

Urban Planning and Architecture Design for Sustainable Development, UPADSD 14- 16 October 2015

How can be disaster resilience built with using sustainable development?

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Abstract

Cities in the developing world are facing increased risk of disasters and the potential of economic and human losses from natural hazards is being exacerbated by the rate of unplanned urban expansion and influenced by the quality of urban management. The use of information and communication technologies (ICTs) by citizens after a disaster increases resilience against disasters. In this context, this paper's research question is "How to build disaster resilience via sustainable development?". Therefore, the aim of this study is to increase pre and post disaster resilience by using ICTs to ensure citizens play an active role in disaster management.

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Peer-review under responsibility of IEREK, International experts for Research Enrichment and Knowledge Exchange

Keywords: Urban planning; disaster resilience; sustainable development

1. Introduction

The Report of United Nations Development Programme (UNDP) Bureau for Crises Prevention and Recovery (2004) pointed out that 75 % of the World's population lives in an area affected at least once by natural disasters between 1980 and 2000. Furthermore, at least one hazard periodically affects billions of people in more than one hundred countries. 158,551 people died related to earthquakes and its indirect hazards in the world between the years of 1980-2000. Approximately 12 % of these deaths are constituted in Turkey at the same period.

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Urbanization and the overgrowth of the cities are the major global changes since the beginning of the Industrialization period. According to Uitto (1998) at the start of the 20th century, there were only eleven metropolitan areas with more than million inhabitants. However, at the end of the century it is estimated that 400 cities in the world have over one million inhabitants each. Furthermore, twenty-eight cities have over eight million people two-thirds of which are in developing countries. The complexity and the large scale of people that crowd around large and mega cities create a new intensity of risk factors.

The Report of UNDP for Crises Prevention and Recovery (UNDP, 2004) shows the destructive effect of natural hazards at the beginning of the 21st century. Particularly, developing countries face great risk from disasters because of the rapid and uncontrolled growth of cities. For example, Turkey experienced some major earthquakes at the end of the 20th century, which caused the death of at least 110.000 people, about 250.000 injuries, and 600.000 building damages.

Controlling rapid growth and rearrangement of the social, economic and physical conditions of cities are important urban planning problems especially for developing countries. Unfortunately, lack of sufficient qualifications of administrative constitution causes a defect for urban planning which the administrators direct the planning process. While these deficiencies affect preparation of disasters negatively, inhabitants and administrations are not sufficiently aware of the consequences of possible natural hazards.

There have been some struggles to form a hazard resistant society, especially in developing countries; however, there is not a certain achievement for many countries to prove a hazard-resistant society yet. Lack of sensibility of citizens and institutions for natural hazards and its consequences obstruct an efficient intervention in hazard-prone areas.

Cities in the developing world are facing increased risk of disasters and the potential of economic and human losses from natural hazards is being exacerbated by the rate of unplanned urban expansion and influenced by the quality of urban management. In developing nations, as well as in Turkey, a number of factors, such as uncontrolled growth of cities, poor design and building techniques, inadequate supervision of the construction process and lack of enforcement of land use regulations, increase the amount of damage caused by earthquakes. Major hazards and sustainable development figure prominently today in both the language and fields of action of public policies. Identifying and managing risks, resilience levels, and associated economic stakes on the one hand, and planning for the environmental, economic and social future of an area and its population on the other, appear to be two closely related concerns. It would thus seem appropriate to define and examine the possible link between major hazards and sustainable development. Today information and communication technologies (ICTs) are used in many areas to facilitate and accelerate our lives as a part of sustainable development. Public, private and civil society sectors already use existing ICTs, offering the potential to reach broad populations, and engaging them directly in processes of decentralized decision-making. This engagement provides reducing vulnerability to risk and improve disaster resilience. The use of ICTs by citizens after a disaster increases resilience against disasters. In this context, this paper's research question is "How to build disaster resilience via sustainable development?". Therefore, the aim of this study is to increase pre and post disaster resilience by using ICTs to ensure citizens play an active role in disaster management. The case area is Izmir, in Turkey.

2. Current Problems of the Urban Areas - Resilience and Sustainable Development

Rapid urbanization and overgrowth of cities is an important obstacle of healthy development in developing countries. The city authorities should make some effort to solve this problem. Enlargement of urban settlements cause over concentrated areas in terms of population and economy and create a potential risk due to natural hazards. This risk is changing rapidly with time, location, exposure, vulnerability and resilience (Bademli, 2001; Balamir, 2001; Sengezer, 2005).

Despite of the all-serious efforts to mitigate natural hazards, success is limited due to the seriousness of the problems and deficiencies in implementation especially in developing countries. In Turkey, these problems cause inadequate conditions to produce and manage the hazard mitigation strategies and implementations of the projects. This process decreases the resilience of Turkish cities. Therefore, this paper takes into consideration these problems and their consequences for settlements.

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