

Planning for an Unknowable Future: Uncertainty in Climate Change Adaptation Planning

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While there is strong scientific consensus that climate change is occurring, there remains considerable uncertainty in the timing, magnitude, and, in some cases, the direction of change. Ignoring this uncertainty can cause adaptation plans and strategies to be ineffective and even maladaptive. As such, there is growing awareness that adaptation planning must manage uncertainty in climate change projections. Significant attention has been dedicated to refining existing and developing new planning techniques to manage uncertainty, but how is uncertainty actually managed in local adaptation planning processes?

In this presentation, I will discuss results from a content analysis of 44 stand-alone, local climate adaptation plans in the U.S. and informant interviews in three communities: Boulder, CO; Denver, CO; and Salem, MA. While most of the 44 plans recognize uncertainty as a challenge for adaptation and many demonstrate awareness of planning approaches that account for uncertainty, very few actually employ those approaches. Moreover, they tend not to prioritize strategies or establish methods and metrics to evaluate implementation, which may be important in managing uncertainty. This aligns with previous work that found that even though most planners are aware they face deep uncertainty, they continue to develop plans based on the assumption that the future can be predicted.

Informant interviews in three communities, however, demonstrate that adaptation plans do not fully reflect how uncertainty is managed in the planning process. Interviews suggest that uncertainty influences every step of the planning process from vulnerability assessment to monitoring and evaluation. Rather than focusing on climate projections in the vulnerability assessment, which may reinforce traditional planning approaches and assumptions that ignore uncertainty, they emphasized sensitivity and adaptive capacity. In doing so communities are beginning to shift from asking, “what will happen?” to asking a more helpful question: “What actions that we can take today will serve us best in an uncertain future?” Interviewees also viewed most of the strategies proposed in their adaptation plan as no-regrets. They saw numerous benefits to no-regret strategies including developing awareness of adaptation, building success, and creating long-lasting programs. Many interviews felt the largest challenge associated with uncertainty came after the adaptation plan was complete, when the community began prioritizing strategies and allocating funding for implementation. The difficulty in getting funding for adaptation strategies has further pressured communities to adopt no-regret strategies. Interviewees also viewed monitoring and iteratively planning as important tools to manage uncertainty in climate change projections.

Typically, the literature discusses uncertainty in climate projections as debilitating but interviewees suggested that it is also an opportunity. “I think we probably are going to be better prepared recognizing that we don’t know what is happening,” said one stakeholder in Denver’s adaptation planning process. To realize this opportunity, however, we need to continue to challenge traditional decision-making process and highlight examples of how communities can begin to engage in planning for an uncertain and unknowable future. This talk is intended to provide examples of initial steps communities can take to better manage uncertainty in the planning process.