

Risk management in civil engineering

advanced course

LISBON • LNEC • November 17-22, 2008

PLANNING FOR COMMUNITY DISASTER RESILIENCY

Challenges and choices for the 21st century

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Abstract

Land use and development is one of the most significant contributors to increasing community vulnerability to natural hazards. Land use and transportation patterns set the framework for living, working, and travel. The design and location of human settlements determines the degree of development exposed to hazards, and the ability to resist or absorb an impact and recover from the impacts.

My presentation examines the role of local land use planning in strengthening community resiliency to cope with natural disasters. I recognize the importance of national disaster plans and policies, but I will take a “bottom-up” local view of the intergovernmental system of resiliency planning rather than a “top down” national view. While my presentation primarily draws on the institutional and legal context of the United States, the challenges that confront effective policy and approaches to strengthening community capacity to adapt to extreme environmental events should be transferable. Researchers and practitioners from other countries can build and improve on U.S. experience as they will need to create regulations, incentives and infrastructure investment strategies geared to their own urban development context.

I will cover four critical topics related to disaster resiliency planning that are premised on systematic empirical evidence. The first discusses the emerging network of different types of plans (mitigation, evacuation, sheltering, and comprehensive urban development management) that offer potential benefits to communities in supporting more disaster resilient communities. The benefits include integrating vulnerability science-based information into public debate, enhancing civic engagement, coordinating public and private land development and infrastructure investment decisions, defining a vision of a resilient community, and providing the facts, goals, and policies to achieve the vision. To date, prior research suggests serious failures in achieving these benefits.

The second topic focuses on three major challenges that confront effective resiliency planning: a) the “local government paradox” that arises when local governments fail to adopt vulnerability reduction practices even though disaster losses are primarily local; b) the “safe development paradox” that arises when national government investments in structural controls that make hazardous areas safe, but are of little value when the reduction in damages that they accomplish is more than offset by new damage resulting from additional development; and c) the “social disparities” among population groups caused by low-income, gender, age, and ethnicity and race that are frequently not recognized in local plans.

The third topic focuses on three sets of strategic choices that deal with improving local planning for disaster resiliency: a) approaches to building local organizational capacity to plan; b) ways to create a coordinated network of plans derived from an emerging array of different types of plans; and c) national (and state) policy choices focused on coercive regulations and cooperative incentives aimed at building local capacity to adapt to changing human, social, and physical vulnerability dynamics.

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The final topic will present a proposed cross-cultural research project aimed at answering three critical questions. How does local planning capacity influence the quality of local plans? How does the design of national (and state) policy influence local capacity and plan quality? How do national policy, local capacity, and local plans affect community disaster resiliency outcomes? Answers to these questions will improve our understanding of how to most support local government planning that leads more resilient communities.