Building on disasters

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Disasters occur when a hazardous event strikes a vulnerable human settlement whose inhabitants have insufficient capacity to respond. Natural hazards include earthquakes, wind storms, landslides, wildfires, volcanic eruptions, droughts, tsunamis and flooding. The growing vulnerability of human settlements to natural hazards makes disasters more likely and more severe. The numbers confirm this trend: between 1975 and 2005 there was a five-fold increase in disasters, and over the past 10 years, approximately 2.6 billion people have been affected, compared with 1.6 billion during the previous decade.

In cities, disaster risk has increased as a result of (a) high population densities and the concentration of housing, infrastructure and services; (b) the expansion of communities into disaster-prone areas; (c) environmental deterioration; (d) the locating of residential land close to industrial or other dangerous sites; and (e) the large numbers of poor communities. These problems are compounded by a lack of capacity on the part of the construction and planning agencies both to keep up with rapid urbanisation and to develop and enforce adequate standards and policies.

Around 85 percent of people exposed to disasters live in low- and middle-income nations; and within these countries, the poor and marginalised are the most affected. Poor households often have no choice but to live in precarious conditions. Currently, more than one billion people worldwide live in slums, a number that is expected to rise to over two billion in 2030. Solutions are thus urgently needed.

The task of responsible engineers, architects and planners is to develop sustainable and secure communities. Given the increase in the number of disasters and the inherent complexity of adequate responses, such a task cannot be fulfilled unless these professionals integrate disaster risk management into their everyday work. This includes instituting prevention, mitigation and preparedness measures before and after disasters strike. However, post-disaster reconstruction tends to fail to improve the security of people at risk and to “build back” people’s previous vulnerability. Moreover, to date, pre-disaster development projects have only too often ignored existing risk.

The title of this TRIALOG issue — **Building on Disasters** — hints at the idea that disasters could present a window of opportunity (a) to create safer and more sustainable human settlements in their aftermaths and (b) to positively influence subsequent developments. However, disaster risk management cannot be limited to post-disaster concerns, as “advances” in development in themselves have a huge impact on disaster risk, both in positive and negative terms. Hence, disaster risk management must also become an integral part of development assistance for housing and human settlement planning.

The papers included in this issue present practical experiences from Africa, Asia and Latin America that deal with a wide spectrum of disaster types. The first paper by Christine Wamsler analyses disasters from a local perspective. Slum dwellers in El Salvador were asked about their experiences and perceptions regarding disasters, as well as what they need to deal effectively with risk and disaster impacts. Causal loop diagrams, used for the analysis of the local perspectives, show related key variables and causal relations. The outcomes yield important insights into how to improve assistance in the fields of social housing and human settlement planning to sustainably reduce disaster risk.

The remaining papers of this TRIALOG issue were written from the perspective of donor or implementing organisations. Tiziana Rossetto provides a general overview of the mitigation and prevention measures that should be considered within development and reconstruction projects in the fields of housing and human settlement planning. She proposes a nine-step methodology for integrating risk reduction into the project development cycle.

Alfredo Stein reports on a reconstruction project in Honduras implemented after Hurricane Mitch in 1998 and the experiences gained by the bilateral and multilateral agencies involved. In this case, the donors’ collaborative efforts had a positive and sustainable impact on the efficiency of the Honduran social housing sector. The lessons learned suggest that the notion of “building on” disasters can become reality.

The following papers focus on different reconstruction aspects and the inherent conflict between the pressure for rapid delivery of basic services, such as shelter, and the rather long-term aim of “building back” better. Three papers relate to the Asian tsunami of December 2004, of which the first two illustrate post-tsunami reconstruction experiences in Indonesia. Florían Steinberg elaborates on the problems and barriers experienced by numerous aid agencies in rebuilding people’s housing and livelihoods. He particularly examines community-based working approaches, which can be essential in accomplishing the task of “building back” better. However, the author points out that they can not be a “panacea” for all governments’ or contractors’ shortcomings. Regan T. Potangaroa analyses the engineering and social complexities of providing post-disaster housing, illustrating these with respect to cladding and tsunami-proofing. He argues that poor understanding and communication of these complexities often impede the success of related projects. The third paper on post-tsunami reconstruction, by Io Karydi, is based on her AA thesis and suggests a comprehensive recovery plan for the coastal ribbon of Hambantota, Sri Lanka, where the tsunami impacted small-scale fisheries. The proposal represents an alternative to the rehabilitation strategies suggested by the local urban development authority.

The paper by Siblike Khamala Makhanu discusses different approaches to mobilising resources for development and reconstruction projects in Kenya, Africa. While many developing countries benefit from pre- and post-disaster donor funding, they cannot meet the costs of the required reconstruction and sustainable development efforts alone. The author emphasises the potential of indigenous approaches for resource mobilisation to support more disaster-resilient development in the country.

Colin H. Davidson and Cassidy Johnson’s viewpoint paper calls for better information management and proper databases to achieve improved and sustainable reconstruction projects. In this context, it is worth mentioning that the International Council for Research and Innovation in Building and Construction (CIB) recently established a task group on “Disasters and the Built Environment”, which also aims to create better databases in the future.

Finally, Jens Wodzak reports on the third international I-Rec Conference on “Post-Disaster Reconstruction: Meeting Stakeholder Interest”, which took place in Florence in May 2006. Given the increase in the number of disasters and their often dramatic impact on human settlements, such platforms for exchanging experiences are crucial for raising awareness among engineers, architects and planners in terms of accepting and fulfilling the difficult responsibility of providing sustainable and secure communities. This relates not only to physical/structural aspects of such communities, but also to environmental, socioeconomic and institutional ones.

It is a great challenge to make cities to become the solution rather than the cause of disaster risk. Some of the key issues that need to be tackled include: improved land-use management, urban planning and governance, disaster-resistant constructions, as well as related building and planning codes, frameworks and policies. It is hoped that this issue of TRIALOG will contribute to this process by spreading awareness and stimulating further discussion regarding integrating disaster risk management into housing and human settlement planning.

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