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Landslides geotechnical analysis. Qualitative assessment by valuation factors

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In general, a landslide can cause a disaster when it is combined a number of factors such as an extreme event related to a geological phenomenon, vulnerable elements exposed in a specific geographic area, and the probability of loss and damage evaluated in terms of lives and economic assets, in a certain period of time.
This paper presents the qualitative evaluation of slope stability through of Valuation Factors, obtained from the characterization of the determinants and triggers factors that influence the instability; for the first the morphology and topography, geology, soil mechanics, hydrogeology and vegetation to the second, the rain, earthquakes, erosion and scour, human activity, and ultimately dependent factors of the stability analysis, and its influence ranges which greatly facilitate the selection of construction processes best suited to improve the behavior of a slope or hillside.

The Valuation Factors are a set of parameters for assessing the influence of conditioning and triggering factors that influence the stability of slopes and hillsides. The characteristics of each factor must be properly categorized to involve its effect on behavior; a way to do this is by assigning a weighted value range indicating its effect on the stability of a slope.

It is proposed to use Valuation Factors with weighted values between 0 and 1 (arbitrarily selected but common sense and logic), the first corresponds to no or minimal effect on stability (no effect or very little influence) and the second, the greatest impact on it (has a significant influence). The meddle effects are evaluated with intermediate values.