

The Threshold Values of Soil Water Index for Landslides on Country Road No.89

Authors : Ji-Yuan Lin, Yu-Ming Liou, Yi-Ting Chen, Chen-Syuan Lin

Abstract : Soil water index obtained by tank model is now commonly used in soil and sand disaster alarm system in Japan. Comparing with the rainfall triggering index in Taiwan, the tank model is easy to predict the slope water content on large-scale landslide. Therefore, this study aims to estimate the threshold value of large-scale landslide using the soil water index. Sixteen typhoons and heavy rainfall events, were selected to establish the relationship between landslide event and soil water index. Finally, the proposed threshold values for landslides on country road No.89 are suggested in this study. The study results show that 95% landslide cases occurred in soil water index more than 125mm, and 30% of the more serious slope failure occurred in the soil water index is greater than 250mm. Besides, this study speculates when soil water index more than 250mm and the difference value between second tank and third tank less than -25mm, it leads to large-scale landslide more probably.

Keywords : soil water index, tank model, landslide, threshold values

Conference Title : ICCSRGSD 2017 : International Conference on Corporate Social Responsibility, Governance and Sustainable Development

Conference Location : Prague, Czechia

Conference Dates : March 23-24, 2017