IJPP
ISSN: 2239-267X

Glossary[1]

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SEISMIC RISK

is the result of interaction between the earthquake and the main characteristics of the community which is exposed to the event. It is defined as the set of possible effects that an earthquake can produce in a specific area, in relation to its intensity and its probability of occurrence. The determination of risk is linked to three main factors:

Seismic hazard

It expresses the probability that, in a given time interval, an area is affected by earthquakes that can produce damage. It depends on: the type of earthquake, the distance from the epicentre, and geological properties of the place. It does not depend on structural features of buildings and other constructions.

1 Some of the following definitions have a rather different meaning in a different disciplinary fields, or within a different approach. In this specific case, they reflect the point of view of urban planning.

Vulnerability

It assesses the possibility that a city or some of its buildings will suffer damage or changes after an earthquake. It measures the loss (or the reduction) of efficiency of an urban system and its remaining capacity to carry out and ensure the functions developed in 'normal' conditions. For a building, the vulnerability depends on the materials, its construction characteristics and the state of maintenance, and expresses their resistance to earthquakes. At urban scale it depends also on morphological and typological features (urban structure, settlement pattern, building types, etc.).

Exposure

It measures the importance of an object (a building or an urban settlement) exposed to the risk in relation, for example, to its function. It could be defined by quantifying how many people a building (or a city) generally hosts, as related to its function (housing, commerce, public or collective facilities, culture and entertainment, etc).

URBAN RESILIENCE

It is defined as the "capability to prepare for, respond to, and recover from significant multi-hazard threats with minimum damage to public safety and health, the economy, and security"[2] of a given urban area. Most discussion of urban resilience is focused currently on three distinct threats: climate change, natural disasters and terrorism.

REDUNDANCY

It is a word borrowed from engineering language, where it means the duplication of critical components or functions of a system (as in case of safety systems) with the intention of increasing its reliability.

In urban planning, in order to improve earthquake protection, it means the duplication of some strategic components (such as alternative pathways, safe open spaces, or strategic buildings) to assure an efficient functioning of the urban system even in the case when some components collapse after a catastrophic event.

2 Cfr. Wikipedia

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