

Abstract

The Metropolitan Area of San Salvador (AMSS) is the area with the highest population density of El Salvador and is growing continuously. The marginal communities that arise from their growth are placed in escarped morphologies lands, potentially unstable. Most of the AMSS are settled down upon the denominated Tierra Blanca Joven (TBJ), a ground of volcanic origin that only offers resistance in a semisaturated state. The seasons of El Salvador are very pronounced; during the rainy season the precipitations are very frequent and intense, that fact causes instabilities in the slopes, mainly in form of landslides. The erosion produced by the surface runoff erodes the slopes accelerating the breakage processes.

The study hypothesis raise the relevance of a good urban planning that includes the resolution of the urban drainage of a settlement, as an anthropological factor in the determination of the vulnerability of a settlement to suffer problems associated to the instability of near slopes. Defining the case studies as the pair slope-adjacent houses and provided with a sample of 89 case studies distributed by all the AMSS, four typologies of settlements have been obtained, according to their relation with the slope, that they have allowed to standardize the analysis and to annotate the cases in which the study is relevant. They have been characterized in degree of urbanization of the communities by means of the definition of three categories for every infrastructure of urban service, to know how they operate and to set the study in context. The problematics that affect each typology of settlement have been determined, grouping them according to characteristics of affectation, which have allowed to understand the erosive indicators. It has been demonstrated that, for the cases in that the slope is below the houses, the existence of an underground cleaning network, that includes the correct manage of pluvial and residual waters and the suitable leveling and paving of the streets, considerably decrease the daily problematics of instability.

The cases where the settlement is placed in the middle of a slope, organized in terraces, are those who experience a more important improvement on having the application of the underground cleaning network. The incidence of this parameter in this risk mitigation, also increases inversely with the susceptibility to landslides defined by the natural factors.