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**IMPACT OF LAND USE CHANGES IN THE CATCHMENT OF RAJANGANA
ON THE QUALITY AND QUANTITY OF WATER IN THE RAJANGANA
RESERVOIR.**

BY

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ABSTRACT

The condition of the watershed plays an important role in the quality and quantity of the water of reservoirs. Among the factors, which affects the health of a watershed are climate, geology and land use management. Rajangana watershed drains water to the Rajangana reservoir, which irrigates about 5520 ha in the dry zone.

In this study, total monthly inflows to the reservoir during last 15 years were calculated through a water balance study and water inflows from the catchment were assessed through a sensitivity analysis using past records. Land use changes were studied by using existing land use maps (1: 50,000) using GIS software. Some water quality parameters in the reservoir waters were analyzed. These parameters were compared with the ones taken during the past 15 years in order to identify any trends with the changes of rainfall, temperature, evaporation, land use etc.

The results showed that the annual total water inflow and also inflow during the dry season to the reservoir decreased with time. There was a marked increase in the total alkalinity and pH of the reservoir with time. In addition to this Electrical Conductivity, Sodium Absorption Ratio were also found in an increasing trend, due to land use

activities which disturb the soil, destruction of riparian forest and drainage water from paddy fields. Protection and rehabilitation of the watershed is important to sustain the water in Rajangana reservoir in good quality and quantity.

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