

D-42 The effects of construction and operation of Kandalama hotel on the tank's ecosystem

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“Kandalama”, was a controversial socio-political and environmental issue since 1992 due to the environmental problems envisaged by construction of a hotel on the north-east bank of the Kandalama tank. It was anticipated that

construction and operation of a hotel near the shoreline of the tank may lead to detrimental environmental impacts and affect the cultural values of the area and the beneficiaries of the water resource.

A study was carried out to determine whether the construction and operation of the Kandalama Hotel had significant negative impacts on the water budget and ecological aspects of the tank's ecosystem by computing the annual water budget and determining the physico-chemical characteristics, nutrients, chl-a and phytoplankton diversity using standard methods.

The Kandalama tank reached FSL at least once or twice a year and the annual release changed between 84.42 MCM and 93.40 MCM from 1992 to 1995. Physico-chemical characteristics showed seasonal rhythms but nutrient concentrations and chl-a contents fluctuated intermittently. A blue green algae, *Microcystis* spp. was present throughout the study period and was abundant during most of the years. The phytoplankton assemblage was dominated by *Melosira* (Family: Diatomophyceae) or *Pediastrum* (Family: Chlorophyceae) when the population density of *Microcystis* was relatively low. The annual means of physico-chemical characteristics (pH, conductivity, alkalinity, DO, turbidity, TDS, Cl⁻ and SO₄²⁻), nutrients (NO₃⁻, NO₂⁻, d-P and t-P) and chl-a did not change significantly during the construction period and the operation of the Kandalama Hotel up to April 1996. BOD₅ fluctuated between 0.7 mg l⁻¹ and 3.5 mg l⁻¹ during the study period indicating no significant organic loading into the tank's ecosystem.