

A METHODOLOGY FOR QUICK REGIONAL ASSESSMENT OF DAMAGE TO ROADS DURING EARTHQUAKES

OJEDA-MONCAYO, B. J. and FORERO-DUEÑAS, C.A. Ingeominas, Diagonal 53 # 34-53, Santafé de Bogotá, Colombia.

In Colombia, after the Quindío earthquake, January 25th 1999, it was necessary to make a quick assessment of the state of the roads in and around the epicentral. For doing so, INGEOMINAS with teams of engineers (geotechnical) and geologists (of engineering), produced local observations in the roads, between Cajamarca and Pereira, that were organized in several scales including a regional summary map in 1: 200.000 scale. Such a map became a huge tool for local and regional authorities and decision makers, for understanding the real consequences of the earthquake and act accordingly. The field parameters that were recorded included: coordinates of the landslide, type, dimensions, approximate volume and degree of actual or potential activity. As a function of the number, volume and activity of the landslides, and the location and density of cracks in the road surface, to each sector of the roads was assigned a color, creating a traffic light-kind of map. Three main zones were defined in such a map, as follows: Zone 1, Critical sectors, having landslides greater than 100 m³ in main roads and 20 m³ in secondary ones, and severe cracking, also present smaller landslides sporadically; in this area main studies were needed and the use of heavy machinery for cleaning. Zone 2, Intermediate sectors, still having high landsliding density but with volumes smaller than 100 m³ in main roads and 20m³ in other roads, light machinery was enough for cleaning, and immediate studies were needed only in few places. Zone 3, safest road paths.