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Research Paper

A comparison of local hazard mitigation plan quality in six states, USA

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HIGHLIGHTS

- Local mitigation plan quality scores are low to moderate overall.
- There is wide variation in scores by principle of plan quality.
- There is wide variation in scores by state.
- State planning mandates are associated with policies and coordination principles.

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ABSTRACT

Local hazards mitigation plans can be valuable tools in national policy frameworks for reducing risks from natural hazards. The United States' Disaster Mitigation Act of 2000 requires local governments to adopt plans to remain eligible for certain federal disaster funds. We use seven principles of plan quality to content analyze mitigation plans for 175 jurisdictions in six coastal states. We analyze variation of plan quality based on the seven principles of plan quality and the state contexts of local mitigation planning. Findings indicate that plan quality is low to moderate overall. In addition, state mandates for local comprehensive planning are associated with higher scores on just two plan quality principles, suggesting limited, specific influences of comprehensive planning mandates on hazard mitigation planning. Recommendations are offered for how national, state and local officials can target strategic adjustments to local mitigation planning efforts.

1. Introduction

The 2005 international *Hyogo Framework for Action 2005–2015: Building the Resilience of Nations and Communities to Disasters* has as its first priority "[e]nsure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation" (UN ISDR, 2005, p. 6). A recent International Federation of Red Cross and Red Crescent Societies (IFRC) report reviewing national disaster risk reduction (DRR) policies references expert concerns that "many new laws and policies that have been developed to address DRR seem not to have made the difference they promised – particularly at the community level" (IFRC, 2013, p. 4). These contemporary concerns echo a dilemma previously identified in the literature. Namely, multi-level governance frameworks for hazard risk reduction often consist of national and state (or provincial or regional) governments seeking to share responsibility for risk reduction with local governments that are often "reluctant partners" (May et al., 1996, p. 2).

Shared governance dilemmas arise when the costs and benefits of mitigating risks from natural hazards such as floods, droughts, and earthquakes do not necessarily align across levels of government (Berke, 1998; May et al., 1996). On the one hand, national and state governments incur essentially constant costs when natural hazard risks are not mitigated because at nearly all times some local governments are in need of assistance preparing for, responding to, and recovering from disasters. On the other hand, individual local governments typically face disasters infrequently or irregularly and local costs due to failure to mitigate hazards are less certain. As a result, national and state governments often have larger incentives to encourage local mitigation planning than lower level governments have to engage in mitigation planning. This incentive mismatch can be addressed by higher levels of government

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through intergovernmental policy frameworks ranging from top-down and coercive to bottom-up and cooperative, as examples from Australia, New Zealand and the United States show (Berke, Dixon, & Ericksen, 1997; May et al., 1996).

Another consideration in addressing the shared governance dilemma in multilevel governance systems with national, state, and local level involvement is how state governments (or provincial or regional governments) interpret and advance national goals. Differences in how states interpret and support national policy goals and requirements in multilevel governance systems may explain variations in local responses to the national policies. Previous research indicates that differences in state planning policy contexts, specifically the commitment and capacity building features of states' planning mandates, influence local plan quality (Berke, Roenigk, Kaiser, & Burby, 1996; Burby & May, 1997). Additionally, effective intergovernmental policy frameworks need to integrate hazard mitigation laws and policies with other public safety laws and policies, including those related to land use planning, building codes, and environmental management (IFRC, 2013). In multilevel governance systems, these public safety laws and policies often exist at the state level in addition to the national and local levels.

In spite of the clear conceptualization of the shared governance dilemma and the clear need to pay attention to intermediate state level factors, there is a limited knowledge of how local communities respond to national hazard mitigation policies in multilevel governance systems. In particular, there has been a lack of analysis of the quality of local hazard plans developed in response to national requirements for local hazard mitigation planning. This article assesses the quality of local hazard mitigation plans adopted in response to a national-level hazard mitigation planning mandate adopted in the United States in 2000, the Disaster Mitigation Act (DMA). The United States Congress passed the DMA in 2000 in an effort to move the nation away from a reactive, disaster-driven approach to hazard mitigation that historically prioritized isolated projects (Burby et al., 1999; Godschalk, Beatley, Berke, Brower, & Kaiser, 1999; Nolon, 2009; Smith, 2009). The DMA was aimed at moving the Untied States toward a more proactive, comprehensive approach that integrates discrete projects, regulatory changes, and ongoing programs to reduce escalating disaster costs and speed the expenditure of federal mitigation funds. It requires state and local governments to develop hazard mitigation plans to remain eligible for multiple federal mitigation funds. By 2011, all 50 states and more than 26,000 local jurisdictions had adopted hazard mitigation plans (Department of Homeland Security Office of Inspector General, 2012).

The purposes of this paper are to describe the quality of local hazard mitigation plans from a multi-state sample and to examine if the benefits of one type of public safety law – state comprehensive land use planning mandates – are manifested in local hazard mitigation plans. It seeks to answer three main research questions. First, how do local hazard mitigation plans vary across different principles of plan quality? Second, how does local hazard mitigation plan quality vary across state planning policy contexts? Third, are local mitigation plan quality scores higher in states with mandates for local comprehensive land use planning? Quantitative plan quality content analysis data from 175 local hazard mitigation plans in six states in the United States are used to answer these questions.

2. Conceptualizing local mitigation plan quality and state planning policy contexts

2.1. Local mitigation plan quality

Plans help public and private stakeholders make decisions in support of the public interest in dynamic conditions characterized by uncertainty and complex relationships (Hopkins, 2001). How plans provide this help depends upon the purposes of the plans, the conditions under which they were developed, and the situations in which they are used (Baer, 1997). Over the last two decades, scholars have conceptualized what constitutes plan quality and more than 40 peer reviewed studies have measured variation in plan quality (Berke & Godschalk, 2009; Stevens, Lyles, & Berke, 2013). These studies have evaluated plans in Australia, Canada, Holland, New Zealand, the United Kingdom, and the United States and have included more than 10 publications focused on hazard mitigation (Stevens et al., 2013)

First-order plan quality *principles* are normative standards that correspond to the different components plans should include (Berke, Godschalk, & Kaiser, 2006, Ch. 3). The principles can be applied across multiple planning domains, such as hazard mitigation, sustainable development, housing, and other topics (Berke & Godschalk, 2009). Consensus has emerged around a core set of interdependent principles of plan quality (Berke et al., 2006, Ch. 3; Berke, Smith, & Lyles, 2012). Berke et al. (2006, p. 70) conceptualized eight principles, divided into internal plan quality involving "the content and format of key components of the plan" and external plan quality dealing "with the relevance of the scope and coverage of the plan in fitting the local situation". Berke and Godschalk's (2009) meta-analysis of 16 plan quality studies also used this internal/external conceptual division. Alternatively, Norton (2008) has distinguished between a plan's policy focus – specific to the planning domain – and its analytical quality, which determines the plan's effectiveness as a communicative tool. Bunnell and Jepson (2011) argued for increased attention to the qualities of plans that enhance their communicative and persuasive impact.

Here, the focus is on seven principles of plan quality. Three *direction-setting principles* (goals, fact base, and policies) form the foundation for a future vision, while four *action-oriented principles* (participation, inter-organizational coordination, implementation and monitoring) organize uses of the plan (Berke, Spurlock, Hess, & Band, 2013). For each of the seven plan quality principles, Table 1 provides a definition of the principle as applied to hazard mitigation. It also identifies specific second-order components of the principles. Under the second-order components are third-order items, which are study-specific individual measures of plan quality (see Appendix 1 for the third-order items used in this study).

2.2. State planning policy context for coordination of local mitigation planning under the DMA

National legal frameworks for hazard risk reduction can range from having no specific laws to having a comprehensive, multi-hazard risk management legal framework that extends from the national to the local level (IFRC, 2013). A recent assessment of 30 national laws characterized 23 laws as having a disaster risk management focus that is multi-hazard and comprehensive in focus or having a disaster management focus that is not necessarily multi-hazard or comprehensive, but does address "some aspects of prevention, early warning, mitigation, response and/or recovery" (IFRC, 2013, p. 8). Examples of disaster risk management frameworks include Australia, Ecuador, New Zealand and the Philippines, while Brazil, China, India and the United States are in the disaster management category.

In response to multilevel governance challenges like hazard risk reduction, higher-levels of government can respond to the shared governance dilemma by taking a coercive, top-down mandate approach or a more cooperative, bottom-up mandate approach (May et al., 1996). A similar concept to the cooperative approach is a reflexive law, under which higher levels of government avoid prescribing required outcomes in a coercive manner (Teubner, 1983).