

A STUDY ON THE LANDSLIDE RISK AREAS IN KAGLE DISTRICT

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In the Sri Lankan context landslide is emerging as a prominent hazard. The term landslide is used to explain the movement of rock, debris or earth down a slope by the force of gravity. When examining the causes for landslides, human environment factors become salient due to the unsustainable land use practices. In the Sri Lankan context, there are different focuses on landslides, especially on the landslide hazard assessment. National Building and Research Organization (NBRO) works as the focal institution on landslide hazard identification and mitigation. NBRO has prepared landslide hazard maps based on bedrock geology, soil, slope, hydrology, landform, land use and management. Almost all physical factors and some human environmental factors have been included in those maps. The focal point of those maps is landslide hazard but a combination of hazard and vulnerability results in creating risk factors. Vulnerability can be depend on socio- economic background of the community concerned, and their capacity to absorb any shock. So identification of landslide risk is the next step after identification of hazard. This process is both conducive and effective in landslide mitigation. NBRO already identifies hazard zones in the hill-country of Sri Lanka. Kagalla district has been included in the high hazard region for landslides. The objective of this study is to identify the landslide risk areas in the Kegalle district by using Spatial Analysis tool- GIS. First, high and moderate hazard areas for landslides in the Kegalle district were identified through the Hazard Zonation map prepared by the NBRO. Densely populated areas were then identified according to Gramaniladari Divisions (GNDs), according to the census of 2012. Settlements and human-constructed urban areas were also identified by LANDSAT 8 satellite imagery. All three maps were overlaid, and were analyzed by ArcMap GIS software in order to develop the final risk map. According to the hazard map, the high hazard zone is located in the South East quarter of the district, but population density does not display any regular pattern, and is mostly concentrated in the nodal points and other city areas. According to the final risk map, high risk areas can be identified as follows: Bulathkohupitiya- Kandewa GND, Dehiovita- Viharakanda, Galabalana GNDs, Ruwanwalla DSD- Ruwanwella and Doraduwa GNDs. All the above locations are occupied by tea plantations, and the following locations have village settlements: Aranayake DSD- Galbokka, Theleka, Duldeniya, Ambalakanda, Moragamma, Mawanella DSD- Hemmathagama GND and Dehiovita DSD- Galapatha GND. Other than these specific locations, Daraniyagala and Dehiovita DSD have high and moderate risk for landslides. Identification and awareness is mandatory for landslide disaster mitigation in those areas by both the communities and authorities. The findings of this study is critical to community capacity building so that their vulnerability could be minimized.

Keywords: Landslides in Kegalle, Risk and Vulnerability, Capacity Building