Geophysical Research Abstracts, Vol. 9, 05274, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-05274

A comparative Study between the BIS method and the proposed method of Landslide Hazard Zonation in the Hilly tract of the Balasan Basin of Darjiling Himalayas, India.

S. K. De

Department of Geography and Disaster Management, Faculty of Science, Tripura University, Suryamaninagar- 799130, Tripura (West), India (desunil@rediffmail.com / Fax: +91-381-237 4801)

Landslide is a major natural hazard in the hilly tract of the Balasan basin of the Darjiling Himalayas, India which tolls many lives and properties almost every year. Vulnerable geological structure, unique geomorphic set-up, unplanned and unscientific usage of land along with heavy and concentrated rainfall have led to the establishment of such menace. About 156 landslides have so far been detected from the available maps and records as well as from the field survey. The present paper aims at concentrating a comparative study between the Bureau of India Standard (BIS) method and the proposed technique of landslide hazard zonation of the said area.

According to the BIS method the weightage of Individual parameters (particularly for terrain parameters) has been considered on the basis of a range of parametric values, e.g. the weightage of slope ranges between 36^0 – 45^0 is 1.7 and so on. But in the proposed method the weightage has been assigned very simply for all individual parametric values, e.g. when the slope is $10^0$the weightage is 1.0, when it is 11^0 the weightage 1.1 and so on. By this way the whole study area has been assigned individual weightage against individual parametric values in each and every grid of 1km X 1km. Six parameters have so far been considered such as lithology, lineament density, slope, drainage, rainfall and land use. For both the cases the final Landslide Hazard Zonation Index (LHZI) have been calculated by summing up the individual weightage of all the parameters. On the basis of the LHZI values two different landslide zonation map have been drawn with four categories of zonation, i.e Very High, High, Moderate

and Low.

From the two different maps it is seen that the highest number of landslide event is occurring tn the High Hazard Zone group (77 out of 156)) in case of BIS method but it is prevailing in the Very High Hazard Zone (88 out of 156) in case of the proposed method.