屏東地區降雨量與崩塌面積變化分析

The analysis of the relation between Rainfall and collapse area in Pintung

國立屏東科技大學水土保持系

副教授	大學生	大學生	大學生	大學生
江介倫	林妤宣	陳毓昌	黃滋萱	陳以諾
Jie-Lun Chiang	Yu-Syuan Lin	Yu-Chang Chen	Ci-Xuan Huang	Yi-Nuo Chen

摘　要

台灣因地處環太平洋地震帶，加上每年颱風豪雨因引致土砂災害，地文環境易受擾動，尤其在氣候變遷下降雨強度和超大豪雨等極端降雨事件增加將使致災規模及範圍均大幅增加，更可能導致大規模土砂災害，造成嚴重的生命財產損失。因此本研究蒐集2004~2017之降雨資料及屏東地區崩塌資料並由地理資訊系統分析歷年崩塌面積及歷年新增崩塌面積，分析降雨量與崩塌面積之相關性。

蒐集整理降雨數據後，比較年崩塌面積或每年新增崩塌面積與年降雨總量、前三大日降雨量、每年前三大颱風雨量關係。結果發現新增崩塌面積 與 鄰近崩塌集中區域 之阿里、來義、三地門等雨量站 之年最大日雨量 及每年最大颱風降雨量 有較高之相關性，相關係數多界於0.5~0.8之間，最高可達0.9。

關鍵詞：新增崩塌，降雨，颱風降雨

Abstract

Taiwan is located in the Pacific volcanic seismic zone and frequently suffers from landslides and debris flow caused by typhoons. Its geography is easily affected especially by the climate change. The growing intensity of rainfall and extremely torrential rain increase the scale and scope of the disasters, which possibly lead to large-scale landslide, resulting in serious loss of life and property. This study collected the rainfall data from 2004 to 2017 and the collapse data in Pingtung area. We analyzed the collapse area over the years and probed into newly added collapse area by GIS each year, the geographic information system.

The correlation between the rainfall and the collapse area is discussed. After the rainfall data arrangement, we compared the relationship between the annual collapse area, the newly added collapse area, the total annual rainfall, the top three maxima daily rainfall, and the top three typhoon rainfall each year. The results show that there is a high correlation between the

newly added collapse area and the annual maximum daily rainfall and the annual maximum typhoon rainfall from the rainfall stations at Ali, Laiyi, Sandimen that are near the main collapse areas. The correlation coefficient is mostly in the range between 0.5 and 0.8, up to 0.9.

Keywords: Newly added collapse area, Precipitation , Typhoon rainfall