Geophysical Research Abstracts
Vol. 17, EGU2015-1786, 2015
EGU General Assembly 2015
© Author(s) 2014. CC Attribution 3.0 License.

Measuring vulnerability to disaster displacement

Susan A. Brink, Bijan Khazai, Christopher Power, and Friedemann Wenzel
Karlsruhe Insitute of Technology, Geophysics, Karlsruhe, Germany (s.brink@kit.edu)

Large scale disasters can cause devastating impacts in terms of population displacement. Between 2008 and 2013, on average 27 million people were displaced annually by disasters (Yonetani 2014). After large events such as hurricane Katrina or the Port-au-Prince earthquake, images of inadequate public shelter and concerns about large scale and often inequitable migration have been broadcast around the world. Population displacement can often be one of the most devastating and visible impacts of a natural disaster. Despite the importance of population displacement in disaster events, measures to understand the socio-economic vulnerability of a community often use broad metrics to estimate the total socio-economic risk of an event rather than focusing on the specific impacts that a community faces in a disaster.

Population displacement is complex and multi-causal with the physical impact of a disaster interacting with vulnerability arising from the response, environmental issues (e.g., weather), cultural concerns (e.g., expectations of adequate shelter), and many individual factors (e.g., mobility, risk perception). In addition to the complexity of the causes, population displacement is difficult to measure because of the wide variety of different terms and definitions and its multi-dimensional nature. When we speak of severe population displacement, we may refer to a large number of displaced people, an extended length of displacement or associated difficulties such as poor shelter quality, risk of violence and crime in shelter communities, discrimination in aid, a lack of access to employment or other difficulties that can be associated with large scale population displacement.

We have completed a thorough review of the literature on disaster population displacement. Research has been conducted on historic events to understand the types of negative impacts associated with population displacement and also the vulnerability of different groups to these impacts. We aggregate these ideas into a framework of disaster displacement vulnerability that distinguishes between three main aspects of disaster displacement. Disaster displacement can be considered in terms of the number of displaced people and the length of that displacement. However, the literature emphasizes that the severity of disaster displacement can not be measured completely in quantitative terms. Thus, we include a measure representing people who are trapped and unable to leave their homes due to mobility, resources or for other reasons. Finally the third main aspect considers the difficulties that are associated with displacement and reflects the difference between the experiences of those who are displaced into safe and supportive environments as compared to those whose only alternate shelter is dangerous and inadequate for their needs.

Finally, we apply the framework to demonstrate a methodology to estimate vulnerability to disaster displacement. Using data from the Global Earthquake Model (GEM) Social and Economic Vulnerability sub-National Database, we generate an index to measure the vulnerability of Japanese prefectures to the dimensions of displacement included in the framework.

References

Yonitani, M. (2014). Global Estimates 2014: People displaced by disasters. http://www.internal-displacement.org/publications/2014/global-estimates-2014-people-displaced-by-disasters/