

LANDSLIDE HAZARD ZONE MAP FOR SRI LANKAN NATIONAL HIGHWAYS

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Landslide is one of the major natural disasters which create several adverse effects to community and country's economics. Disruption to transport system by landslides which activate on highway sections has major effect. To eliminate these kinds of adverse effects on highway sections, it is important to identify the vulnerable road sections.

The objective of this study was to develop a methodology and thereby a landslide hazard map for selected Sri Lankan trunk roads by using existing features those may activate landslides.

The relevant data to develop the hazard zone map were obtained from various organizations, literature, and field observations. Geographic Information System (GIS) was used as the basic analytical tool. Arc GIS 8.3 desktop version was used as primary software. Contours, land use, stream network, soil, past landslides, rainfall were used as basic input layers. Erosion zone layer, slope layer, drainage density, stream order, reservoir and land use pattern layers were developed from existing layers. Overlapping weighted layers, the hazard zone map was developed.

Figure 01 shows a part of the landslide hazard zone map for Sri Lankan trunk road system. Hazard category details are given in Table 01. Landslide risk was categorized in to 5 groups from very low to very high. 872 km² of area within 1.5 km of each side of selected road was covered in this study. From the study, 0.3 % of area belongs to very high hazard zone and 5.3 % of area belongs to high hazard zone.

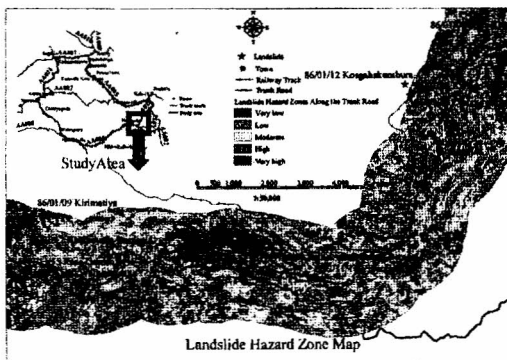


Figure 01: Landslide hazard zone map

Table 01: Percentage of Hazard area

| Hazard Category | Total |
|-----------------|-------|
| Very low (%) | 27.0 |
| Low (%) | 35.4 |
| Moderate (%) | 32.0 |
| High (%) | 5.3 |
| Very high (%) | 0.3 |

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