DEVELOPING A LANDSLIDE SUSCEPTIBILITY MAP OF IRELAND USING A LOGISTIC REGRESSION MODEL AND GIS

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Very little research has been undertaken in Ireland on landslides. After multiple incidences in recent times, particularly landslides in peatlands, the threat of landslides from an ecosystem, economic and social point of view has been highlighted. The aim of this study is to develop a method for the creation of a landslide susceptibility map of Ireland. An important element of this study is deciding upon appropriate parameters of landslides which affect slope stability particularly in peatland regions, which are valid from an Irish context. The following parameters have been considered: slope gradient, slope aspect, peatland type, peat depth, soil type, rock type, rainfall and elevation. Logistic Regression (LR) IS…one sentence explanation of what LR is. LR will be employed in the creation of the susceptibility map. Land use such as the wind farm development and peatland harvesting as well as rainfall levels (which is the main climate change issue) affect slope stability. This multivariate approach allows for the prediction of the presence or absence of a characteristic based on the values of a set of predictor variables and will encompass a qualitative element in the ranking of severity of landslides based on knowledge deducted from previous peatland landslides in Ireland. Geographical Information Systems will display the landslide susceptibility map and raw data from previous landslide sites included in the Geological Survey Ireland 'Irish landslide database'.