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Built to last? Local climate change adaptation and governance in the Caribbean – The case of an informal urban settlement in Trinidad and Tobago



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ABSTRACT

Climate Change (CC) increasingly affects cities in low-elevation coastal zones, and households in low-income areas in particular. This article focuses on local CC adaptation and governance in Trinidad and Tobago. First, it investigates the capacity of a poor urban community to adapt to CC, by examining the local impacts of and responses to flooding. Second, based on interviews with a selection of local stakeholders, the article sheds light on the institutional barriers preventing the development and implementation of effective CC adaptation strategies.

The data show that households in the case study community experience the impacts of changing climatic conditions, in particular flooding. Households implement a wide range of adaptive measures before, during and after floods. It was revealed that the case study community receives very limited institutional support to withstand flooding. Looking at the different levels of CC adaptation governance in Trinidad and Tobago it can be concluded that although the institutional architecture to support local CC adaptation seems to cover all governance levels, vertical linkages between the various levels have to be strengthened to bridge the gap

Abbreviations: CC, Climate Change; CBA, Community-based Adaptation; IPCC, Intergovernmental Panel on Climate Change; LECZ, Low Elevation Coastal Zones; LDCs, Least Developed Countries; ESG, Earth System Governance; GEF, Global Environment Facility; CCCCC, Caribbean Community Climate Change Centre; NGOs, Non-governmental Organizations.

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between community-based and national-level adaptation planning. The main institutional challenges are the lack of coordination and communication between the relevant actors.

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1. Introduction

Recently, the number of urban citizens adversely affected by the direct and indirect effects of CC, such as floods and extreme weather events, is increasing. CC vulnerability is concentrated in Low Elevation Coastal Zones (LECZ). As a result of growing urbanisation and urban concentration in LECZs, the number of citizens vulnerable to CC is expected to increase. Particularly susceptible to CC are cities in developing countries and disadvantaged settlements within these cities (Satterthwaite et al., 2009). Their vulnerability is compounded by limited resources, inadequate infrastructure and weak and ineffective systems of governance (Ayers, 2011).

High inter-annual variability of local weather and confounding factors such as land-use change and urbanisation effects, complicate detection of climate-driven trends in urban areas. However, it has been shown that the built environment and human activities within urban centers interact with CC impacts (Wilby, 2007). Early CC efforts and debates have predominantly focused on mitigation, but CC adaptation has become a more prominent political goal leading to formulation of adaptation policies. Such policies are essential for low-income households as these often take the brunt of CC impacts (Satterthwaite et al., 2009; United Nations Human Settlements Programme (UN-HABITAT), 2011; Huq et al., 2007).

It is argued that well-facilitated and active involvement of the local level, i.e. households and communities, in developing and implementing CC adaptation programs is critical because CC vulnerability is experienced locally and adaptive capacity and actions are best observed and realised locally. (Fünfgeld, 2010; Fünfgeld and McEvoy, 2011). However, the scale and impact of local action against CC related risks remains limited without measures at other levels that address underlying drivers of vulnerability. Consequently, an integrated approach to build resilience among the urban poor is needed (Fünfgeld, 2010; Dodman, 2009).

Local knowledge of environmental system characteristics, of perceived and experienced CC risks, and of the physical, social, economic and institutional environment, is critical to such an integrated approach. This information improves urban authorities' (state, private and non-profit partners) responses to the needs, risks and adaptation strategies of the urban poor in relation to CC (Fünfgeld, 2010; Moser, 2011; Moser et al., 2010). Lessons learned from local adaptation can inform higher levels of decision-making and ensure relevant and appropriate local strategies (Organisation of Economic Cooperation (OECD), 2009). However, knowledge of local vulnerabilities and adaptation strategies is still at a preliminary level and convergence with macro-level knowledge limited (Linnekamp et al., 2011).

Agrawal (2008) suggests that institutions influence CC adaptation and vulnerability in three critical ways: (a) they structure impacts and vulnerability, (b) they mediate between individual and collective responses to climate impacts, shaping outcomes of adaptation, and (c) they act as the means of delivery of external resources to facilitate adaptation, and thus govern access to such resources. Understanding the role of CC adaptation institutions, and the linkages between them, improves understanding of appropriate institutional leverage points for improved adaptation outcomes (Agrawal, 2008). Currently, little is known about the extent to which local, regional and national institutional actors enable the environment for appropriate, local adaptation.

This article addresses the aforementioned knowledge gaps by examining CC adaption by residents in a vulnerable community, and how actors, at various governance levels, perceive their roles and responsibilities in CC adaptation. As such, this article contributes to existing discussions and literature on community-based adaptation (CBA).

The low-lying, small, and highly urbanised island states of the Caribbean rank highest among the countries affected by impacts of CC-related risks. Higher temperatures, sea-level rise, changing rainfall

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