

Factors Contributing to Landslides in the Kaoping Watershed of China Taipei

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Abstract: Kaoping Creek is the second longest river in Taiwan, and its drainage area is the largest. Because of the steep topography, the watershed is also prone to landslides and debris flows. To make the situation worse, some of the largest rainfall amounts in Taiwan in recent years were also recorded in the Kaoping watershed. Therefore, the area is a hot spot for landslide disasters. To understand the likelihood of occurrences of disasters, factors contributing to landslides were assessed in this study using GIS tools. The entire watershed was divided into grids of square sizes, and a point system was used to assign points to the grids according to different factors such as land use, rainfall amount, slope gradient, slope orientation, fault type, soil type, soil formation, road density, and dip slope presence. Then, the relationship between the landslides and the factors were analyzed using statistical regression and artificial neural network. The results can be used to predict future occurrences of landslides in the study area.

Keyword: GIS, Risk Factor, Regression Analysis