Building Local Capacity to Respond to Environmental Change: Lessons from New York State

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What is the Issue?
The capacity of local governments to manage environmental resources is often dwarfed by social and ecological forces that transcend political boundaries. Climate change, natural gas development, and loss of open space are each driven by such forces, with distinctive impacts that progress at varied rates across multiple geographies. Each prompts local government to consider various management options. How do or can local governments plan for and respond to these types of changes? Important questions include:

• How important are environmental issues relative to other municipal concerns?
• Is there agreement on whether environmental issues should be addressed and appropriate responses.
• What affects towns’ ability to develop and implement policies that address different types of environmental issues?

We explored local responses to environmental changes in three areas of New York State (NYS), focusing on climate change in the Adirondacks (an evolving threat marked by uncertainty about impacts), natural gas development via high volume hydraulic fracturing (HVHF) in the Southern Tier (a sudden change not previously experienced in NYS), and loss of open space due to residential/commercial development in the Hudson Valley (an ongoing issue with which many communities are familiar). We sought to identify barriers to action and highlight critical capacity-building needs in different contexts. During fall 2012, we conducted interviews with municipal officials, consultants, and others who work closely with town governments across our three study regions. During fall 2013, we used a combination of web and telephone surveys to gather input from supervisors or high-ranking municipal officials in 258 towns (83% of towns in study regions).

Knowledge of and Concern about Environmental Issues
Local officials’ knowledge can play a critical role in responding to environmental challenges, and the extent of knowledge varied considerably from issue to issue. For example, while only 24% of Adirondack region respondents believed that local officials in their town knew a lot about climate change and related impacts, 78% of Southern Tier respondents felt that officials knew a lot about HVHF, and 76% of Hudson Valley respondents said officials knew a lot about open space development.

Knowledge of environmental issues was closely related to the amount of time towns spent discussing them. When asked to indicate which local issues received a “moderate” or “great deal” of their time, municipal officials across all regions emphasized transportation-related issues (72% of towns), protection of water quality (58%), emergency services and disaster response (54%), and economic development (50%). Other than water quality, no environmental issue was a high priority in all three regions. Region-specific differences were evident, however. For instance, 59% of towns devoted a moderate or great deal of time to HVHF in the Southern Tier (43% more than in the other regions), and 51% of towns devoted a moderate or great deal of time to open space development in the Hudson Valley (15% more than in other regions). Few towns in any of the three regions (<14%) spent any significant time dealing with climate change and related impacts. In fact, 57% of towns reported spending no time on this issue. The results highlight two points. First, New York towns place a high priority on environmental issues in specific regional contexts, and local officials tend to be more knowledgeable about environmental issues that are local priorities. Second, environmental changes that translate into immediate, day-to-day concerns are the ones most likely to be addressed.

Efforts to Address Environmental Issues
A wide range of perspectives exist across regions on whether and how to address environmental issues. Only 17% of Adirondack officials felt there was consensus within their towns to address climate change. Without consensus, towns in the region struggled to take action. On the other hand, many officials in the Southern Tier (64%) and Hudson Valley (68%) reported higher levels of agreement about potential actions towns could take to address HVHF and open space development, respectively. The enhanced sense of collective purpose within these towns created an environment more supportive of action.

The effect of consensus on policy response was particularly evident in the analysis of actions taken to address different environmental issues. Only 13% of Adirondack towns reported taking some action to address climate change (Figure 1). Although a larger percentage of towns had engaged in adaptation activities (e.g., investment in renewable energy, flood mitigation planning), these actions were not always viewed as a direct response to climate change itself. In the cases where issue awareness and concern were high, many more towns were taking action. For example, nearly two-thirds of towns in the Southern Tier and Hudson Valley regions were actively employing or developing policies to address HVHF and open space development, respectively (Figure 1). While specific actions varied by issue and region¹, they typically included updates to comprehensive planning/zoning or local laws designed to minimize the negative impacts of natural gas and open space development.

Factors Affecting Local Responses to Environmental Issues
Despite some evidence of policy responses, fewer than half of the respondents in each region described their towns as possessing a “high ability” to respond to the environmental change mentioned, highlighting a perceived need for improvement (Figure 2). Capacity to respond was considered lowest for climate change (only 7% of Adirondack towns reported high ability to address the issue). Though ratios were significantly higher for HVHF (49% of Southern Tier towns) and open space development (38% of Hudson Valley towns), a perception remained that capacity could be improved in a majority of towns.

Survey respondents identified several common factors believed to influence capacity to address environmental changes. Most towns reported inadequate levels of funding to address environmental change (Table 1), and these resources were particularly scarce for Adirondack towns attempting to deal with climate change. Support (financial, technical, etc.) from higher levels of government was also considered inadequate by a majority of towns. On the other hand,
current levels of coordination and collaboration with neighboring municipalities were considered adequate by most towns. The resources and relationships that emerged from these inter-town interactions appeared to be an important contributor to local capacity in all regions, regardless of environmental context.

There was substantial variance in the perceived adequacy of other factors that could influence towns’ responses. Availability of technical resources (e.g., access to information), knowledge, and local expertise was generally high with respect to HVHF in the Southern Tier and even higher with respect to open space development in the Hudson Valley (Table 3). This may be due, in part, to support provided by non-governmental entities (e.g., planners, consultants, university researchers and extension personnel) in these regions. In the Adirondacks, however, the availability of information and expertise was deemed insufficient for towns attempting to respond to climate change. Responses indicate additional non-governmental resources may be necessary to increase municipal officials’ awareness and facilitate climate change planning efforts. Collectively, these data suggest that (1) town officials rely heavily on colleagues in adjacent municipalities for resources and input on environmental issues, (2) town officials dealing with all types of environmental issues would benefit from more financial and technical support from higher levels of government, and (3) additional support from non-governmental entities is associated with increased knowledge, understanding, and access to data and expertise that guide environmental planning.

Conclusions
Local officials attempting to address environmental changes cope with an array of challenges that influence potential actions. Previous capacity-building research has emphasized the fundamental role of institutional frameworks that support social relationships and stakeholder dialogue, helping to identify the resources needed (e.g., funding, labor, and technical information) to act and achieve desired outcomes. By comparing and contrasting towns’ responses to different types of environmental change, this study highlights commonalities and important differences affecting local governments’ capacity to manage environmental resources in distinct contexts.

Results illuminated the critical influence that knowledge, issue awareness, and political consensus have on local government actions across all issues and regions. Findings affirm the value of dialogue and information dissemination as a precursor to local action. However, even in towns where knowledge, awareness, and consensus were present, relatively few respondents believed their towns had a high ability to respond to certain environmental issues.

Lack of funding and a sense of inadequate support from higher levels of government were the primary limiting factors to response capacity. To offset inevitable funding constraints, capacity-building efforts could emphasize cohesive regional approaches that leverage opportunities created by cooperation and collaboration among municipalities. Towns that are limited individually could expand their capacity to respond to all types of environmental changes by working together.

Despite the emergence of common themes, local capacity was also affected by situational factors and region-specific social and political forces that may necessitate different approaches to capacity building. Towns facing long-term threats with uncertain impacts on broad spatial scales (e.g., climate change) may benefit most from: (1) understanding local officials’ perspectives and priorities, and (2) enhancing access to the expertise and resources needed for decision making. Towns addressing more immediate issues with tangible impacts (e.g., HVHF, open space development) might prioritize needs such as (1) building community consensus, (2) reinforcing collaboration with neighboring municipalities, and (3) implementing proactive policies to address impacts of the environmental issue.

Local government officials attempting to plan for and respond to similar types of environmental changes should recognize and explicitly account for these capacity-building factors.

Table 1: Percentage of municipal officials rating potential capacity-building factors as inadequate or very inadequate by issue and region

<table>
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<tr>
<th>Factor</th>
<th>Environmental Issue &amp; New York Region (% of Towns Rating Inadequate or Very Inadequate)</th>
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<tbody>
<tr>
<td>Funding &amp; financial resources at local level</td>
<td>Climate Change (Adirondacks)</td>
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<td>Support (financial, technical) from county, state, or federal government</td>
<td>83</td>
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<tr>
<td>Knowledge, understanding &amp; expertise among local officials</td>
<td>60</td>
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<tr>
<td>Support from NGOs (collaboration with planners/consultants, university researchers, etc.)</td>
<td>68</td>
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<tr>
<td>Support from neighboring municipalities (coordination, collaboration, etc.)</td>
<td>58</td>
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<tr>
<td>Access to information &amp; data to guide planning</td>
<td>52</td>
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Source: Data from Survey of Municipal Officials in NYS, Fall 2013.