

State Influences on Local Hazard Mitigation Plan Quality in Four Southeastern States

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The federal Disaster Mitigation Act of 2000 requires all local governments to adopt hazard mitigation plans to remain eligible for post-disaster federal hazard mitigation funds. Based on 7 principles of plan quality, 115 local mitigation plans are content analyzed. We analyze variation of plan quality based on two key features of state planning policy influence: state requirements for local comprehensive planning and state agency approaches to coordinating local mitigation efforts.

Research Questions

- (1) What is the current state of practice in local hazard mitigation plan quality in six coastal states?
- (2) Does state policy aimed at local hazard mitigation plans make a difference in local hazard mitigation plan quality?

Methodology

A random sample of plans for 115 local jurisdictions in four states (Florida, Georgia, North Carolina and Texas) was content analyzed to determine the quality of the plans for seven principles (see next page).

For each principle, a set of individual items was coded. Mean plan quality scores were calculated for each of the seven principles of plan quality by adding the scores for individual items under the principle, dividing by the number of items to standardize the scores for comparison across principles, and multiplying by 10.0 to put the score on a 0.0 to 10.0 scale. Variation of plan quality across principles for the full sample was evaluated using F-tests generated from Ordinary Least Squares Regression analysis.

The sampling of the jurisdictions represents diverse state planning policy contexts and has wide variation in population growth and development rates. Variation in plan quality across state planning policy contexts was evaluated using Welch's t-tests.



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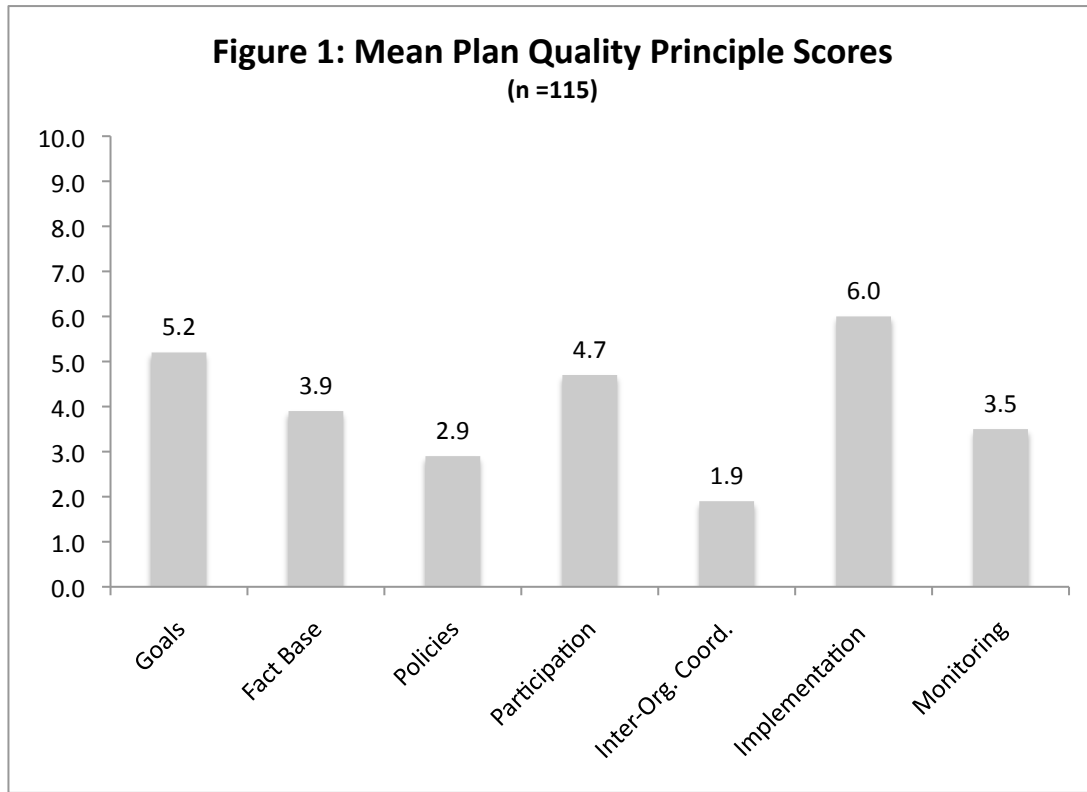
Plan Quality Principles

Participation	Involves recognition of formal and informal actors engaged in preparing the plan, including other governmental bodies, private-sector institutions, nonprofits, and individual citizens.
Fact Base	Provides the empirical foundation to ensure that key hazard problems are identified and prioritized and mitigation policy-making is well-informed.
Goals	Future desired conditions that reflect the breadth of values affected by the plan.
Policies	Serve as a general guide to decisions about development and assure that plan goals are achieved.
Implementation	Involves the assignment of organizational responsibilities, timelines, and funds to implement the plan.
Monitoring	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.

Key Findings

Research Question 1: What is the current state of practice in local hazard mitigation plan quality in six coastal states?

The mean scores for all seven of the plan quality principles are moderate to low and are statistically different across the principles ($p < 0.001$). Five of the seven principles score less than half the maximum total points - below 5.0 out of the maximum of 10.0. These mean scores indicate that there is substantial room for improvement in the quality of local hazard mitigation plans.



F-statistic 186.1 on 6 and 1218 degrees of freedom; $p = 2.2e-16$

Research Question 2: Does local hazard mitigation plan quality vary systematically across state planning policy contexts?

The states in our sample have taken two, contrasting approaches to coordinating local hazard mitigation planning. Florida and Texas have taken rigid, project-oriented approaches. Both states strongly push local jurisdictions to use their mitigation plans to prioritize lists of discrete hazard mitigation projects (e.g. retrofits of public buildings, stormwater system improvements, and purchases of equipment). In contrast, Georgia and North Carolina have taken more flexible and comprehensive approaches in their coordination of local mitigation planning. They encourage local jurisdictions to use their mitigation plans to organize a comprehensive strategy consisting of a wide array of policy changes (e.g. zoning), programs (e.g. education), and projects.

Plan quality scores for the policies, participation, and implementation principles are significantly different for the two different state planning policy approaches. These findings indicate that state planning policy approach appears to have an influence on local plan quality.

	State Agency Approach to Mitigation	
	Rigid, Project-Oriented States (FL and TX)	Flexible, Comprehensive States (GA and NC)
Goals	5.1	5.3 NS
Fact Base	4.0	3.7
Policies	2.3	3.5 ***
Participation	5.1	4.3 ***
Inter-Organizational Coordination	1.9	1.9 NS
Implementation	7.1	4.8 ***
Monitoring	3.6	3.5 NS

T-statistic p-values: *** denotes p<0.000; ** p<0.01, * p<0.05, . p<0.1, NS p>0.1

Local plans prepared in states taking a rigid, top-down approach include a narrower array of mitigation policies and thus have lower policies principle scores than plans prepared in states taking a flexible, comprehensive approach. Local plans in Florida and Texas place heavy emphasis on discrete, federal grant-fundable projects. Often, the projects are not forward-looking and instead focus on fixing past mistakes or, in some cases, focus on emergency preparedness and response activities (e.g. purchasing generators or radios) that do little to reduce long-term risks. Narrower, project-oriented plans may also fail to adequately address the complex challenges inherent to reducing hazard risks at the local level.

Plans prepared in states with rigid, project-oriented approaches provide more detailed implementation information for their narrower range of projects as compared to plans in states with flexible, comprehensive approaches, which include a broader ranges of policies but less implementation information. Implementation information for discrete projects prioritized in Florida and Texas may be easier to identify than for programs with ongoing timeframes and costs or policy changes with timeframes and costs highly dependent on the local political climate.

Participation principle scores in rigid, project-oriented states were due to high scores in Texas while scores in Florida, Georgia and North Carolina were very similar (t-test results not shown here). This difference may be a function of more jurisdictions in Texas participating in multi-county regional planning process that may have allowed jurisdictions to pool resources to use more public engagement techniques.

State planning policy context did not appear to make a difference for the scores for the fact base, goals and monitoring principles in our sample of plans. Importantly, the uniformly low monitoring scores may point to most jurisdictions meeting minimum requirements set forth by FEMA rather than laying out a detailed program with indicators to track progress.

Implications for Practice

Based on these findings, the following recommendations are offered:

- **Federal mitigation officials should consider raising required standards for local hazard mitigation plans.** The moderate to low plan quality scores observed for all seven principles indicate that most jurisdictions are failing to do more than meet baseline requirements for their mitigation plans. Raising required standards for future updates to mitigation plans could push communities improve their plans over time, especially if stricter requirements are targeted towards the principles with very low scores (e.g. policies and inter-organizational coordination).
- **Federal and state mitigation officials need to consider moving away from binary approval decisions for local hazard mitigation plans and adding incentives for higher quality plans.** Local hazard mitigation plans are given a simple approved/not approved decision by federal and state mitigation officials and there are currently no external incentives for local governments to exceed the baseline requirements. Using a graduated system of rewards for higher quality plans, similar to that used in the Community Rating System (CRS) for floodplain management, could induce local jurisdictions to make targeted improvements to their plans that they would not prioritize otherwise. The CRS is a good program to use as a model, but federal officials must make sure that the incentives for developing higher quality mitigation plans are strong and effectively targeted at local needs.
- **States need to assess their approach to coordinating local mitigation efforts and its influence on principles of local plan quality.** States that have promoted rigid, project-oriented approaches to mitigation need to consider whether local plans end up too focused on mitigation actions that are dependent on external funding at the expense of locally-driven risk reduction policies and programs. States that have promoted more flexible and comprehensive approaches to mitigation may need to better assist local governments in articulating specific implementation information for their policies and actions.

Additional Information

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

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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