

Building a sustained climate assessment process

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Abstract The leaders and authors of the Third US National Climate Assessment (NCA3) developed new modes of engaging academia, the private sector, government agencies and civil society to support their needs for usable, rigorous, and timely information and better connect science and decision-making. A strategic vision for assessment activities into the future was built during the NCA3 process, including recommendations on how to establish a sustained assessment process that would integrate evolving scientific understanding into decision making to manage the risks of climate change over time. This vision includes a collaborative assessment process that involves partnerships across a diverse and widely distributed set of non-governmental and governmental entities. The new approach to assessments would produce timely, scientifically sound climate information products and processes, rather than

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focusing on the production of single quadrennial synthesis reports. If properly implemented, a sustained assessment would be more efficient and cost-effective, avoiding the painful and time-consuming process of beginning the assessment process anew every 4 years. This ongoing assessment would also encourage scientific and social innovations and explore new insights and opportunities, building the capacity to advance the development and delivery of climate information to meet societal requirements and benefit from scientific opportunities.

1 Introduction

As communities across the nation find themselves coping with evolving climate change impacts, decision-makers are increasingly focused on adapting to both familiar and unexpected challenges. The US federal government has conducted a series of climate assessments to synthesize the state of knowledge about physical climate science and impacts. Historically, the assessments have often been more valuable to the scientific community than decision makers; delivering usable, rigorous and timely information has been difficult. The Third National Climate Assessment (Melillo et al. 2014) developed new modes of engagement between the government, academia, the private sector, and civil society for connecting science and decision-making. The experience of the NCA3 suggests that assessments of both scientific progress and the implications for managing risk, when undertaken on an ongoing and strategic basis, can improve the connections between research agendas and practical applications.

In the initial organizational stages of the NCA3 there was extensive discussion throughout the US climate assessment community about how to improve the overall outcomes of assessment activities. Many in this community had volunteered to participate in past assessments and had reached a broad conclusion that a longer-term, more sustained approach to conducting assessments over time would be more efficient and generate multiple benefits. The vision of building a sustained climate assessment process, now reflected in the Strategic Plan (National Science Technology Council 2012 for the US Global Change Research Program (USGCRP)), is aimed at increasing the program's ability to effectively and efficiently support the expanding needs for decision-relevant information.

This vision of a sustained assessment process centers on empowering civil society, the business community, and multiple levels of government with knowledge needed to more effectively manage the risks of climate change. It includes sustained dialogue with users to better understand decision contexts and information needs (and hence novel ways for users to interact with Federal agencies), preparation of a wider range of products, continued innovation in communication of information about climate change risks and opportunities, and additional efforts to build capacity to decentralize assessment across a diverse and widely distributed set of non-governmental entities and multiple levels of government. This assessment process would produce timely, scientifically sound climate information products, systems, and processes to support decision-making across the nation, building the capacity to *advance* the development and delivery of climate information to meet societal requirements and benefit from scientific opportunities.

This article provides background on historical approaches to US National Climate Assessments, lessons learned from them, and the rationale for a sustained assessment process. It concludes with discussion of the challenges involved in building and evaluating a sustained assessment, including suggested metrics of success. The discussion also considers the recommendations of the National Climate Assessment Development and Advisory Committee