



## CLIMATE CHANGE ADAPTATION

### Federal Efforts to Provide Information Could Help Government Decision Making

Highlights of [GAO-12-238T](#), a testimony before the Subcommittee on Oceans, Atmosphere, Fisheries, and Coast Guard, Committee on Commerce, Science, and Transportation, U.S. Senate

#### Why GAO Did This Study

Climate change is a complex, crosscutting issue that poses risks to many existing environmental and economic systems, including agriculture, infrastructure, ecosystems, and human health. A 2009 assessment by the United States Global Change Research Program (USGCRP) found that climate-related changes—such as rising temperature and sea level—will combine with pollution, population growth, urbanization, and other social, economic, and environmental stresses to create larger impacts than from any of these factors alone.

According to the National Academies, USGCRP, and others, greenhouse gases already in the atmosphere will continue altering the climate system into the future, regardless of emissions control efforts. Therefore, adaptation—defined as adjustments to natural or human systems in response to actual or expected climate change—is an important part of the response to climate change.

This testimony addresses (1) the data challenges that federal, state, and local officials face in their efforts to adapt to a changing climate, (2) the actions federal agencies could take to help address these challenges, and (3) federal climate change strategic planning efforts. The information in this testimony is based on prior work, largely on GAO's recent reports on climate change adaptation ([GAO-10-113](#)) and federal climate change funding ([GAO-11-317](#)). These reports are based on, among other things, analysis of studies, site visits to areas pursuing adaptation efforts, and responses to a web-based questionnaire sent to federal, state, and local officials.

View [GAO-12-238T](#). For more information, contact David Trimble at (202) 512-3841 or [trimbled@gao.gov](mailto:trimbled@gao.gov).

#### What GAO Found

As GAO reported in October 2009, challenges from insufficient site-specific data—such as local projections—make it hard for federal, state, and local officials to predict the impacts of climate change, and thus hard to justify the current costs of adaptation efforts for potentially less certain future benefits. Based on responses from a diverse array of federal, state, and local officials knowledgeable about adaptation, related challenges generally fit into two main categories: (1) translating climate data—such as projected temperature and precipitation changes—into information that officials need to make decisions and (2) the difficulty in justifying the current costs of adaptation with limited information about future benefits.

Federal actions to provide and interpret site-specific information would help address data challenges associated with adaptation efforts, based on responses to GAO's web-based questionnaire sent to federal, state, and local officials and other materials analyzed for its October 2009 report. In addition to several potential federal actions identified as useful by respondents to GAO's questionnaire, including the development of state and local climate change vulnerability assessments, GAO's 2009 report also contained information about the creation of a federal climate service. Specifically, about 61 percent (107 of 176) of respondents rated the "creation of a federal service to consolidate and deliver climate information to decision makers to inform adaptation efforts" as very or extremely useful. Respondents offered a range of potential strengths and weaknesses for such a service. For example, several respondents stated that a climate service would help consolidate information and provide a single information resource for local officials. However, some respondents to GAO's questionnaire voiced skepticism about whether it was feasible to consolidate climate information, and others stated that such a service would be too rigid and may get bogged down in lengthy review processes. GAO has not made recommendations regarding the creation of a climate service within the National Oceanic and Atmospheric Administration or any other agency or interagency body.

Federal strategic planning efforts could be improved for many aspects of the climate change enterprise. For example, GAO's October 2009 report on climate change adaptation concluded that, to be effective, related federal efforts must be coordinated and directed toward a common goal. This report recommended the development of a strategic plan to guide the nation's efforts to adapt to a changing climate, including the identification of mechanisms to increase the capacity of federal, state, and local agencies to incorporate information about current and potential climate change impacts into government decision making. Some actions have subsequently been taken to improve federal adaptation efforts, but GAO's May 2011 report on climate change funding found that federal officials do not have a shared understanding of strategic governmentwide priorities.