

SUSTAINABLE DISASTER RISK REDUCTION THROUGH RISK SENSITIVE LAND USE PLANNING

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There are some Ex Ante and Ex Post tools to deal with risk and risk reduction in urban areas (Figure 1). However, the most sustainable one is to incorporate Disaster Risk Reduction (DRR) measures in land use planning practices. Risk sensitive land use planning (RSLUP) is the most promising approach for this end. This is because of the fact that the DRR and RSLUP are almost similar in nature. They both are systematic, future oriented, proactive, and decision oriented. However, Land use planning is a complex multidisciplinary procedure that is affected from and effects on a broad range of conditions that, in some extent, are explained in this study. At first, a definition and the basic procedure of RSLUP as well as some ideas about the interaction between sustainability, resiliency, and DRR indicators and how they may be considered in RSLUP are given. Then the position of RSLUP in international agreements such as Hyogo Framework for Action (HFA) and its successor Sendai Framework for Disaster Risk Reduction are explained.

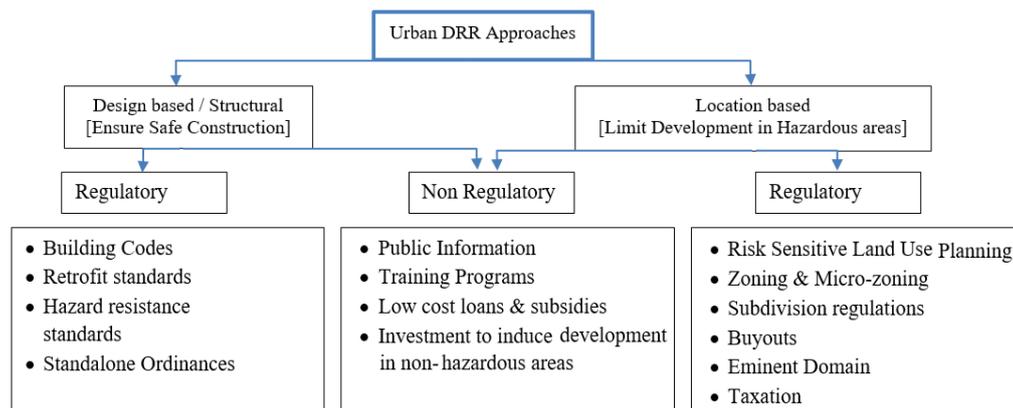


Figure 1. Classification of DRR Tools (adapted from World Bank and EMI, 2014).

Then a brief explanation on Strategic Environmental Assessment (SEA) and the criteria it has to meet to be suitable to be used as a prerequisite for RSLUP is given.

The most fundamental part of generating a risk sensitive land use plan is to identify and to assess the relevant risks in the study area. Therefore, in the next section of paper a methodology for identification of the hazards as well as how to assess each one and to prepare the risk map to be used as a factual foundation for RSLUP is given (Figure 2). Detailed methodologies for three common hazards (i.e. seismic, flood, and liquefaction hazards) are provided in subsections.

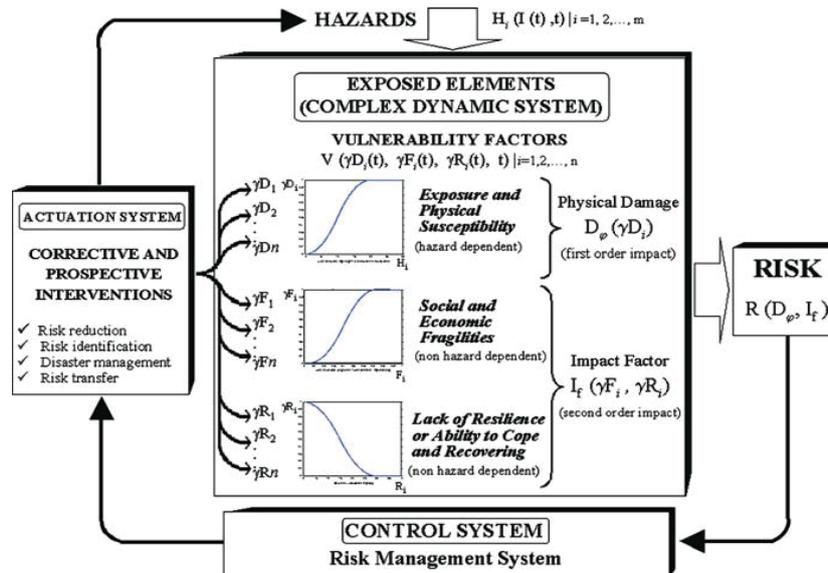


Figure 2. Theoretical framework and model for holistic approach of disaster risk (adapted from Carreño et al., 2007).

RSLUP can be considered mostly as a risk prevention tool but it also has some risk transfer parts in it. The residual risk would transfer to different stakeholders like government organizations, city corporations as well as NGOs and people. These trade-offs are the main incentives and disincentives for the end-users and as a result for RSLUP to be successful at operation phase. Next section of paper deals with a stakeholder participation approach to obtain a consensus based foundation for RSLUP to be built on it. Although the RSLUP reduces some of existing risks, it can also create some new vulnerabilities that has to be addressed carefully by related stakeholders.

At the end, based on experiences from Dhaka city in Bangladesh, some obstacles in the way of generation and mainstreaming the RSLUP are introduced and discussed about.

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