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### From Indicators to Action: Evaluating the Usefulness of Indicators to Move from Regional Climate Change Assessment to Local Adaptation Implementation

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Abstract

As the effects of climate change become increasingly damaging and costly, a public and political consensus is building for planning that will protect private property and public infrastructure. Climate-related planning has primarily focused on mitigation, assessing vulnerability, and building adaptive capacity. Adaptation has not gained substantial ground in the area of implementation. The uncertainty associated with climate change projection and variability has emerged as a dominant barrier to adaptation. However, as knowledge accrues, the global and national science communities have been developing more detailed, fine-scale climate projections. Regional climate assessments are available for the sub-national climate regions in the U.S., and have been created based on the measurement of many components of climate, often referred to as

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indicators. This thesis evaluates the use of those and other indicators as adaptation decision support tools. Findings suggest that indicators can be effectively integrated into a step-wise, risk-based adaptation planning process to overcome barriers to adaptation, many of which contain concern over climate change uncertainty at their core. The combination of climate science data and information about the local experience of climate change are found to be key to the effective use of indicators in adaptation, as is the direct integration of indicators into the policy-making process. Ideally, these indicators can be used to inform trigger points for phases in a flexible adaptation approach, but more work is needed to develop methods for managing the risks and costs associated with adaptation.

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