



7th International Conference on Building Resilience; Using scientific knowledge to inform policy and practice in disaster risk reduction, ICBR2017, 27 – 29 November 2017, Bangkok, Thailand

Profiling Informal Settlements for Disaster Risks

Matthew Abunyewah^{a*}, Thayaparan Gajendran^a, and Kim Maund^a

^aFaculty of Architecture and Built Environment, University of Newcastle, Callaghan, NSW 2308 Australia

Abstract

Informal settlements, where mostly the urban poor reside, tend to be located in hotspots of natural hazards such as floods, fire, earthquakes and tsunamis. The devastating impacts of these natural hazards on such settlements can be attributed to the higher levels of physical, economic, social and environmental vulnerability in conjunction with inadequate and poor level of disaster preparedness. Conceptualizing a detailed risk profile, in the context of informal settlement characteristics presents a starting point to which the impacts posed by environmental hazards can be addressed effectively. This paper develops a theoretical framework through literature review coupling the concepts of “disaster hazards”, “vulnerability” and “informal settlements”. The findings suggest that the policy environment (environmental/land use planning and communication) impacting the informal settlement characteristics (demographic, financial, social/poetical and locational/environmental) is key to managing disaster risk profile in informal settlements. The paper concludes by identifying five theoretical propositions that can assist in disaster preparedness.

© 2018 The Authors. Published by Elsevier Ltd.

Peer-review under responsibility of the scientific committee of the 7th International Conference on Building Resilience.

Keywords: Informal Settlement; Vulnerability; Disaster Risk Reduction; Resilience; Policy Environment

*Corresponding author: Tel: +61451183873

Email: Matthew.Abunyewah@uon.edu.au

1. Introduction

Informal settlements are dwelling places of around a billion people in the world. In other words, one-seventh of the world’s population and one-third of the world’s urban population live in slums respectively [25]. The population transformation projections based on the current rate of world’s urban population growth suggest that an estimated 66 percent of the population will live in urban areas by 2050 from 54 percent in 2014 [28, 29]. Literature suggests that urban population growth rate occurs primarily in small and medium sized cities [33] where informal settlement expansion occurs in hazard prone areas such as flood plains, valley, marshy areas and watercourses [7, 22]. High population density coupled with deprived locations of informal settlement as a result of urban growth compounds

existing vulnerability. Risk is seen as a function of disaster hazard, vulnerability and exposure [14]. Vulnerability defies a precise and objective definition but for the purpose of this paper, vulnerability is defined as the susceptibility of a system to disaster hazards due to its inherent characteristics. Also, exposure refers to degree and extent to which a system is wide-open to disaster hazards. The level of vulnerability in informal settlements has made it imperative to assess, analyze and present its risk profile to facilitate effective hazard risk management.

Risk assessment, mitigation, and evaluation are the three major embodiments of hazard risk management [30]. Risk assessments provide a strong basis to commence the process of reducing the negative consequences posed by natural hazards and involves hazard identification and associated risk impacts. The negative effects posed by hazards require prioritization, implementation, and maintenance of appropriate hazard risk-reducing measures recommended from the risk assessment process. The recommended actions to mitigate the risk from assessment are then evaluated to ascertain its effectiveness after implementation.

However, hazard risk management in informal settlement has received little attention in literature potentially due to its problematic nature [36] and also, these settlements are located outside the planning schemes of urban areas. Moreover, the informal settlements are exposed to high levels of vulnerability with limited coping capacity. Against this backdrop, this paper constructs a theoretical framework, through a literature review, coupling the concepts of “disaster hazards”, “vulnerability and “informal settlements” to develop better understand disaster risk management in informal settlements.

2. Methodology

This paper is based on extensive search and review of relevant articles necessary for the study. A total of 193 published articles on hazard vulnerability and informal settlements were downloaded from high standard databases such as Scopus, Science Direct and Environment complete. The database publishers indicate that these databases are among the high standard databases that provide high quality articles in sciences, social sciences and arts and humanities. Selection of articles for inclusion in the study was manually done and was based on three major criteria: 1) the article’s relevance to the study 2) the article’s applicability to disaster hazards or informal settlements and 3) downloaded articles have citations and references of authoritative scholars in informal settlements, hazard vulnerability and resilience. Downloaded articles were then reviewed and sorted using the set criteria.

3. Informal Settlements: Hazard Vulnerability Perspective

Informal settlements, slums, squatter settlements, unplanned towns and shantytowns are terms that are used interchangeably in literature. Conversely, the definition of the term informal settlement is arguable and subject to much academic debate [18]. Informal settlements are places built outside land-use scheme and without planning permission. They are composed mainly of makeshift houses that deviate from the standard building regulations. More so, areas marked as informal settlement have inadequate access to safe water and sanitation facilities, irregular supply of electricity and road for emergency access. Similarly, they are an overcrowded population and an insecure tenure of stay [37].

Over the world, the location of informal settlement on hazard risk areas has been discussed extensively in literature [17, 7]. In this paper, vulnerability of informal settlements to natural hazard is categorised into four areas namely: physical, economic, environmental and social vulnerabilities. The location of informal settlements (flood plains, marshy areas, low-lying areas and river courses) coupled with high population growth, poor planning and quality of housing [12, 7] and unpredictable strike of natural hazard renders them vulnerable to natural hazards.

Dwellers of informal settlements, mostly in-migrant, have low economic capabilities [10] that seriously impact upon their ability to prepare adequately for an impending natural hazard. A high percentage of in-migrants are low-income earners or unemployed rendering them incapable of renting a house or room in a properly laid out residential area. Their economic position pushes them to rent apartments in informal locations, as they have cheaper residential opportunities. In addition, the low-income characteristics of such people inhibit their ability to invest in structural mitigation measures to reduce hazard impacts.

Download English Version:

<https://daneshyari.com/en/article/7225929>

Download Persian Version:

<https://daneshyari.com/article/7225929>

[Daneshyari.com](https://daneshyari.com)