

Landslide Hazard Zonation Using Logistic Regression Method (Case Study:Dez-e-Oulia Basin)

K. Shirani^{1*} and A. R. Arabameri²

(Received: May08-2014 ; Accepted : May12-2015)

Abstract

This research was conducted to prepare landslide susceptibility zonation (LSZ) map for the Dez-e-Ouliabasin using logistic regression model. For this purpose, at first, the most important factors affecting land sliding including slope, aspect, elevation, precipitation, the distance from road, the distance from fault, the distance from drainage, land use, and lithology were determined. Then, the landslide inventory map was prepared by using field digital checks, GPS and satellite images. In the next step, the landslide susceptibility zonation map was prepared by using logistic regression method. According to the obtained coefficients for LSZ maps, the most important factor in the study area was elevation layer. The Receiver Operating Curve (ROC) index value was calculated (0.92), which indicates a very high level and suggests that the observed mass movements have a strong relationship with the logistic regression model.

Keywords: Zonation, landslide, logistic regression methods, Dez-e-Oulia Basin.

1. Dept. of Agric. and Natur. Resour. Res. and Education Center, Isfahan, Iran.

2. Dept. of Geomorphology, Tarbiat Modarres Univ., Tehran, Iran.

*: Corresponding Author, Email:kouros Shirani@gmail.com