



Quantitative Risk Mapping of Landslides for the 1st District of Petropolis city using GIS

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Recently GIS is being increasingly used with success in several applications as a tool to help in decision-making during the risk management process in urban areas.

This study first consisted of a revision of the following items: quantitative evaluation of risk landslides in urban areas, Bayesian statistics and the principles of geoprocessing. Next, an application of the Bayesian theory was made in the thematic integration of maps of the natural status (vegetation, geological-geotechnical, natural drainage and declivity) to produce a landslide susceptibility map in the area of the 1st District of Petropolis city.

This map, associated with vulnerability data and risk criteria, was used to produce a quantitative map of individual risk in the area under study.

The application of the proposed model facilitated the identification of the various areas of risk in the 1st District of Petropolis city, especially those rated as High and Very High Risk. The advantage of using this model lies basically in the fact that the quantitative risk analysis can be done with only one geo-referenced data bank.