IPL Certified Project M155 -2012

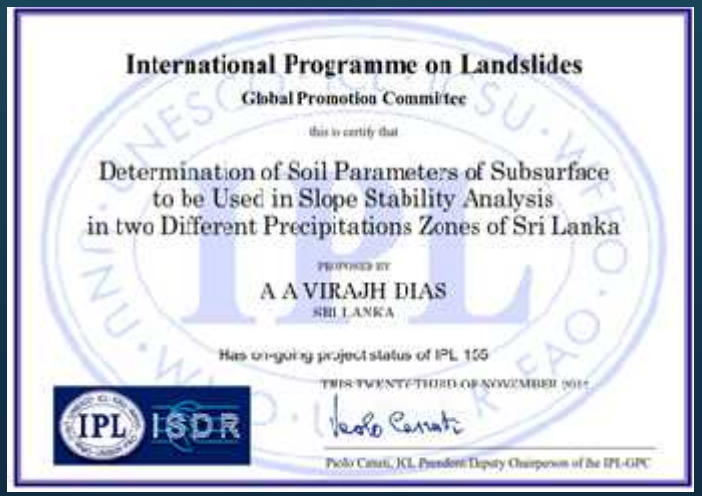
Determination of Soil Parameters of Subsurface to be Used in Slope Stability Analysis in two Different Precipitations Zones of Sri Lanka.

Determination of critical and other important insitu soil parameters for various soil types that are present in two different precipitation zones in Sri Lanka and comparison of the same. The selected two precipitation regions are based with:

- Heavily precipitated zone in wet zone with annual average rainfall above 4000mm.
- Wet zone with annual average rainfall between 2500-3000 mm.

Beneficiaries of Project for Science, Education and/or Society

Project proponents of development projects and residents in landslide prone areas, professionals, academics, design groups and planners


International Programme on Landslides
Global Promotion Committee
this is certify that
Determination of Soil Parameters of Subsurface to be Used in Slope Stability Analysis in two Different Precipitations Zones of Sri Lanka
PROPOSED BY
A A VIRAJH DIAS
SRI LANKA
Has on-going project status of IPL 155
THIS TWENTY THIRD OF NOVEMBER 2011
IPL ISDR
Paolo Canuti, ICL President/Deputy Chairperson of the IPL-GPC

Overall Results (recent outputs)

The study on evaluation of E_{50} (Secant modules) is an experiment setup to understand the behaviour of residual soils under changing stress conditions at site due to various reasons such as prolong period of rainfall precipitations, movement of soils, unloading effects and re-loading effect caused by deposition.

Rainfall Precipitation Zone	E_{50} (at EC-100kPa - 120kPa) kN/m²	e_0	Number of landslides / slope failures
Zone 1: Balangoda to Bandarawela	39,286	0.838	09 nos of slope failures identified
Zone 1: Koslanda Landslide	41,957	0.810	one major landslide across the road
Zone 1: Gampola to Nuwara Eliya	35,182	0.937	07 number of slope identified
Zone 1: Watawala Landslide	10,714	1.15	one major landslide across the rail road
Zone 2: Colombo and sub regions	56,900	0.788	Newly formed earth cutting
	25,723	0.640	Newly formed earth cutting
	11,909	1.348	Newly formed earth cutting

The results do not conclude a strong interdependence of e_0 and E_{50} with the shear strength characteristics due to a small sample represented in this study. Therefore, it is advised to explore more sample representation in a detail study before the comparison or evaluation of the interdependence of sub coefficients of soils.

Deep earth cutting sections in residual soils at Zone 2; Akuregoda, Colombo, Sri Lanka