Abstract

There are several practical methods in landslide susceptibility of which the logistic regression is used as the statistical model in central Zab basin in the southwest mountainsides of West-Azerbaijan province in Iran to predict landslide susceptibility with two independent and dependant variables. This part of Zab basin is landslide-prone given its geological structure and geomorphology. We studied and defined the factors (slope, aspect, elevation, distance to road, distance to drainage network, and distance to fault, land use, precipitation, and geological factors) that affect occurrence of the landslides. To get more precision, speed and facility in our analysis, all descriptive and spatial information was entered into GIS system. The applied statistical approach is appropriate to landslide prediction. It employs the landslide events as dependant variable and data layers as independent variable, and makes use of the correlation between these two factors in landslide susceptibility. Given the employed model and the variables, signification tests were implemented on each independent variable, and the degree of fitness of susceptibility mapping was estimated; finally the map was classified into five categories: very low, low, moderate, high and very high risk. The categories cover an area of 95.46km², 100.46km², 46.1km², 158.38km² and 120.96km², respectively.