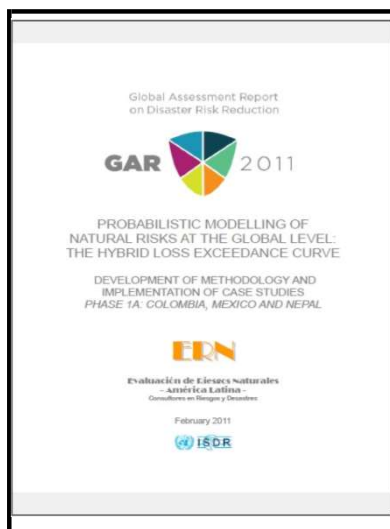


Título: Probabilistic modelling of natural risks at the global level: The hybrid loss exceedance curve

Ficha No. 13

RESUMEN

During recent decades, socio-economic impacts produced by disasters caused by natural phenomena are an indication of the high vulnerability of human settlements located in vulnerable areas in developing countries, as well as the levels of financial and social protection that must be provided in order to pay for associated economic losses, not only direct losses but also losses from a decrease in productivity of the agricultural and industrial sectors, a decline in tax revenues and a need to have resources available for dealing with emergencies. Vulnerability in the face of natural phenomena has increased during recent decades primarily in the developing countries throughout the world. Population growth, poverty, the growth of cities and infrastructure projects in general have increased the assets exposed in regions that can be affected by a large diversity of dangerous natural phenomena. In addition, a high level of population migration because of various social problems, unemployment, violence, insecurity of many different types and other factors force people to occupy land that is less and less suitable for human habitation, which increases exposure under undesirable conditions, leading to a considerable increase in levels of vulnerability and risk. Despite the research carried out on an international scale concerning the impact of disasters on development, formal incorporation of disaster risk in planning processes has been very timid up until now. Although most developing countries include in their budgets several allocations, primarily for preparation and dealing with emergencies, and in several cases efforts are being made to orient resources towards planning activities dealing with risk mitigation, in many countries do not calculate probabilistic losses from natural events as a permanent component of their budget process. However, if potential contingent losses are not accounted for, there is a lack of information required in order to consider and evaluate alternatives in order to reduce or pay for those losses. As a result, policies aimed at reducing risk do not really receive the attention that they require. An absence of adequate models to quantify risk in objective and non-relative terms leads to a series of important



AUTOR / ES	Evaluación de Riesgos Naturales - AL (ERN)
AÑO	2011
INSTITUCIÓN / REVISTA / ORGANIZACIÓN / EDITOR	International Strategy for Disaster Risk Reduction - UNISDR
PALABRAS CLAVE	Retrospective risk assessment, prospective risk assessment, hazard assessment, Colombia

COMPONENTES DE LA EVALUACIÓN

AMENAZA	<ol style="list-style-type: none"> Tipo de amenaza: Multiamenaza: Ciclones tropicales, sismo, inundación Métricas de intensidad: Peak Ground Acceleration (PGA), velocidad del terreno (PGV) y desplazamiento del terreno (PGD) / Profundidad inundación / Velocidad Viento Escala/resolución: Nacional Resultados: Mapas de amenaza integrada Localización: Colombia Metodología: CAPRA / CRISIS 2007 (Ordaz et al. 2007) / Pounding Model Períodos de retorno (años): -
VULNERABILIDAD	<ol style="list-style-type: none"> Tipo de vulnerabilidad: física, humana Metodología: HAZUS-MH MR3 (2003), Yamina et al. (2002) Tipología estructural: Pórticos de madera, madera industrial, pórticos acero, bodegas, pórticos concreto, adobe, etc. Representación: Función de vulnerabilidad; Aceleración espectral elástica vs. Valor esperado de la pérdida
EXPOSICIÓN	<ol style="list-style-type: none"> Tipo exposición: Edificaciones Portafolios: Infraestructura, residencial, comercio, industria, educación pública / privada, salud pública / privada, población Localización: Colombia Valor de reposición total: US\$ 632,634 Millones infraestructura / US\$ 526,531 Millones edificaciones Área expuesta (m2): 887,527 * 10³ infraestructura / 887,527 * 10³ edificaciones
RESULTADOS DE RIESGO	<ol style="list-style-type: none"> Modelo utilizado: Comprehensive Approach for Probabilistic Risk Assessment (CAPRA) Métricas de riesgo: Pérdida Anual Esperada (PAE), Pérdida Máxima Probable (PML) PAE: 3.7 % Sismo Colombia PML: 100, 250, 500, 1000, 1500 años de TR Representación del riesgo: Curva de Excedencia de Pérdida, Mapas de riesgo