

# RELICT STRUCTURAL DISCONTINUITIES AND SLOPE STABILITY AT HALYALA LANDSLIDE

U. B. AMARASINGHE AND K. DAHANAYAKE

*Department of Geology, Faculty of Sciences, University of Peradeniya*

Slope failures in residual soil and associated weathered rocks are common in humid temperate and tropical climates, particularly during periods of intense rainfall. A landslide that occurred in January 1999 at Halyala, Uda Dumbara has been systematically studied. It was noted that a thick weathering profile had developed on the rock slope over a long period of geologic time. This phenomenon had altered the strength and permeability characteristics of the slope thereby increasing its susceptibility to failure. Underlying structural features – joints, foliation bands, which have been inherited as relict bodies from the parent rock, had further reduced the stability of the slope. This study reveals that there is a distinct relationship between rough plane of the head scarp, two lateral scarps, failure plane of the sliding mass of the weathering profile and the main relict discontinuities existing in the parent rock. At Halyala, the head scarp is parallel to one of the prominent regional joint discontinuities and the lateral scarps are parallel to the other closely spread joint sets. Sliding takes place along the third joint discontinuity. This slope failure is found as a scarp slope failure. So it is very interesting to note that the key to understanding the stability of slopes in residual soils and weathered rocks in Sri Lanka lies in recognizing the role of weathering profiles and associated relict geological structures of the underlying parent rock.