VARIATION OF WATER QUALITY OF FOUR WATERSHED OUTLETS IN UPSTREAM OF *MAHAWALI* RIVER DURING *MAHA* CROPPING SEASON

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Agricultural land based water pollution has been identified as a main cause for environmental problems in Sri Lanka. Four micro watersheds, *Naranhinna, Kappeti-Ela, Rajamale,* and *Lagumdeniya* located in the *Kandy* district have been identified by the project on Rehabilitation of degraded agricultural lands in the Central Highlands implemented by Food and Agriculture Organization to rehabilitate through watershed management plan. Present study evaluated the baseline water quality status of these micro watersheds by taking water samples at the outlet of each watersheds during the *Maha* cropping seasons 2018/2019. Water samples were collected six times and analyzed for pH, EC, TDS, HCO_3^-, CO_3^{2-}, NO_3^-, NH_4^+, available P, total K, Na, Ca, Mg, Fe, Al, As, Cd, Hg, Cr, Mn, and Pb using standard methods. Most of the tested drinking water quality parameters in all four micro watersheds were within the permissible limits of WHO standard except Fe, and NH_4^+. Observed Fe content exceeded the WHO limits (0.3 mg/L) of all watersheds and was in the range of 1.2 – 1.5 mg/L. Concentration of $NH4^+$ at *Kappeti Ela, Rajamale,* and *Lagumdeniya* was in the range of 0.5 to 0.7 mg/L which exceeded the WHO standard (0.5 mg/L). This study calculated Drinking Water Quality Index (DWQI) and also Irrigation Water Quality Index (IWQI) for all investigated micro watersheds using the tested parameters. The water of all four micro watersheds can be graded as excellent in terms of DWQI and it varied from 14.7 to 31.03. Considering mean IWQI (35.2 – 52.6) of tested watersheds, the water can be characterized as good for any crops during the study period. However, it is suggested to monitor the water quality status of these four micro watersheds during low rainy *Yala* cropping season to further understand entire behavior of these four micro watersheds in relation to water quality.

Keywords: Drinking water quality index, Irrigation water quality index, Micro-watershed, Water quality