

Understanding and Applying the Concept of Community Disaster Resilience: A Capital-based Approach

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Abstract: Despite the recent popularity and frequent use of disaster resilience concept in the academic, research, and policy programs, there is a limited theoretical understanding of this concept. It is not clear how this concept should be measured. This paper is an attempt to develop a methodological framework for assessing and mapping of community disaster resilience.

1.0 Introduction

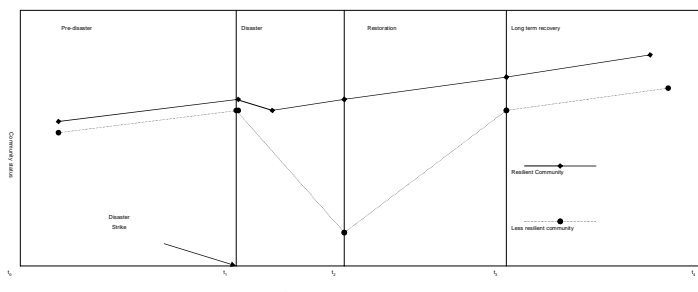
The Indian Tsunami of 2004, Hurricanes Katrina and Rita in 2005, illustrate that communities and people are increasingly becoming vulnerable to natural hazards. It is estimated that in the last ten years, disasters affected more than 3 billion people, killed over 750,000, and cost more than US\$600 billion (Birkmann, 2006). This trend of loss of human lives suggests that our communities are not resilient enough to natural disasters. Since the adoption of the *Hyogo Framework*, the main goal of disaster risk reduction has slightly shifted to focusing more on building community resilience. However, it is not clear how this concept should be measured or mapped.

2.0 Objective

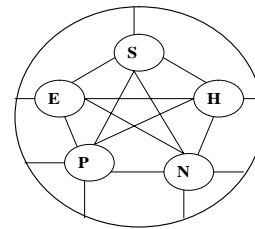
To develop a conceptual and methodological framework for assessing and mapping of community disaster resilience.

3.0 Working definition

Community disaster resilience is defined as the capacity or ability of a community to anticipate, prepare for, respond to, and recover quickly from impacts of disaster (See the figure below).

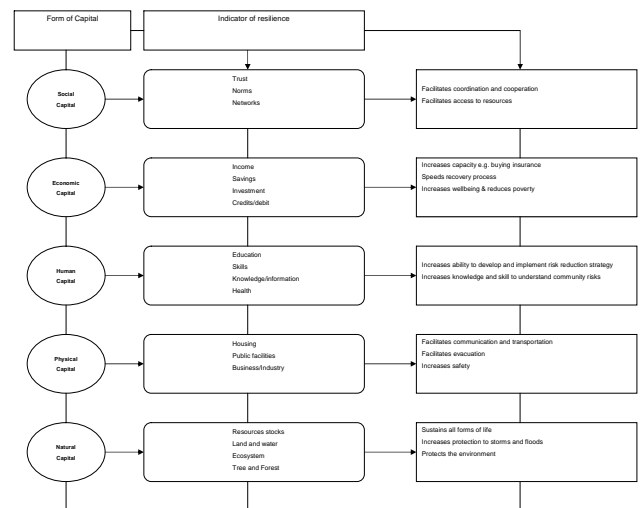


4.0 Elements of Resilience



S=Social capital
E=Economic capital
H=Human capital
P=Physical capital
N=Natural capital

5.0 Conceptual Framework



6.0 Disaster Resilience Index

$$CDR_i = \frac{\sum (w_1 SC_i + w_2 EC_i + w_3 HC_i + w_4 PC_i + w_5 NC_i)}{n}$$

SC_i=Social Capital index

NC_i=Natural Capital index

EC_i=Economic Capital index

W=Weight

HC_i=Human Capital index

n = Number of Capital

PC_i= Physical Capital index

CDR_i= Community Disaster Resilience index

7.0 Summary

This framework provides a starting point for developing a more robust methodology to assess and map community disaster resilience.