Impact of Climatic Variations and Land Use on the Water Resources in the *Mi Oya* River Basin Sri Lanka

G. M. Bandaranayake
Department of Geography, Universirty of Sri Jayawardanapura

One of the most urgent challenges facing the world today is ensuring an adequate supply and quality of water in light of both burgeoning human needs and climate variability and change. Despite water's importance to life on earth, there are major gaps in our basic understanding of water availability, quality and dynamics, and the impact of changing climate, and human activity, on the water systems. In this context, the understanding of the interaction between the water systems, climate changes and land use is an essential need for the present world.

In Sri Lanka, evidences are sufficiently available to understand the climate changes. It is also apparent that these changes are preliminary affecting our river basins from which huge volume of water through 103 rivers are carried from uplands to the lowland. It is obvious that Sri Lanka's fresh water availability varies significantly according to river basins and seasons. From hydro-meteorological point of view, a water deficit or a surplus of a river basin is basically a function of rainfall and topography of the upper catchment. But it is apparent, that the human interference on water in the upper catchment is a vital determinant factor of the river water flow to the lower basin.

The main objective of this paper is to discuss how a seasonal stream called *Mi Oya* upper catchment water yield is affected by rainfall variations. The effects of exiting land use on the water resources are highlighted as the main determinant factor. The total effect of these both impact is finally analyzed to assess the effectiveness of the river in the use of the lower basin water needs.

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