

# Resum de Tesi Doctoral



DNI/NIE/Passaport	
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Títol de la tesi	MODELLING ENVIRONMENTAL PROCESSES IN URBAN CONTEXTS. LANDSLIDES IN ANDEAN CITIES.
Unitat estructural	INSTITUT UNIVERITARI DE RECERCA EN CIÈNCIA I TECNOLOGIES DE LA SOSTENIBILITAT (IS.UPO)
Programa	DOCTORADO EN SOSTENIBILIDAD
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(Mínim 1 i màxim 4, podeu veure els codis a <http://doctorat.upc.edu/gestio-academica/impresos/tesi-matricula-i-diposit/codis-unesco>)

## Resum de la tesi de 4000 caràcters màxim (si supera els 4000 es tallarà automàticament)

The available literature on Landslide Risk Assessment is less than the available on Hazard zonation topics. A reason is the inherent difficult to develop quantitative landslide risk assessment; this type of analysis requires also the previous assessment of susceptibility and hazard, and an estimation of vulnerability. When the assessments are available, their incidence on Territorial Panning is limited, because the link between hazard/risk and decision making is not clear, especially when the land use planning interventions are considered. In this thesis, the available literature has been analyzed, extracting four methodologies for quantitative assessment of landslide susceptibility, introducing modifications to be applied to Andean Urban areas. An initial modification proposed is the inclusion of propensivity factors, related to the anthropic activity as an important component in the urban context, or in general terms, in the populated areas. A Methodological approach has been proposed to obtain landslide susceptibility models in different scales, representing the spatial component of hazard. Additionally, the consideration of the temporal component is proposed through the analysis of the rainfall trigger factor. Considering the spatial and temporal components, is possible obtain a hazard model in urban scale, in probabilistic terms. As a last result, a methodology to derive risk maps as inputs for territorial planning is proposed, using the term tacit risk to be used as a management tool, to convert the risk models (technical information) in management decisions, through land use interventions. The specific contribution derived from this research, in regional scale, is the susceptibility models for the Chinchiná river basin (Caldas, Colombia), as an input for the Environmental Management Plan (Plan de Ordenamiento Ambiental POMCA). In the urban scale, the results from this research has been used as models for susceptibility, hazard, tacit risk and loss estimation by the city of Manizales (Colombia) in the development of the Territorial Management Plan (Plan de Ordenamiento Territorial POT 2015-2027)

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Signatura

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