A place based assessment of community resilience to natural hazards in Lesotho

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Abstract

The 2013 Global Assessment Report on Disaster Risk Reduction found that the global economy’s transformation over the last 40 years has led to a growing accumulation of disaster risk. Annually, economic losses amount to hundreds of billions of dollars and they are anticipated to double by 2030. Numerous everyday local events and constant stresses involving multiple risks are an ongoing burden for many communities. For instance food insecurity, livelihoods and people’s health are directly at risk in dry lands and drought prone areas in most African countries (UNISDR, 2013). Global climate change is likely to increase temperatures, change precipitation patterns and probably raise the frequency of extreme events (IPCC, 1996; 2001; 2007). Additionally, recent literature addresses concerns over the impact climate change may have on the frequency and magnitude of extreme weather events (Francis et al., 2011; IPCC, 2012; UNEP, 2012).

Resilient communities are less vulnerable to hazards and disasters than less resilient communities. For this hypothesis to be validated and useful, knowledge of how resilience is determined, measured, enhanced, maintained, and reduced is vital (Klein et al., 2003). It is not evident what leads to resilience within coupled human–environment systems or what variables should be utilized to measure it. Slow onset hazards include global temperature variations, sea level rise, drought, disease, and famine. This comparatively slow rate of onset paired with lack of spatial extents may contribute to a preference in the human dimensions of global change literature to conceptualize these hazards as “pressures”. It may also contribute to the prevalence of adaptive capacity concepts because slow onset events allow an individual or community the opportunity to change or modify existing behaviours and practices to reduce the impact of a hazard while the event is unfolding. In this context, indicators of resilience might include conversion to drought resistant crop species, water conservation, or the development of more sustainable land use practices. The disaster resilience of place (DROP) model was designed by Cutter et al. (2008) to present the relationship between vulnerability and resilience; one that is theoretically grounded, acquiescent to quantification; and one that can be used to address real problems in real places.

The primary objective, providing a focal point to the analysis, is to determine how the hazard profile, social makeup and built environment resilience differ within a given district of Lesotho. The following questions are addressed:

- What are the socio-economic and physical characteristics of communities and villages that make them resilient to natural hazards?
• What are the major natural hazards in the area?
• What factors, including social and physical resilience, are responsible for the spatial variation of resilience?

**Keywords:** Resilience, natural hazards, vulnerability, disasters, Lesotho