

Thesis Title:

Possibility of Using Capillary Barriers for Landslide Risk Reduction

Abstract:

Rainfall induced slopes failures are a very critical issue in Sri Lanka. Natural or cut slopes which remain stable during dry season due to prevalence of high matric suction undergo failure because of loss of matric suction and pore water pressure build-up. Capillary barrier cover system is a cost-effective system with natural soils that could minimize infiltration of rainwater. Capillary barriers are unsaturated cover system that functions in response to change in negative pore water pressure. This study on capillary barrier studies the applicability of capillary barrier cover system on local Sri Lankan cut slopes based on laboratory rainfall experiments and verification using numerical analysis with GeoStudio, 2012 SeepW package and numerical study of performance of capillary barrier on multistep cut slope on 3D model using Midas GTS NX.