

TH10.50.04 What Prevents Vulnerability? Policy and Diverse Communities

Operationalizing Urban Resilience: Living with Water in Rotterdam

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Delta cities, like New York, Tokyo, and Rotterdam, are particularly vulnerable to flooding from storm events and sea level rise. Enhancing resilience in these cities at the mouths of river systems requires a delicate balance of facilitating commerce, minimizing flood risk, and maintaining and often improving quality of life. While the broad outlines of resilient delta city planning have begun to emerge, detailed analysis of project and system impacts is still minimal.

This research examines the key elements of the Rotterdam resilience system and seeks to quantify key technical impacts such as water storage and infiltration, and, more broadly, addresses how enhanced spatial resilience towards effects of climate change interacts with the overall resilience of local inhabitants. Rotterdam was chosen because of both its vulnerability (nearly 80% of the city is below level) and extensive resilience planning. The research uses a case study format to analyze water and transportation infrastructure in three neighborhoods around the center of Rotterdam (Proveniersbuurt, Blijdorp and Agniesebuurt). These neighborhoods provide a representative cross-section of the Rotterdam water resilience system. The system is composed of the historic, city beautiful canal system as the base and new elements like the Benthemplein Water Square, a public plaza that doubles as a water retention and filtration system, and a network of green streets with permeable pavement. Data on the water impacts of the system have been collected to show how the individual projects act together as a neighborhood wide system. These data are coupled with interviews of city and neighborhood stakeholders to examine the social resilience impacts of the water projects. Results of the analysis highlight the significance of the connection of individual projects in a larger water resilience system and the importance of planning the system for quality of life benefits for existing residents.

Building Local Resilience: Hazard Mitigation Plan Implementation in Coastal North Carolina

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Coastal communities in the United States have increasingly responded to growing hazard risks through attention to hazard mitigation planning. This study looks at the challenges faced by coastal counties in North Carolina with regard to the implementation of multi-jurisdictional county level hazard mitigation plans. In North Carolina, all 20 coastal counties presently have certified hazard mitigation plans. Yet, the implementation of recommendations in the plans has been highly uneven among the counties. Through a place based approach using qualitative methods that includes content analysis of hazard mitigation plans and in-depth informant interviews with public officials such as planners and emergency managers, this research sheds light on the ways that the current mitigation plan implementation system faces challenges at the local level.

Previous research has identified a number of variables that can influence hazard mitigation plan implementation, which include political commitment (e.g. Burby & May 1998), inter-governmental co-ordination (e.g. Burby & May 1998), public stakeholder participation (e.g. Stevens, Berke & Song 2010; Godschalk, Brody & Burby 2003), commitment to evaluation (e.g. Brody and Highfield 2005), organizational capacity (e.g. Brody, Kang & Bernhardt 2010), and the role of planners (e.g. Stevens 2010).

Findings from this study indicate that differences in implementation resources between urban and rural jurisdictions contribute to disparities in hazard mitigation plan implementation among counties, with challenges such as funding shortage and staff cutbacks being especially severe in rural counties. These findings have implications for state and federal hazard mitigation policies that operate under a one-size fit all model and can be modified to a tiered approach better suited to meets the needs of different types of jurisdictions.

The Strategies for Promoting the Built Community's Disaster Prevention Capability Based on RATA Resilience Evaluation System

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As a result of the city system becoming more complex, the potential disaster risks show a trend of increasing. The existing built communities occupy a large scale in the city and have relatively weak disaster prevention capability which closely related to the residents' life and property security, thus special attention need to be paid in this regard. There are no systematic and comprehensive evaluation standards in the current disaster prevention planning system in China and the capability of communities to prevent disaster is hard to evaluate. With the development of disaster resilience theory, resilience evaluation system tends to be a breakthrough that combines resilience theory with community development. The RATA resilience evaluation system provides an evaluation method through combining spatial entity with social structure to measure the disaster prevention capability in the built communities. The paper takes a built community in Tianjin as an example and adopts APH assignment method, statistical data analysis and in-depth interview with community residents to analyze the disaster prevention capability of old community and newly-built community from three aspects: social composition, community space and management system. The results demonstrate that in the built community, the residents lack the awareness of disaster prevention, and other problems such as imperfect disaster prevention space construction, inflexible emergency management and insufficient disaster prevention work still remain to be solved. The paper thus raises strategies such as improving residents' disaster prevention and self-rescue capability, constructing efficient community emergency management system, preventing disaster by rationally utilizing the spatial structure of community, developing various efficient evacuation networks and integrating disaster prevention management system into the daily work so as to enhance the the disaster prevention capability of the built community.