C-16: A Comparative study of colluvium deposits of landslide prone slopes in the Nuwara Eliya and Ratnapura Districts

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A comparative study of colluvium deposits of landslide prone slopes in the Nuwara Eliya and Ratnapura districts was conducted in terms of grain sizes, their distribution and their composition. At many selected locations of districts, field observations and laboratory test results of soil samples were analysed to focus on the understanding of the nature of colluvium.

It was observed that: (a) the overburden of both districts consists of transported soil and rock fragments, residual soil and highly/completely weathered rocks. (b) The thickness of colluvium deposits of the Ratnapura district is relatively higher than those of the Nuwara Eliya district. (c) The colluvium of the Ratnapura district consists of mainly charnockitic boulders in a matrix of higher percentage of fine soil. (d) Rock fragments of colluvium of the Nuwara Eliya district range from sand to boulder in size and is composed of charnockitic rocks, quartzite, biotite gneiss and marble.

The reason for this is the variation of geological conditions of both districts. The host rock of the Ratnapura district is highly weathered feldspar rich granulites, which are interlayered with charnockitic rocks. The charnockitic rocks have high resistance for weathering and are highly jointed to form the block shape. The most widespread lithological units of the Nuwara Eliya district are charnockitic rocks, highly jointed in forming different size fragments. Consequently, mud flows, carthflows and earthslides are most likely to take place in the Ratnapura district and rocklides, debris slides and rock falls in the Nuwara Eliya district.