

# Government and Resource Management Sector Report

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## INTRODUCTION

The following material is the result of discussions held by the Government and Resource Management Group during three breakout sessions. The discussion focused around the perspectives of eight participants representing and familiar with various sub-areas of the upstate New York/New England region. The perspectives include those of state level resource managers with particular expertise in forestry, watershed management, and air quality issues. An elected, state-level policymaker, a state-level geographic information system (GIS) administrator, and an appointed local government administrator were also included in this stakeholder group.

Each of the three breakout sessions started with an explanation of the charge to the group. A facilitated nominal (silent) process was used in the first breakout session with a 15 minute period provided for individual recording of responses. This was followed by a round table presentation by each participant, each offering one concern/vulnerability at a time.

The discussion continued until all the concerns of participants were summarized and recorded. Each participant was asked to look at the list that was generated and suggest those which seemed to be identical or very closely related. The list was collapsed only when the participants owning the responses were in agreement. The discussion process was more open as the group exercise continued and participant understanding of individual concerns increased.

It was clear during the discussion that a range of opinion existed within the group around the certainty of human impact on climate change impacts. Never-the-less, the group identified and prioritized current concerns and stresses, and reached consensus on how climate changes could act on such concerns. During the discussion the group also identified some important data and information needs. Finally, members described certain coping strategy characteristics and implementation complications.

## SIGNIFICANT FINDINGS

### Concerns, Information Needs, and Mitigation Complexity

Resource managers identified a general lack of awareness and understanding of environmental problems as a priority concern. This concern was coupled with the inability to influence individual and corporate behavior and a lack of resources adequate to address current resource problems. In other words, it is anticipated that the complexity of current resource management issues will increase with global climate change, making the existing need for better data and information more critical, and resource allocation for mitigation more problematic.

Some natural systems (air, water, woodlands) can not be sustained at current demand levels. Increased strain for climate change is of critical concern, particularly for those synergistic impacts which link ecosystems. Related data and information needs are particularly vexing and are expected to grow in significance and complexity with climate change. Forest fragmentation and area specific declines in vigor exemplified the need for increased synergistic and intra-system understanding.

Even if it was now clear what mitigation actions should be undertaken, it does not appear that available resources would be adequate to support such actions. Finally, complex cultural and institutional dynamics exist in upstate New York and New England, which could function as barriers to mitigation potential. The devolution of government toward local levels and civic disengagement are two such dynamics. Institutional complexities are well understood as mitigation barriers by resource managers trying to conserve/manage air, water, and woodland systems which cross boundaries of various municipal entities.

Demands for increases in clean water availability must be met, as well as concurrent demands to maintain various and often competing community

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infrastructure components. Such infrastructure demands can be driven by current population migration patterns within and between geographic regions. No infrastructure component seems exempt from the impacts of such migration patterns. Adequate housing, public health, and social service institutions, transportation systems, communication systems, water supply, and sewage systems are all impacted as population shifts occur. These related difficulties would become exacerbated if increasingly rapid population shifts occur in response to climate change impacts.

## Coping And Mitigation Strategies

From the viewpoint of this sector, mitigation strategy begins with the design and piloting of multi-jurisdictional, multidisciplinary, educational networks. Such networks would comprise a range of target audiences, including the general public and specific stakeholders.

The purposes of such educational networks would include the engagement of local stakeholders on their own "turf" as well as more general convening strategies for focusing purposes. Such engagement is intended to result in short and long-term action plans and strategies.

Action plans for addressing climate change should be constructed upon present, cost-efficient programs related to climate change, particularly promoting those with anticipated mutual gains or win/win strategies. For example, energy efficiency should be promoted everywhere in all forms.

Forest management programs and practices which are intended to improve the ability of forest ecosystems to sequester carbon should be facilitated as should programs that are designed to develop and deploy alternative new technologies that reduce carbon dioxide emissions.

## THE FOUR QUESTIONS ADDRESSED

### 1. What are the current concerns and stresses facing regional stakeholders in the government and resource management sector?

Existing concerns/vulnerabilities are presented in groupings which represent a descending order of priority. This ranking of priorities was the result of an individual balloting process which occurred at the end of the first breakout session. It was clear during the discussion that a range of opinion existed within the group around the certainty of human impact on climate change impacts.

## Priority Group 1

The following concerns/vulnerabilities were each considered to be among the five most significant by four of the eight government/resource manager stakeholders in this group.

- The lack of an awareness or understanding of environmental problems and related impacts.
- The inability of the stakeholder to influence individual and corporate behavior.
- Societal resources and dollars are limiting/lacking to address the current problems.

## Priority Group 2

The following concerns/vulnerabilities were considered to be among the five most significant by three of the eight government/resource manager stakeholders in this group.

- The demand for natural resources is increasing, yet some resource demands already cannot be sustained.
- We do not completely understand natural systems and resource management is complex.
- Information and data on climate-related issues is lacking.
- There exists limited resources for maintenance of existing infrastructure, yet pressure/impacts from human migration patterns on infrastructure is increasing.
- Forest/ecosystem health issues, some of which include: forest fragmentation, areas in decline, and loss of bio-diversity.

## Priority Group 3

The following concerns/vulnerabilities were each considered to be among the five most significant by two of the eight government/resource manager stakeholders in this group.

- The demand for clean water is increasing.
- Local and state governments are hard-hit by un-funded state and federal mandates and by the economic impacts of complying with environmental regulations.

## Priority Group 4

The following concerns/vulnerabilities were each considered to be among the five most significant by one of the eight government/resource manager stakeholders in this group.

- Shoreline erosion for some communities is a serious problem.
- The local nature of landuse controls and subsequent ability/inability to respond to resource management dynamics makes implementing coping/mitigation strategies difficult.
- Local and state governments have other non-climate concerns and have difficulty providing government services at current resource levels, e.g., housing, public health/social services.
- There are current stresses on air quality and resource management due to the complexities of synergistic reactions.
- The limitations of current economic models makes decision making difficult.
- Catastrophic events are costly and of pressing concern.

### Priority Group 5

The following concerns/vulnerabilities were each identified by the group but not considered to be among the five most significant by any of the eight government/resource manager stakeholders in this group.

- The impacts of climate change on tourism is of concern.
- The uncertainty about the temporal aspects of climate variability is a concern.

### 2. How will climate variability and climate change modify the current concerns and stresses of the government and resource managers in the region?

Virtually all the concerns/vulnerabilities identified were felt to be amplified by climate variability and climate change one way or another. It was noted during the discussion that certain concerns, like lack of information and data (Priority Group 2) and limitations of economic models (Priority Group 4) would perhaps become more significant issues within the dynamics of global climate change.

Particular attention was also called to the amplification of the economic impact of complying with environmental regulations (Priority Group 3), from a political perspective. That is, significant legislative attention is currently directed toward the issue of un-funded mandates in the New England and upstate New York region. Debate and challenge is now occurring around the constitutionality of un-funded government mandates as an issue affecting

the relationship between levels of government. Can the state, for example, mandate local government to provide specific services in the absence of providing, or allowing for, the provision of sufficient funding with which to discharge the mandate?

Similarly, the impact from climate change, along with ever increasing demands on limited societal resources and dollars, receives attention. Considerable discussion also focused on the added costs from doing nothing and putting off decisions, with the inevitable consequence of even greater costs from later mitigation strategies. A parallel example of this approach to mitigation, would be a community avoiding road maintenance to such an extent that road replacement becomes necessary at far greater costs.

### 3. What information and data are needed by government and resource managers to fully understand and address climate-related issues?

Although mindful of the request from workshop organizers to consider this topic, the group did not (due to time constraints) include specific discussion time focused on this topic (previous discussion did however define the value of isolating such data and information needs in relation to mitigation strategies as well as to the underlying science).

Never-the-less, the concerns/vulnerabilities identified by the group do include specific reference to data and information needs. The resource management representatives identified the need to better understand the complexity of and inter-relationships between the natural systems being managed. Discussion occurred which was specific to the need for better information about the synergistic relationships between air quality, landcover, (e.g., forest lands) and water quality.

Local and state government representatives identified data/information needs related via cultural connections. That is, assuming the realities of weather variability as a characteristic of climate change in the Northeast, with consequent synergistic impacts on the inter-relationships of natural resource systems, (e.g., earth systems: air/landcover/water), what impacts can be anticipated on community infrastructure? Within what time frame can such impacts be predicted and with what certainty can such impacts be anticipated on community infrastructure? Data and information about water quality, for example, must be correlated with data and information about water supply systems and sewage treatment facilities (infrastructure) which ultimately must be

coupled with estimations of the mitigation costs related to both.

More information is also needed on the related impacts on housing stocks, transportation systems, communication systems, food reserves, energy generation and distribution and a host of social institutions designed by governmental policymakers and implementors to provide such basic services.

#### **4. What types of strategies and approaches are available for coping with, or mitigating, climate change stresses for this sector?**

The identification of general mitigation strategies was undertaken by this stakeholder group with the preceding concerns/vulnerabilities in view. The strategies identified were thought to be responsive to multiple sets of these concerns and so they are not presented in direct one-to-one correspondence.

Time constraints prevented the group from considering mitigation strategy priorities. It does seem, however, that given the uncertainty around the temporal aspects of climate change rates and evidence from polar ice cores of extremely rapid (2-4 years) paleo-climate change (on a global scale), that short-term coping strategies should be considered along with longer-term solutions. It was not possible in fact to develop a truly comprehensive response to the need for mitigation strategies. The strategies offered and the comments made about the design characteristics of such strategies will hopefully prove useful as a starting point.

It was suggested in this discussion that certain operational efficiencies should be strongly considered in the design of mitigation strategies, including the use of and testing of pilot programs, purposefully designed to provide mechanisms which extend to local levels of government, including but not necessarily limited to towns. Discussion also included the identified need for monitoring and evaluating the results of such efforts with deliberate intent to modify the design of such programs based on such monitoring and evaluation, (including cost-effectiveness considerations). Participant awareness of telecommunication capability and interest in such programs in the Cayuga County area of upstate New York was also noted during the discussion.

As the discussion progressed it became increasingly clear that certain cultural characteristics of the upstate New York/New England region will impact mitigation potential. On one hand, the observation can be made that it has been possible within the region to absorb a high population concentration and increase woodland landcover at the same time (woodland landcover serving as a natural means to sequester carbon). Nevertheless, institutional governance mechanisms are highly localized in this region and thus great in number. Mitigation strategies, particularly with landuse implications, must take this institutional complexity and diversity into account.

#### **Summary Of Coping And Mitigation Strategies**

The following list, which is not prioritized, resulted from group consideration of this question:

- Design and develop an educational network, across agency / group lines to educate the general public and particular audiences, e.g., legislators, foresters, industry, and meteorologists.
- Develop / use alternative and remarkable new technologies to reduce carbon dioxide emissions, i.e., hydro-electric power generation, non-fossil fuel power sources, alternative fuel vehicles, fusion, etc.
- Develop action plans and strategies for addressing climate change by engaging stakeholders on their turf as well as bringing them together for focus purposes.
- Promote increased energy efficiency everywhere, and in all forms.
- Improve the ability of the forest ecosystems to sequester (retain) carbon through forest management practices that are designed to retain maximum amounts of carbon (including the use of wood).
- Build upon present, related and cost-efficient programs. Promoting those with anticipated mutual gains or win / win strategies.

# GOVERNMENT AND RESOURCE MANAGEMENT APPENDIX I

## Initial Concerns From The First Breakout Session

*(not prioritized, collapsed or grouped)*

1. Impacts of sea-level rise
2. Education of the public
3. Impacts on future water supply and management (precipitation and runoff/ demands fluctuations)
4. Budgetary impacts on federal and state agencies due to EPA regulations which are often based on less than certain data
5. Whether we have global climate change or not, there are expected to be increased demands on limited resources
6. Effect on progress already made on air quality improvements
7. Forest health and productivity as it relates to economy and quality of life
8. Complexity and average ability to relate
9. How to integrate even more complexity in resource management
10. Impacts of tourism and ski industry
11. How to pull all stakeholders together to see issue and come to agreement on actions to be taken
12. Impacts on water quality issues: ground and surface water
13. Need in New Hampshire to improve state-of-the-art meteorology
14. Impacts of forest wildlife habitat through fragmentation
15. Impacts of doing nothing and putting off approaches
16. How do we make average person aware of current issues
17. Uncertainty around temporal aspects or timing of impacts
18. The lack of sufficient funding for monitoring
19. Need to understand the limitations of various economic models and predicting impacts levels
20. Providing services: that is the impacts on infrastructure
21. Impacts on resources already at unsustainable levels
22. Synergistic effects of pollutants on people
23. local nature of landuse controls in New England
24. Increased frequency of extreme climate events and their costs
25. Complexity of dealing with landowner claims against the state that are weather driven as related to landuse patterns
26. Need to influence individual and corporate behavior patterns
27. Impacts on transportation systems
28. Impacts on housing: where and what kind of housing
29. Public health issues, home health care, and food supplies
30. Impacts on social services