

Capacity building for disaster risk reduction

Introduction

An increasing number of devastating natural disasters have occurred during recent years. Climate change is set to worsen their incidence and impacts even further making the risk of disasters a global concern. The increased extent and intensity of disasters has resulted in higher numbers of mortalities, social problems and economic losses. The growing complexity of disasters in terms of their diversity, magnitude, frequency and uncertainty, requires that even countries previously considered not being at high risk from disasters, have had to re-evaluate and strengthen their risk reduction strategies and capacities. Disaster risk reduction strategies aim to avoid (as in prevention) or limit (as in mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development (UNISDR, 2004).

Disaster risk reduction strategies can be hazard-specific, sector-specific or commonly applicable across different types of disasters and involve multi-sectorial disciplines regardless of their nature and scale. Amongst them, capacity building has been widely accepted as a disaster risk reduction strategy that builds the resilience of targeted groups for better prevention through developing the preparedness and response strategies against disasters, which can be focused at institutional, community and individual levels. Capacity building for disaster risk reduction sits at the interface of policy making, engineering and scientific research, due to the interdependencies and cascading impacts of disasters, and calls for a close and continuous exchange within these disciplines in order to provide effective and long-term solutions (UNISDR, 2013).

This special issue was initiated as part of the CARE-RISK workshop (capacity building to reduce disaster risk in the UK and Malaysia) funded by the British Council Researcher Links programme. As disaster mitigation and management has been identified as one of the targeted areas of the *Built Environment Project and Asset Management Journal* the guest editors are pleased to publish this special issue that focuses on capacity building for disaster risk reduction.

Overview of the special issue

In the first paper, Kim and Park use a building simulation approach in conjunction with a hypothetical case study using BIM software to identify a primary housing information dataset to make decisions for stakeholders to choose the most cost-effective refurbishment solutions for houses vulnerable to flood risk in the UK. The study finds that the housing information dataset includes factors such as physical dimensions, energy performance, associated costs, risk level, weather data and other relevant data, which should be prepared at the outset of a project to determine the most cost-effective refurbishment solutions for houses vulnerable to floods.

Based on the community perspective, the authors of the second paper Wedawatta, Kulatunga, Amaratunga and Ahmed, examine the disaster risk reduction infrastructure requirement for South-Western Bangladesh. Capacity building of the infrastructure and structural protection such as developing multi-purpose

cyclone shelters, permanent embankments and transport networks are identified by the community as key measures to reduce the risk from disasters. The dependence of the coastal community on the cyclone shelters and embankments for disaster risk reduction was highlighted from the study.

Rose and Jayawickrama examine the role of local communities in responding to crises and disasters in the third paper. The paper presents rare insight into some of the ways local communities deal with disasters and view international responses to disasters and conflicts through the use of local case studies. The findings highlight the importance of international institutions to collaborate with the local communities, which would lead them to learn from the community as well as build their own capacity for developing context specific, and effective disaster risk response strategies.

In the fourth paper, Pathirage and Al-Khail explore the vulnerability of the Emirati energy sector from natural and man-made hazards. The findings identify terrorism, atmospheric and tectonic hazards as the main risks within the Emirati energy sector. Improving human resource management through better awareness, training and practices are identified as the three main capacity building areas for the Emirati energy sector.

Liu and Li examine the impact of eco-roofs on urban flash floods by using GIS simulations in the fifth paper. The findings indicate that eco-roof systems generate varying degrees of mitigation to urban flash floods with different return period storms, hence identifying roof technologies as one of the best practices of urban flood mitigation.

Wedawatta and Ingirige, in their paper, consider resilience-building measures in the case of small construction companies. They take the overarching resilience to mean active resilience in a dynamic environment that incorporates the situational awareness of a place and then consider adaptation actions considering both the current and future dynamism within the environment facing small construction firms. Based on two previously documented cases and some of the very recent literature, the authors present an updated conceptual model for resilience determination within the context of SMEs in construction. Considering that in many countries, construction SMEs account for more than 90 per cent of the proportion of the businesses, the research presents a conceptual basis to design a more detailed study.

The papers in this special issue highlight the increasing imperative for, and the multi-faceted nature of, capacity building for disaster risk reduction. Different aspects of capacity building for disaster risk reduction, ranging from social, technological, economic, political and environmental aspects are identified in the papers in this special issue. Whilst highlighting the importance of capacity building for disaster risk reduction, it is hoped that this special issue has contributed to knowledge and practice by discussing a diverse range of building capacities to avoid or limit the impact of disasters.

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