

RESEARCH ON ROAD TRAFFIC MANAGEMENT FOR REDUCTION OF REGULATION TIME DUE TO SLOPE FAILURE (1)

Abstract : Data of disasters which occurred on the national roads were analyzed statistically. The scheme to collect and analyze examples of the slope disasters on road continuously, and problems to cancel the section of traffic regulation due to rainfall standard in advance and problems to ease the regulation standard were examined respectively. And the method of drawing fragility map were also examined. The main results are as follows: 1) The scheme to collect and analyze examples of the slope disasters on road were determined that the Regional Bureaus of Ministry of Land, Infrastructure, Transport and Tourism collects the examples of disasters, and the Public Works Research Institute analyzes the disaster examples sent from the Regional Bureaus, and feedback the results to the Regional Bureaus. This scheme started from 2008. 2) The materials of committee for the section of traffic regulation due to rainfall standard in advance were analyzed, and the problems were as follows: (1) Experience of rainfall more than regulation standard has been waited after finishing the countermeasures. (2) The countermeasures for all slopes which is necessary to be measured have not been finished. (3) Investigation, estimation and countermeasures for upper slope have not been finished. We wrote a manual (draft) for investigation and evaluation of upper slope using road slope hazard map. 3) Applicability of fragility map to the area in which there are rear disasters were examined. The results of analysis were different between the areas of different geology. However, the numbers of actual disaster were not different between these areas. The tendency of slope failure is possible to be influenced by the difference of accuracy due to the difference of numbers of slope failure for making the fragility curve, and the difference of geography such as the density of valley and undulation. And accuracy of location data of slope failure influence severely, so it needs to obtain these location data accurately. 4) Analysis by Sallow Landslide Simulation System (SLSS) using 1m mesh Digital Elevation Model (DEM) succeeded to estimate hazard area more detail than using 10m mesh DEM. The method of making fragility map was developed by the combination of 3) and 4) mentioned above.

Key words : road, slope, disaster, regulation, rainfall, fragility curve