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Building Urban Resilience for Disaster Risk Management and Disaster Risk Reduction

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Abstract

Disaster Risk Management (DRM) and Disaster Risk Reduction (DRR) emerged as systematic approaches to reduce the impact of climate change on the built environment. However, post 2015 United Nations (UN) disaster management and emergency policies failed to capture the dynamics of hazards, exposure and vulnerability essential for building urban resilience. As part of an ongoing PhD study, this paper aims to identify common principles for DRM and DRR in the context of urban resilience, towards building coherence between the 2015-2030 Sustainable Development Goals (SDGs) for the built environment and the Sendai Framework for Disaster Risk Reduction (SFDRR). The paper adopts a constructivist position to investigate the historical emergence of DRM and DRR in pre-and-post the year 2015. Learning lessons, identifying gaps and future challenges, a correlational study of the three-stage disaster preparedness process of recovery, rehabilitation and reconstruction in DRR and DRM is conducted, against the indicators of Target D for the SFDRR, and Goal 11 for the SDGs three main constructs: disaster damage, critical infrastructure and disruption of basic services. The outcomes of this study show the absence of indicators to monitor progress on evolving disasters and underlying risk drivers. A Preparedness Framework is developed in this paper with recommendations to integrate the UN Habitat Urban System Model Approach for urban resilience, and develop risk-resilient DRM and DRR frameworks for sustainable built environments.

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1. Introduction

The disastrous impact of climate change on urban livelihoods and natural biodiversity systems has long been observed worldwide. Shaped by the type of hazards and degree of exposure, extensive disaster risk derived by urbanisation, environmental degradation, socio-economic inequality, and poor urban governance is witnessed to accumulate larger losses in mortality, economic and physical damage. (Shaw, Pulhin et al. 2010:198).

Over the past ten years, approximately 700 thousand people have lost their lives, over 1.4 million have been injured and 23 million have been made homeless because of disasters. At the same time, the Hyogo Framework for Action (HFA) 2005-2015: building the resilience of Nations and communities to disasters was adopted by the World Conference on Disaster Reduction, but the layer of extensive risks was ‘not captured by global risk modelling, nor are the losses reported internationally’. (UNISDR 2015:90). ‘Climate change may not be responsible for the recent skyrocketing cost of natural disasters, but it is very likely that it will impact future catastrophes’ (NASA 2016). The variations of risk drivers between the countries globally reflect the uneven social, economic and governance construction of hazards, risk and vulnerability.

There have been various attempts in the year 2015 to address challenges related to development, climate change and disaster risk losses. The Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030 was endorsed by the UN General Assembly and adopted by 187 countries as a 15-year, voluntary, non-binding agreement with four priorities and global seven targets, which aim at the reduction of disaster risk and losses in lives, livelihoods and health. The year 2015 also witnessed the adoption of the Sustainable Development Goals (SDGs) and the Paris Climate Change Agreement (COP21), followed with the 2016 New Urban Agenda (NUA) Quito Declaration on Sustainable Cities and Human Settlements for all.

However, Peters et al (2016) stated that ‘delivering this global vision by 2030 in a sustainable and inclusive way, requires that we act upon all the major frameworks negotiated and agreed throughout 2015 and 2016’. Considering that the term ‘resilience’ is addressed coherently across the SFDRR, SDGs and HABITAT III frameworks, the roadmap for action is formulated in different contexts and scales. That would require joined-up monitoring mechanisms for indicators to achieve progress on the reporting process, and enable a track on building resilience. (ODI, 2016:10).

As part on an ongoing PhD, this paper aims to identify common principles for DRM and DRR in the context of urban resilience, towards building coherence between the 2015-2030 Sustainable Development Goals (SDGs) for the built environment and the Sendai Framework for Disaster Risk Reduction (SFDRR). Adopted at the United Nations Conference on Housing and Sustainable Urban Development in October 2016 (Habitat III), NUA indicates in paragraph (9) that its implementation will contribute to ‘the implementation and localization of the 2030 Agenda for Sustainable Development in an integrated manner, and to the achievement of the Sustainable Development Goals and targets, including Goal 11 of making cities and human settlements inclusive, safe, resilient and sustainable’. (UN HABITAT 2016:3).

Section 2 of this paper will introduce the methodology applied to frame the research design structure. Followed with Section 3, the historical emergence of DRM and DRR ideologies in UN frameworks is investigated pre-and-post the year 2015. A correlational study between DRR and DRM is explained in Section 4 to identify the shared principle of disaster preparedness, recovery, rehabilitation and reconstruction. In Section 4.1, a constructivist approach is applied to understand how the three stages of preparedness process take place against the three main constructs of Target D for the SFDRR, and SDG Goal 11, Target 11.5.2 (disaster damage, critical infrastructure and disruption of basic services). The constructs of the indicators terminologies will be analysed to understand how data losses are collected across disaster risk timeframe, scale, and assessment process. Section 5 will introduce the UN Habitat Urban System Model Approach for urban resilience, by presenting resilience socio-economic dimensions and wider city disaster plan for risk management as an integrated approach to bridge the gap in SFDRR, SDGs. The paper concludes with Section 6, learning lessons, identifying gaps and future challenges.

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