

D o s s i e r E d i t o r i a l

Cities at risk

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Concerns related to natural hazards have become more predominant in the last decades not only because they increased in number, but also because of their large scale impacts on settlements which have been developing according to rapid population increase. Innovation technologies in construction sector have enabled development to more robust structure at both building and urban scales. However, once considering increasing losses caused by natural disasters, there has been a need of emergence new approaches in evaluation of **Cities at Risk** regarding to their vulnerability and their resilience and consequently disaster mitigation activities.

World population has recently reached to 7 billion where the World Bank announces that about 51% of the world population is living in urban areas. In detail, the growth rate of urban population in developing countries is at least four times higher than developed countries. This “population bomb” so called by Paul Elrich in 1960s, has critical impacts on natural environment by the means of consumption of resources. Furthermore, the concentration of this population in hazard-prone settlements is increasing dramatically.

The notion of disaster covers a larger meaning than the collapse of buildings. Disaster is defined as a large scale destruction of physical environment which would affect social and economic life due to the lack of social organization, coordination and cooperation. Hence, it is worthy to note that evaluation of **Cities at Risk** requires an integrated approach beyond the physical failures. Since cities are the products and milieu of social, historical, political and economic configurations, the root causes of vulnerability and resilience are embedded into certain niches which are not always visible in “normal” conditions. Furthermore, referring to recent disastrous events, cities are not only the exposed elements against hazards but also, in some extend, they have the capability to produce threats on natural environment and human life. On the other hand, new set of challenges has arisen on risk governance once considering disconnectedness of actors despite all available resources. This may trace back to either solid administrative system or lack of risk awareness or low capability in response to actual and expected disturbance. Whatever the reason might be, a perfect integration

and interaction among entities seems crucial in producing mitigation strategies to enhance resilient communities.

Consequently, this special issue of A|Z ITU Journal of the Faculty of Architecture aims to delineate **Cities at Risk** from various perspectives in order to contribute to our common comprehension in assessment of challenges and opportunities of the new era. Besides the state-of-the-art in the field, recently developed methods and implementation tools are given with relevant case studies. The expected output of the special issue is to gather and to discuss **Cities at Risk** in a synthetic way to reach effective actions in mitigation.

Ortwin Renn and **Andreas Klinke** develop an adaptive and integrative model of risk governance and provide its application on urban planning. The paper launches with the characteristics of risk knowledge (complexity, scientific uncertainty and socio-political ambiguity) which affect the perspective and attitude of decision makers and all other stakeholders who have crucial roles in risk governance. Consequently, at the first phase of risk governance (pre-estimation), it is essential to gather various risk concepts which would be integral parts in urban planning process. In the phase of interdisciplinary estimation, **Renn** and **Klinke** draw attention to the need of matching the physical risk assessment with human perception. In the risk evaluation phase, the model suggests the production of options regarding to societal tolerability. In the fourth phase, the authors define risk management as a stage where different risk reduction measures are designed and assessed according to risk characteristics and stakeholders' perception. Referring to the all four phases of the model, **Renn** and **Klinke** emphasize the improvement of risk communication to resolve complex risk problems with dialogue and public participation.

Juergen Weichselgartner and **Ilan Kelman** urge readers to re-think how “*resilience*” is defined in theory and how it is implemented into practice. The authors underline their concern as the over-usage of the term of resilience in different research fields by different connotations. Therefore, they criticize the attempts of measuring resilience in urban areas, even though a precise conceptual frame has not been set yet. **Weichselgartner** and **Kelman** discuss *critical challenges* on resilience *from a descriptive concept to a normative agenda*. They emphasize tailored practices for urban resilience rather than a generic approach, because quantification of resilience into city indices *hide far more than it discloses*.

In the paper of **Adriana Galderisi**, concept of resilience is evaluated with its multifaceted form in a deep focus using resilience definitions which have been produced in the last decade in the different research fields (ecology and sustainability; risks and disasters; economy; and climate change). **Galderisi** emphasizes the importance of resilience as a key concept for increasing the coping capacity of urban areas which are facing to risks and she points out the need of an interdisciplinary and integrated approach to urban resilience. The Urban Resilience Model proposed by the author represents a tool for enabling planners and decision makers to frame a comprehensive approach which would facilitate coping to natural and technological extremes that cities are facing to.

Kalliopi Sapountzaki and **Christos Chalkias** draw the attention to the amplification of disaster risks owing to natural hazards, due to chronic social

risks owing to economic debt crisis and recession in Greece. The notes of the authors clearly show how vulnerability of a component can propagate through urban system to increase susceptibility confronting to hazards. In the paper, regarding to the consequences of economic crisis, the increase in socio-economic and institutional vulnerabilities is illustrated. **Sapountzaki** and **Chalkias** refer unemployment, dismantling of the social welfare system, social exclusion and socio-spatial inequalities in Athens to reveal the shrinkage in coping capacity of the community. Regarding to the institutional system, they denote the decline of risk mitigation caused by the loss of *personnel, financial support, technical means and skills* would be critical for disaster management. Furthermore, the authors highlight the reduction in public expenses which directly affects public health services.

Alessandro Demarchi presents an alternative or “*experimental*” method for seismic risk assessment in the case study of Istanbul and its famous pedestrian road: Istiklal Street. The author delineates the proposed method as *calibrated on more precise information* peculiar to spatial characteristics of the subjected area. Besides the generic risk components of urban pattern; visitors profile and pedestrian mobility in the Istiklal Street at different time slots are considered. In the case study, **Demarchi** refers function-accessibility relationship of critical facilities and permeability of the current road system in the proposed method. The findings of the paper clearly show that the dominant characteristics of certain zones (commercial, touristic, entertainment etc.) in the urban system can lead the overall risks either to positive or to negative way.

Funda Atun and **Scira Menoni** introduce the ENSURE project (Enhancing resilience of communities and territories facing natural and na-tech hazards) which *provides an operational tool for the assessment of vulnerability to natural disasters*. In the paper, the implementation details of the proposed methodology are given in the case of Istanbul. The authors deliver four matrices to define vulnerability and resilience: *mitigation capacity, physical vulnerability, systemic vulnerability* and *resilience response capacity* where spatial and temporal indicators are set in. **Atun** and **Menoni** suggest the policies on urban planning to be efficient tools in integration of urban development with disaster risk management.

Seda Kundak, **Handan Türkoğlu** and **Alper İlki** discuss earthquake risk mitigation in the frame of risk perception of Istanbul inhabitants. They emphasize that risk reduction activities could be successful when the community is involved in. Consequently, the authors investigate and compare the risk perception and earthquake preparedness level of Istanbul inhabitants in 2008 and 2013. In the paper, three focuses are described as: the changes in risk perception in the five year period, the effect of personal characteristics on risk perception, and the availability of spatial features in evaluation of risk perception of individuals. **Kundak**, **Türkoğlu** and **İlki** draw attention to the positive influence of dissemination activities on individuals in taking precautions.

The collection of papers in this special issue entitled **Cities at Risk** provides crucial insights into the ongoing discussions on risk related issues in the scope of urban areas. The papers underline that innovative, inclusive, interdisciplinary and integrated approaches should be developed to enhance communities which are facing to risks. Another important conclusion from the papers is that risk assessment, risk management and risk governance tools

should be customized respecting to site conditions, economic prosperity, societal and cultural values of cities and countries. Hence, in the process of urban development and risk management; practitioners, scientists and decision makers should provide a larger room for public participation.

As the guest editor of this special issue on **Cities at Risk**, I would like to express my sincere gratitude to Ortwin Renn, Andreas Klinke, Juergen Weichselgartner, Ilan Kelman, Adriana Galderisi, Kalliopi Sapountzaki, Christos Chalkias, Alessandro Demarchi, Funda Atun, Scira Menoni, Handan Türkoğlu and Alper İlki for their valuable contributions to A|Z ITU Journal of the Faculty of Architecture. Furthermore, I would like to thank to the editors of the journal for this timely publication, as this issue is going to be distributed in the 23rd SRA-Europe Conference which will be held in the Faculty of Architecture, Taşkışla Building on June 16-18, 2014.

While we were preparing this special issue for publication, an explosion occurred in the Soma Coal Mine on May 13rd 2014. Soma Mine Disaster is the worst coal mine disaster in our history with more than 300 miners who lost their lives 2 kilometers below the surface. I am deeply sorry for victims and their mourning families. I express my condolences to all of us.