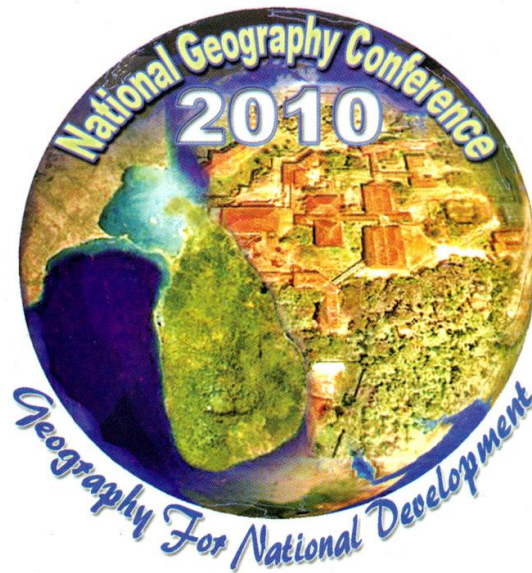




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**Calculation of drainage density of
watersheds: A micro catchment based
analysis of Wet Zone, Sri Lanka.**

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Drainage density (Dd) is described as the length of streams per unit area of a watershed. This is the numerical explanation of the relative spacing of streams / channels in a basin dissected by tributaries. The meaning of the unit area can be defined as a sub-watershed. Drainage density is widely used to study river erosion, formation and explanation of drainage richness of rivers. Therefore, the drainage density is one of the main variables of a river network. However, the drainage richness of watersheds in the wet zone of Sri Lanka is significantly very high than that of the other drainage basins of the country. The aim of this research is to determine drainage richness of a micro catchment in the wet zone of Sri Lanka. The study used the following equation for the calculations.

Drainage density (Dd) = Total Length of Stream / Basin Area

The study area was Kukule Ganga basin which is one of the main tributaries of Kalu Ganga, Sri Lanka. The main catchment was divided in to four sub catchments (unit areas) as Delgoda, Koswatta, Wewagama and Down valley area. In this context, the study was carried out under a raster data based (River) analysis.

The “Dd” values obtained ranges from 1587.09 to 2452.73 m/m², which are finally classified into four classes, as Very high, High, Moderate and Low drainage density. The study remarked that the ‘Very high’ drainage unit was Delgoda sub catchment (2452.73 m/m²) while the ‘Low’ density unit was Down valley (1587.09 m/m²) area. ‘High’ density unit was Wewagama sub catchment (2392.74 m/m²) which belongs to the Sinharaja world heritage forest reserve and the ‘Moderate’ density unit was Koswatta sub catchment (2088.25 m/m²). The meaning of the ‘Very high’ density is that the better drainage watershed with more closely spaced and numerous sub tributaries / channels. Finally, the findings of the analysis revealed that the “Dd” richness of Kukule basin is remarkably very high according to above figures.