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# A Preliminary Study on Rainfall Redistribution in a Secondary Lowland Tropical Forest, in Yagirala Sri Lanka

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## Abstract

Forest plays a major role in hydrological cycle in terrestrial ecosystem. Though the hydrological balance of forest ecosystems has often been studied rainfall partitioning of individual rain events are less frequently reported. Therefore, rainfall partitioning was studied in a secondary lowland rainforest in Sri Lanka. The objectives were to estimate the stemflow (SF), throughfall (TF), canopy interception (CI), and net precipitation reaching to the forest floor. A plot having area with 400 $m^2$ (20×20 m) was selected for the study in Yagirala Forest Reserve (6 21 to 6 26 N and 80 06 to 80 11 E).Gross precipitation (GP) was recorded using anautomated weather station located in an open space approximately 100 m away from the study site. In the study plot five manual rain gauges were randomly placed beneath the forest canopy for throughfall measurement .Stem collars were introduced to all canopy and subcanopy trees and connected to storage tanks for SF measurement. Measurements were made on a rainfall basis from July to September 2018. Data from the storm events started with dry canopy condition was considered for the data analysis. The results show that CI varies between 8.4%-49.5% and NP (TF+SF) reach the forest floor varies between 50.5%-91.6%. As the size of rainfall events increased, CI by the forest canopies, and loss through evaporation increased. Interception loss contributes a notable amount of rainfall and its measurement is an essential element in assessing water balance on the catchment scale.

***Keywords:*** Gross precipitation, Stemflow, Throughfall, Canopy interception, Yagirala forest reserve

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