages of the water purification process and purified piped water from two areas, weekly for a period of three weeks during June 2019 for analysis. Results showed that the water quality of the catchment was exceeding the standards of National Environmental (Ambient Water Quality) Regulations and treated water was exceeding the WHO standards for drinking water quality particularly in physical and microbiological aspects. High turbidity values (6.75 NTU - 10.4 NTU), which is an indication of the presence of contaminants, were recorded in all the locations. All samples collected before and after the purification process were positive for *Escherichia coli*, and high total Coliform counts (78 - 408/100 mL) indicated the faecal contamination of water, posing a severe health risk to the community. Further, the results showed that the effectiveness of the Water Treatment Plant (WTP) is not satisfactory in particular to reduce turbidity and coliform count. Several major pollution sources were identified including agricultural and farming sites besides the catchment. It shows that the present WTP should be improved to remove entomopathogenic *E. coli* and turbidity in particular. There is an urgent need for undertaking a catchment protection and a suitable catchment management in connection with the operations and maintenance of the existing WTP.

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