Evaluating Climate Risks to Enhance Resilience in Durban, South Africa

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Abstract : Anthropogenic climate change is exacerbating natural hazards such as droughts, heat waves and sea-level rise. The associated risks are the greatest in places where socio-ecological systems are exposed to these changes and the populations and infrastructure are vulnerable. Identifying the communities at risk and enhancing local resilience are key issues in responding to the current and project climate changes. This paper explores the types of risks associated with multiple overlapping hazards in Durban, South Africa where the social, cultural and economic dimensions that contribute to exposure and vulnerability are compounded by its history of apartheid. As a result, climate change risks are highly concentrated in marginalized communities that have the least adaptive capacity. In this research, a Geographic Information System is to explore the spatial correspondence among geographic layers representing hazards, exposure and vulnerability across Durban. This quantitative analysis will allow authors to identify communities at high risk and focus our study on the nature of the current human-environment relationships that result in risk inequalities. This work will employ qualitative methods to critically examine policies (including educational practices and financial support systems) and on-the-ground actions that are designed to improve the adaptive capacity of these communities and meet UN Sustainable Development Goals. This work will contribute to a growing body of literature on disaster risk management, especially as it relates to developing economies where socio-economic inequalities are correlated with ethnicity and race.

Keywords : adaptive capacity, disaster risk reduction, exposure, resilience, South Africa

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