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Analyzing the National Disaster Response Framework and Inter-Organizational Network of the 2015 Nepal/Gorkha Earthquake

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Abstract

This paper analyzes the activation of the National Disaster Response Framework (NDRF) following the 2015 Nepal/Gorkha earthquake. Among the important policy areas regulated by the NDRF is the mechanism for inter-organizational coordination and cooperation, including that with international organizations. Regarding this, inter-organizational network modeling is performed with the use of social network analysis to identify structural gaps and on-the-ground inter-organizational cooperation previously undetected by the Nepali framework and/or stand-by arrangement of humanitarian organizations. Furthermore, a brief analysis of humanitarian operations' performance and findings from the ground are also presented in the paper. The research found that the coordination mechanisms and mandatory emergency response operational activities outlined in the NDRF were partially implemented during the six months after the earthquake. As the network model suggests, the NDRF failed to capture the potential of local non-governmental organizations and communities as potential responders, although in reality they also collaborate with international organizations to provide emergency relief and may serve as potential key actors in post-disaster recovery.

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1. Introduction

In the intertwining efforts of multiple disaster management and humanitarian organizations, the search continues for the optimum cooperation process and coordination structure [1] [2] [3] [4]. This search is important due to the following challenges in the disaster and humanitarian fields: 1) an increase in disaster occurrence and scale [5] [6] [7] in the face of diminishing global resources for disaster risk reduction, emergency response, humanitarian operations, and post-disaster recovery [6] [7]; and 2) a significant reduction in official development assistance from major donors for disaster relief and its continuation for the 2012–2015 period [6]. Nevertheless, as many scholars and practitioners report, the number and variety of actors or organizations involved in the fields of disaster risk management and humanitarian operations are increasing. In addition, the inter-relationships between these players also include an unexplored space for improvement in the disaster management and humanitarian spheres where non-core actors, such as the private sector, military, and diaspora groups, need to be invited into the institutional processes [5] [3] [7]. That being said, empirical research on emergency responses to disasters is necessary to capture the reality of multi-organization interventions and determine effective emergency responses.

The timing of the 2015 Nepal/Gorkha earthquake could not have been more strategic as it occurred approximately one month after the 3rd World Conference in Disaster Risk Reduction in 2015 and the first World Humanitarian Summit in 2016. It can provide a critical case study for both initial evaluations of the agreed Sendai Framework for Disaster Risk Reduction and a timely subject for real-time evaluation in line with the humanitarian transformation agenda, including fresh observation of the

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performance of the humanitarian cluster and its inter-relationship with local disaster relief and humanitarian actors. Prior to 2015, scholars and practitioners alike worried about the next "big earthquake" that could strike Nepal, though the country had not experienced a major earthquake for 75 years [8]. Therefore, the 2015 Nepal earthquake may have been what Birkland describes as a "focusing event," which can facilitate greater awareness and learning within policy systems at the international and national levels [9].

Nepal's institutional setup for disaster management dates back to 1982, when the country already had the Natural Calamity Relief Act in place. In terms of disaster response, the latest policy paper pre-2015 was the National Disaster Response Framework (NDRF), enacted in 2013. The disclaimer of the framework mentions that it was prepared to ensure the effective coordination and implementation of disaster preparedness and response activities by clarifying the roles and responsibilities of government and non-government agencies involved in disaster response in Nepal [10]. The NDRF has domestic legal power and at the same time incorporates development in the international humanitarian consensus, e.g., it includes the UN-led and Inter-Agency Standing Committee (IASC) humanitarian cluster approach. Therefore, we decided to use the 2015 Nepal earthquake as a "focusing event" and specifically look into the "learning points" identified in the implementation of the NDRF. Specific focus is placed on the inter-relationships between government and non-government organizations, national and international organizations, and traditional and non-traditional organizations in the disaster relief and humanitarian fields.

As such, there are two objectives in this paper: first, to provide an overview of the implementation of the NDRF following the 2015 Nepal/Gorkha earthquake; and second, to map out and model the network of organizations involved in the emergency response, as predictor to the extent of which the NDRF implemented. Accordingly, this paper is intended to answer the following research questions: 1) How was the NDRF implemented following the 2015 Nepal/Gorkha earthquake? 2) What are the characteristics of the inter-organizational network shaped by multi-organizational intervention during the emergency response? Furthermore, although still at preliminary stage, a brief analysis of the system-wide humanitarian operation performance will be presented.

2. Research Approach and Methodology

This paper is a mix of both qualitative and quantitative analyses. First, the paper qualitatively analyzes the content of the NDRF and via process-tracing looks at its implementation, verified by evidences from multiple sources. This qualitative analysis follows the procedure of data coding, exploring, describing, explaining, and drawing and verifying conclusions [11]; this is combined with guided process-tracing for analyzing catastrophes as "focusing events," which may induce a "learning process" and open up a "policy change window of opportunity" [9]. As a side note, our original intention was limited to the learning process of disaster policy implementation in an actual disaster setting, and not the determination of subsequent policy change.

Quantitatively, the paper employs the first iteration of Social Network Analysis (SNA) to model the inter-organizational network present during the 2015 Nepal earthquake emergency response. SNA is the study of the structural relationships among interacting network members (individuals, organizations, etc.) and how those relationships produce varying effects [12]. SNA is known for its versatility in answering research queries in the fields of disaster management and humanitarian affairs, e.g., in Hurricane Katrina [13], the West Java earthquake 2009 [14], the West Sumatra Earthquake 2009 [15] and the Great East Japan Earthquake and tsunami of 2011 [16].

In this paper, SNA was performed using UCINET Version 6 [17], which helped to present the near-actual network of multiple organizations present during the emergency response to the 2015 Nepal earthquake, not by its conceptualization of the NDRF, but via a relational database. Furthermore, SNA provides measurements of complete network structures, whereby the values of degree centrality, betweeness centrality, closeness centrality, and network density can be presented. Degree centrality is a measurement of an organization's level of involvement or activity in the network; it calculates the number of immediate contacts an organization has in a network [18] [19]. Betweeness centrality is a measurement of the extent to which an actor is located in the direct path of communication exchange between two other actors in the network [18]; it calculates how many times an actor sits on the geodesic (shortest path) linking two other actors, i.e., it can indicate the potential control an actor has over the flow of information or show the organizational leaders in a network [19]. Closeness centrality can be seen as a measure of an actor's independence, which can also uncover how a network can quickly and efficiently relay messages through the group. It considers the entire network of ties when calculating the centrality of an individual actor [19]. Lastly, network density refers to the extent to which all individual actors in a network are linked together. It counts how many actual ties exist in a network and expresses this number as a proportion of the potential ties that could exist in the network [19].

Accordingly, the data collection method for this research included a mixture of desk-study, fieldwork, and unstructured interviews with key informants in Nepal. The desk-study included collecting disaster response reports, policies, and activity records related to the emergency response to the 2015 Nepal earthquake, with the dataset mainly coming from the situation reports released by UN-Office for Coordinating Humanitarian Affairs (UNOCHA), humanitarian financial tracking system (FTS) by UNOCHA as of April 3 2016, and Social Welfare Council (SWC). From the UNOCHA situation reports and FTS, to be accounted for SNA dataset, an emergency response activity must clearly mention the name of donor (both funding or in-kind support), project owner and implementing partner; thus the Authors verified the existence of identified organizations through the internet and to Nepali government registration. Unmet humanitarian pledge, support from foreign government to their own governmental agency and activities that claim unidentifiable 'various recipients' were not included in the SNA dataset.