Mapping pre and post earthquake land cover change in Melangkap, Kota Belud Sabah using multi-temporal satellite Landsat 8/OLI and Sentinel 2 Imagery

ABSTRACT

It is generally accepted that vegetation provides important ecosystem services especially in term of rainfall partitioning. This study aims to evaluate the influence of canopy structure namely crown area (CA), diameter at breast height (DBH), tree height (TH) and crown spread (CS) and stand density on the partitioning of rainfall. Twelve throughfall plots of 20 x 20 m with 64 gauges randomly placed within each plot were established. For stemflow measurements, all trees within a 100 m2 plot within the study area were collared. Interception loss was computed as the difference between precipitation and throughfall plus stemflow. Throughfall ranged from 73.47 – 82.32 % of the gross rainfall. Stemflow was found to be roughly around 2.01% of the gross rainfall. Highest interception was 24.52 % attributed to the plot having the highest above ground biomass (AGB) density. The relation between canopy interception and forest structure were analyzed by regression method. Multiple regression analysis on the potential influence of stand structure to the throughfall percentage shows that all the forest structures variables measured in this study are negatively correlated to the amount of throughfall generated. This study suggests that forests with higher value of DBH, CA, CS and TH had higher interception rate.