ORGANIZATION OF THE SOIL MANTLE IN TROPICAL SOUTHEASTERN BRAZIL (SERRA DO MAR) IN RELATION TO LANDSLIDES PROCESSES.

FURIAN, S.; BARBIÉRO, L.; BOULET, R. Organization of the soil mantle in tropical southeastern Brazil (Serra do Mar) in relation to landslides processes. **Revista CATENA**, Amsterdam, v. 1, n. 38, p. 65-83, 1999.

RESUMO

The Serra do Mar complex in southeastern Brazil is subject to frequent landslides especially on the Atlantic coast. The three-dimensional organisation of the soil was studied in a 56-ha representative catchment. Upslope in situ soil material hás developed from the parent rock, and downslope the soil hás resulted from landslide processes. The soil mantle upslope is mainly characterised by slowly permeable kaolinitic horizons within a thick gibbsitic weathering horizon. The field and microscopic relationships between two suggest that the Kaolinitic horizon hás envolved at the expense of the gibbsitic material. Resilication of gibbsite to form kaolinite is postulated in this environment. The kaolinitic horizons are overlain by a microaggregated horizon. The difference in porosity and water movement between these two horizons was estimated by density measurements, mercury porosimetry, image processing and calculation of water retention and shrinkage curves. The results indicate that water is retained briefly within the microaggregated horizon during intensive rainfall. Because of the inclination of the kaolinitic horizon, any excess water within it flows laterally dowslope and accumulates in the lowest part of the slope. This leads to landslipping, the main process of landform development in the region.