

## **Application of Nature Based Land Resource Management Practices on micro catchment basis to landslide risk reduction**

**J.J. Pitagampala**

*Land Use Policy Planning Department*

This paper presents findings and conclusions arrived at for mitigating landslide hazard through application of landslide mitigation measures on micro catchment basis in the Niggaha village of the Bulathsinhala Divisional secretariat Division. The study was conducted having analysed the secondary data and topographic maps and subsequent field observation of present land resources management practices applied in the study area.

The area being hilly and abundant of streams was subdivided into mini water catchments and their characteristics such as area, present land use, gradient, slope length, slope shape, soil and rainfall intensity were identified. These characteristics were identified by studying the 1:10000 topographic map of the area. Arc GIS software was used to demarcate catchment boundaries and their characteristics

Given the high rainfall intensity and sensitivity of catchment characteristics Nature Based Land Resources management practices were recommended for each catchment. Runoff calculations were also done to decide the standards of runoff interception measurers. The need for maintaining standards of conservation measures and their application on micro catchment in its entirety to dispose excess run off to natural water ways was also emphasised. Some land utilization types were also recommended for different slope classes to mitigate landslide hazard.

Human induced activities especially with regard to site preparation for house construction were also examined in the area and made recommendation to reduce cut failures of unstable and irregular cut slopes and reduce overland flow on them and their velocities.

The substandard land management practices in the area are not sufficient to cope with the catchment characteristics and rainfall intensities and resultant runoff. Therefore, the study recommends the Nature Based land Management practices on mini catchment basis to mitigate landslide risk.

*Keywords: Landslide hazard, risk reduction, land management, runoff, catchments*