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LANDSLIDE HAZARD ASSESSMENT IN BULATHKOHUPITIYA DS DIVISION-KEGALLE DISTRICT

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Landslides play an important role in the evolution of landforms and represent a serious hazard in many areas of Sri Lanka. Therefore quantitative landslide risk analyses is essential to manage and mitigate landslide disasters. Bulathkohupitiya DS division is one of the landslide prone area in Kegalle District. Within this study, a new raster-based approach is developed to assess the landslide risk in Bulathkohupitiya DS division. Thus, all existent vector data are transferred into raster data using a resolution of 1 m×1 m. The specific attribute data are attributed to the grid cells, resulting in specific raster data layers for each input parameter. The calculation of the landslide risk follows a function of the input parameters hazard, damage potential of the elements at risk, vulnerability, probability of the spatial impact, probability of the temporal impact and probability of the seasonal occurrence. Finally, results are upscale to a resolution of 20 m×20 m and are presented as individual risk to life and object risk to life for each process. Within the quantitative landslide risk analysis the associated uncertainties are estimated qualitatively. The resultant maps show nine (09) GN Divisions (Gatiyamulla, Ambawakka, Alawathura, Ihala Nevusmiyar, Uduwa, Udapotha, Ambamalla and Lewal) are in high risk regions that is 11.89% of the total area. With compared the historical data most of landslide were not occurred in identified area. It can be conclude that due to rapid change of land-use pattern as well as rainfall intensities can be influenced to this change. It is found that 68.61% of the total DS land area are at moderate landslide risk. Most of the historical landslide were occurred in that region. Finally it can be conclude that landslide risk is vary with the temporal variability of land-use and rainfall intensities. Therefore it is recommended to always update the landslide risk maps.

Keywords: *Landslide Risk, Risk assessment, rainfall intensities, raster-based, vulnerable*