

Planning for Resiliency: Evaluation of State Hazard Mitigation Plans Under the Disaster Mitigation Act

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State mitigation plans play a critical role in supporting disaster loss reduction and long-term resiliency of human communities. The Disaster Mitigation Act of 2000 requires all states to prepare mitigation plans. Based on six principles of plan quality, 30 coastal state plans are content analyzed to determine how well the plans support hazard mitigation.

Research Questions

- (1) How well do state mitigation plans prepared under DMA achieve the principles of plan quality?
- (2) What are the comparative strengths and weaknesses of individual state plans by plan quality principle?

Methodology

A sample of thirty coastal state plans were content analyzed to determine how effectively the individual plans support hazard mitigation. The sampling of coastal states represents diverse geographic locations and has wide variation in population growth and development rates. The state plans were content analyzed through a coding process that produced composite scores for six principles, outlined below.

Plan Quality Principles

Goals	Future desired conditions that reflect the breadth of values affected by the plan.
Fact Base	Provides the empirical foundation to ensure that key hazard problems are identified and prioritized and mitigation policy-making is well-informed.
Mitigation Policies	Serve as a general guide to decisions about development and assure that plan goals are achieved.
Implementation & Monitoring	Involves the assignment of organizational responsibilities, timelines, and funds to implement the plan. It also involves tracking the extent to which polices are carried out.
Inter-Organizational Coordination	Entails recognition of the interdependent actions of state and local organizations that need coordination for plan implementation.
Participation	Involves recognition of formal and informal actors engaged in preparing the plan, including other governmental bodies, private-sector institutions, nonprofits, and individual citizens.



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The overall mean scores for each category of plan quality are calculated to indicate the states' commitment to hazard mitigation. Then mean scores, standard deviations, and the range from lowest to highest scores are determined for each of the principles of plan quality. The spatial distribution of the plan quality scores is presented on the maps below to allow for comparison.

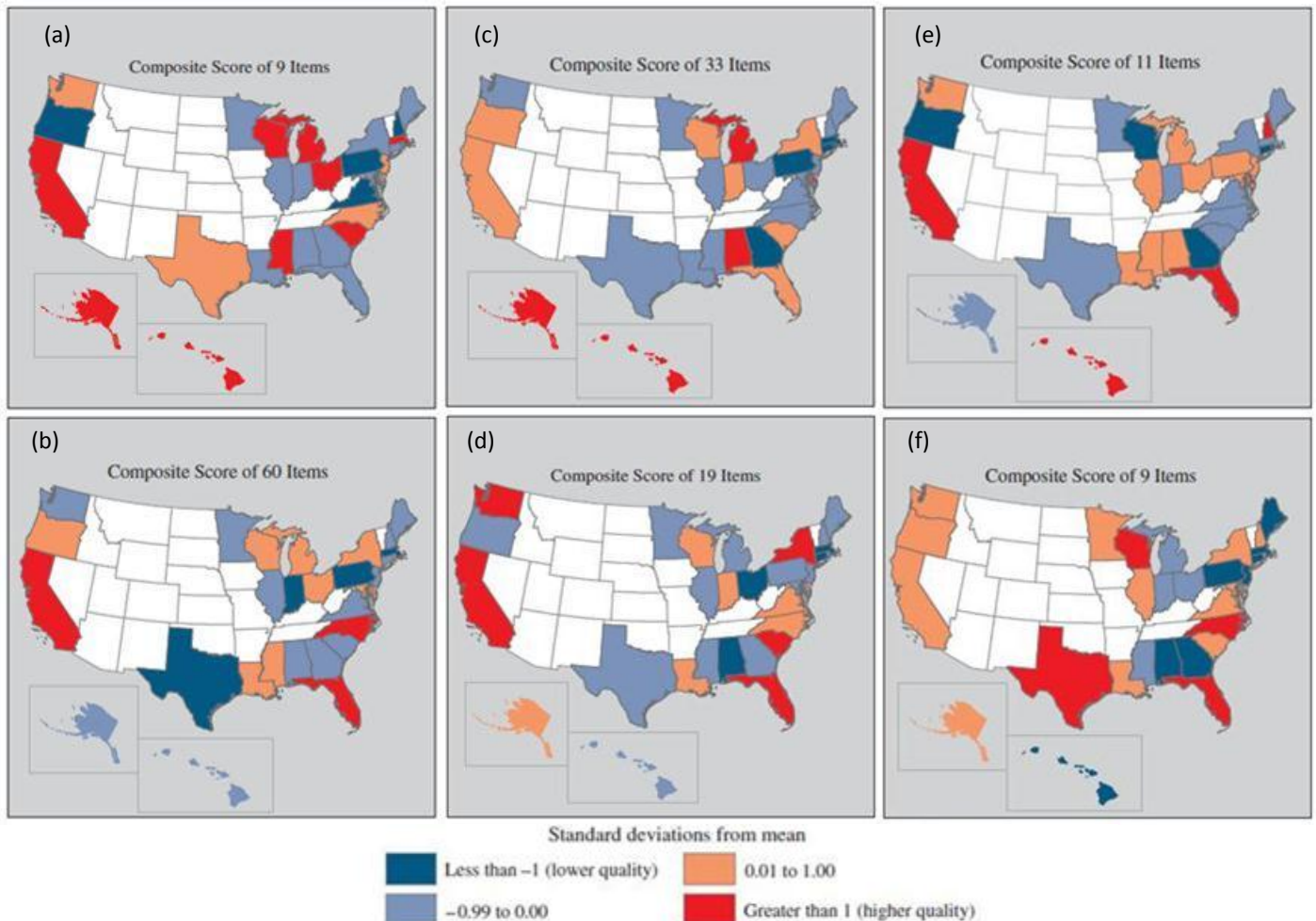
Key Findings

Plan quality has improved over the last decade compared with plans developed prior to the Disaster Mitigation Act. Many plans developed before 2000 lack descriptions of goals, fact base, policies, organizational coordination and implementation and monitoring. All contemporary DMA plans address each of the six plan quality principles. While plans have improved, our findings show that many states have room for improvement in terms of plan quality principles.

The map below displays the composite scores for each plan quality principles for states (a) goals; (b) fact base; (c) mitigation policies; (d) implementation and monitoring; (e) participation; and (f) inter-organizational coordination. Mapped scores provide insight about the strengths and weaknesses of individual plans. The distribution of scores across states is displayed for each principle, distinguishing between high and low plan

Plan Quality Principles for States

State plan quality scores for (a) goals; (b) fact base; (c) mitigation policies; (d) implementation and monitoring; (e) participation; and (f) inter-organizational coordination



quality, defined as those states with plan quality scores greater than one standard deviation from the mean (high plan quality = +1SD; low plan quality = -1SD. For example, for the fact base principle (b), three states (California, Florida, and North Carolina) have high scores, but four states (Indiana, Massachusetts, Pennsylvania, and Texas) have low scores. In another example, under inter-organizational coordination with local planning (f), four states (Florida, North Carolina, Texas, and Wisconsin) scored high, whereas eight states (Alabama, Connecticut, Georgia, Hawaii, Maine, Massachusetts, New Jersey, and Pennsylvania) had low scores.

Overall, our findings suggest that states do not have well-organized, technically-sound, and thoroughly prepared plans. Scores related to the six plan quality principles were moderate to low for many states. California was the only state to receive above average scores for each of the six plan quality principles. Connecticut, Georgia, and Maine had below average scores for all principles. **Some states prepared strong plans for some principles, but scored below average for other principles, which could jeopardize successful implementation.** For example, Texas has a compelling vision as indicated by an above average score for goals, but the goals are not likely to be achieved due to low scores for all other principles.

There are several factors which may explain the range of plan quality scores across states—the

previous disaster experiences of each state; prioritization of hazard mitigation by each state's emergency management agency; and, the presence of a hazard mitigation advocacy network that is able to provide technical, political, and collaborative leadership.

Implications for Practice

Based on these findings, the following recommendations are offered for how plan quality evaluation can be used to guide and monitor state development of hazard mitigation plans.

- **Plan quality evaluation is a valuable tool for systematic analysis of plans.** Application of the plan quality principles allows for empirical documentation of patterns of gaps and weaknesses in current plans, providing insights on how these plans can be improved.
- **Application of plan quality principles can allow for improved assessment of plans.** By applying plan quality principles, state hazard mitigation plans can be more effectively reviewed as part of FEMA's plan update cycle for state mitigation plans and following disasters.
- **Applying plan quality principles allows for comparative analysis across states.** This may be particularly useful for the higher-level external review conducted by FEMA. The findings can provide FEMA with tangible measures to make targeted improvements in enabling administrative rules that guide plan making and federal legislation.

Full Article

The full version of this publication and others are available at <http://hazardscenter.unc.edu/mitigation-planning/> and at <http://www.ie.unc.edu/cscd/projects/dma.cfm>.

Additional Information

More about the Coastal Hazards Center and its work can be found at <http://hazardscenter.unc.edu>. More about the Institute for the Environment and its work can be found at www.ie.unc.edu.

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