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## Integrated measures for managing permanent housing reconstruction

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### Abstract

Following major disasters, stakeholders appropriate substantial resources for permanent housing reconstruction to mitigate disaster risk and to facilitate sustainable community resilience to disasters. Many stakeholders have, however, identified permanent housing reconstruction as one of the least successful humanitarian interventions as many housing interventions fail to achieve their intended outcomes. As a result, there have been calls for evidence-based studies to provide guidance for policy-makers and practitioners towards effective management of permanent housing programmes. This paper seeks to identify the issues that influence the effective management of permanent housing interventions and the measures that could be applied to manage those issues. Data were collected through semi-structured interviews with experts in post-disaster reconstruction and analyzed with the aid of NVivo 11 software. The findings served to validate and extend the issues influencing effective implementation of permanent housing interventions which had been identified in earlier research. These issues have been thematically classified into human resource issues; workmanship and quality issues; monitoring and control issues; coordination and communication issues; logistics and supplies issues; financial management issues; and health and safety issues. The study further identifies and presents the integrated measures that can be applied by policy-makers and practitioners to manage these issues and thus promote effective permanent housing reconstruction programmes.

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## 1. Introduction

The impacts of disasters on the built environment range from physical to socio-economic and include fatalities, injuries and wide-spread destruction of property [1]. Extensive damage and destruction of housing, loss of livelihood sources and the slowdown, stagnation or reversal of economic growth are some of the consequences of disasters [2]. With housing being the greatest loss component to major disasters [1, 3], affected communities, particularly in developing countries, often become homeless, unsafe, unsecured and prone to severe humanitarian conditions.

Responding to major disasters, stakeholders channel resources for reconstruction programmes with substantial amounts allocated for permanent housing reconstruction (PHR) to mitigate disaster risk and to facilitate community resilience to disasters. Far from being about placing bricks and mortar to provide dwellings, PHR entails the quick provision of acceptably livable disaster resilient housing [4, 5]. As both a product and a process, it facilitates the long-term sustainability of the buildings, revival of the affected communities' socio-economic activities [6, 7], and also helps to improve beneficiaries' well-being [8].

However, PHR has been considered by many stakeholders as one of the least successful humanitarian sectoral interventions [9]. Several authors, including [7, 10], have identified the ineffective management of permanent housing reconstruction as a major cause for the failure of PHR interventions in achieving their intended outcomes. As a result, there have been calls for studies that provide appropriate measures to guide policy-makers and practitioners towards the effective management of PHR [10]. In previous, literature-based, studies [11, 12], the management issues that affect the effective management of PHR programmes were identified and thematically classified as human resource issues, quality and workmanship issues, monitoring and control issues, coordination and communication issues, financial management issues, logistics and supplies and health and safety issues. This study seeks to validate the issues identified in the literature and aims to elicit measures for managing these issues by undertaking an experts' opinion survey. The study findings validate the previously identified issues affecting the effective implementation of PHR and offer integrated measures for managing effective management of PHR in developing countries.

## 2. Methodology

Data were collected through seventeen (17) semi-structured interviews with multi-institutional experts in post-disaster reconstruction and recovery management with wide-ranging experience in developing countries (Sri Lanka, India, Indonesia, Malaysia, Nepal, Iran, Pakistan, Haiti, Bangladesh and Maldives), working with multi-lateral donor agencies, reconstruction management agencies, international non-government organisations (NGOs) as policy-makers, practitioners and researchers. The data were thematically analyzed with the aid of NVivo 11 software through which integrated measures for managing PHR were drawn.

## 3. Management issues affecting the effective implementation of permanent housing reconstruction

In previous studies [11, 12], a number of management issues affecting the effective implementation of PHR were identified. Findings from the study assert the presence of the issues which are thematically classified and outlined below:

### 3.1. Human resource issues

Findings from the study identify inadequate local manpower at strategic and implementation management levels to formulate adequate PHR policies and strategies as a crucial issue in PHR. High demand for experts and deployable skilled labour, the escalation of labour wages against the financial constraints of implementing organisations and corresponding high labour turn-over rates resulting in the protraction of housing implementation and leading to delays. The creation of tension points between local resource capacities and external resourcing to fill the human resource gaps coupled with migration difficulties faced by invited workers due to visa issues. Lack of job satisfaction and motivation are other human resource related issues affecting effective management of PHR. These issues serve to validate those identified previously from the literature [4, 7, 13].

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