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Comparison of physico – chemical characteristics and pollution trends of the Menik Ganga, Kirindi Oya and Walawe Ganga

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Abstract

Walawe Ganga, Kirindi Oya and Menik Ganga are three major river systems which traverse through different agro-ecological zones. All three river systems are harnessed for irrigation purposes and subjected to various anthropogenic activities which influence the water quality, As part of a study, physico – chemical characteristics and pollution trends of the rivers were analysed. Surface water samples were analysed for physico - chemical parameters for a period of six months on monthly basis.

Surface water temperature and pH levels observed were within the recommended level for both potable as well as draft ambient water quality standards. Mean average values of nutrients namely, phosphate, nitrite, ammonia and nitrate were respectively found to be 0.03820 ± 0.048 mg/l, 0.0369 ± 0.036 mg/l, 0.1313 ± 0.20 mg/l & 0.4621 ± 0.379 mg/l in Walawe Ganga, 0.0488 ± 0.032 mg/l, 0.0272 ± 0.027 mg/l, 0.1063 ± 0.120 mg/l & 0.4063 ± 0.179 mg/l in Menik Ganga, and 0.0494 ± 0.0141 mg/l, 0.0385 ± 0.083 mg/l, 0.0950 ± 0.061 mg/l & 0.6255 ± 0.132 mg/l in the Kirindi Oya. Biological Oxygen Demand (BOD) was found to be 12.232 ± 6.75 mg/l, 6.852 mg/l ± 0.50 and 5.866 mg/l± 2.99 and total suspended solids were found to be 17.808 ± 27.27 mg/l, 10.740 ± 7.015 mg/l and 9.297 ± 3.213 mg/l for Walawe Ganga, Menik Ganga and Kirindi Oya respectively .

In April and May, Kirindi Oya showed eutropic to hypertropic conditions. This is further supported by the elevated levels of nitrate and ammonia in some of the sampling locations. This indicates the possibility of fish kills during this period. BOD values were found to be higher than the acceptable level. All three river systems indicate surface water pollution during certain periods of the year.

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