

**FURTHER DEFINING  
ACTIONABLE INFORMATION**

American Meteorological Society Annual Meeting  
Austin, Texas

**SESSION REPORT**

January 2013

**INSTITUTE  
for  
GLOBAL  
ENVIRONMENTAL  
STRATEGIES**

*Leaders in the public, private and international arenas came together to consider how to further define and develop “actionable” climate information. The discussion was held during a Town Hall session at the American Meteorological Society (AMS) 2013 Annual Meeting in Austin, Texas. The Town Hall was part of a National Climate Assessment Special Session.*

*This report presents details about the session, including background, list of participants, as well as key observations derived from the discussion.*

## BACKGROUND

Recent record-breaking extreme weather and climate events have highlighted the growing need for environmental information to help mitigate and better manage risk. Government agencies worldwide are faced with an unparalleled challenge to meet the demands of a quickly expanding and diverse user base.

To address this challenge, stakeholders have engaged in a series of discussions to understand how government agencies such as the National Oceanic and Atmospheric Administration (NOAA) and the private sector (industry, academic institutions, and non-governmental organizations) together can meet growing demand for climate information.

At a session of the October 2011 Open Science Conference of the World Climate Research Programme (WCRP), government, academic, and business leaders addressed climate science needs in service to society. A key recommendation that resulted from this discussion was for agencies such as NOAA to provide “actionable” climate information. However, key questions from that session were “What constitutes actionable?” and “How can climate information be presented to this new

and growing constituency of users in a more relevant way?”

To better understand what characterizes “actionable” climate information and how such information can be exploited, the Institute for Global Environmental Strategies (IGES) convened the Executive Roundtable on Climate, Private Sector Engagement, and Strategic Forecasting in April 2012 in Asheville, North Carolina. Roundtable participants agreed that climate information is most useful and valuable when it informs decisions. They found that actionable climate information targets a variety of time and spatial scales and meets the following criteria: credibility, translatability, and high present value.

The goal of the AMS Town Hall session was to enlist the help of practitioners to further define actionable climate information and consider how this information can be delivered and used to better manage risk and guide adaptation.

### **Town Hall Participants included:**

- **Antonio Busalacchi**, Chair, University of Maryland Council on Environment; Director and Professor, Earth System Science Interdisciplinary Center (ESSIC) (Moderator)
- **Nancy Colleton**, President, Institute for Global Environmental Strategies (IGES) (Rapporteur)
- **Brian Beitler**, Mission Support Program Manager, ERT, Inc.
- **Arthur Lee**, Principal Advisor, Climate Change, Chevron Corporation; Member, Board of Atmospheric Sciences and Climate, The National Academies
- **Sarah Maxwell**, Director, Innovative Applications and Training, StormCenter Communications, Inc.
- **Barbara Ryan**, Secretariat Director, Group on Earth Observations (GEO)

## OBSERVATIONS

- *Actionable climate information is value-added information that supports the evolving decisions specific to each user. Therefore, it is very important to understand the needs of the user in developing and delivering the information product.*

Panelists agreed that raw data alone is insufficient to help decision-makers assess and manage risk. Instead, users – citizens, governments and businesses – require information that is tailored to their decisions. According to GEO’s Barbara Ryan, the open access data policy adopted by this intergovernmental body is the first step in the value-added process that enables actionable information. She explained that the steps GEO has recently taken to improve its engagement with the private sector are rooted in the understanding that growing the community of stakeholders is necessary to share the raw data collected by the government and allow others to add value to it for decision-making.

Chevron Corporation’s Arthur Lee discussed how the information needs of the energy industry have changed over time. He described Chevron’s needs “from the well to the pump” and how information needs differ in respect to supporting transportation, operations, versus exploration requirements.

Lee further noted that risk management has always been a part of the business decision strategy of the industry and that climate is “simply another risk” to be considered. Permafrost thawing in the Arctic, access to fresh water and the migration of species are some of the potential impacts that this industry is beginning to grapple with. In this respect, their climate information needs have evolved in the past 50 years. Lee added that companies like his now utilize numerical, physical and economical models to inform decisions related to, for example, building new facilities, such as refineries, and incorporating design features that can help them last for decades to come.

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Officials from various agencies contributing to the U.S. Global Change Research Program (USGCRP) that were in the audience asked panelists whether their own information needs are met and what kind of attributes they should emphasize as they develop new products and services in the future. The discussion revealed that even those already utilizing climate information to inform their decisions, such as Lee, are unable to specify their climate information needs. Lee described the impacts of climate change as “pervasive” in his company’s supply chain but was unable to define what actionable information means in this context. Instead, he called for more localized and specific information.

ESSIC’s Antonio Busalacchi said that there may be too much information out there for companies to tackle at this point, and that intermediaries knowledgeable of the data and resources available could help users understand and define their needs. He discussed the possibility of developing “adaptation test beds” to understand what sort of intermediary may be necessary to help users define those questions. NOAA officials in the audience endorsed this idea as a way to derive users’ decision-making process.

Panelists agreed that targeted user engagement is crucial to adapt existing and emerging climate information tools into a format that is usable and actionable. According to ERT’s Brian Beitler, who spent 20 years as a weather officer in the Air Force, for both civilian and military users, this engagement must be iterative and personalized in order to be successful. He added that user engagement is also critical to improve the ability of NOAA’s National Climatic Data Center (NCDC) to define and develop access methods for this information.

- *Communicators can help bridge the user and scientific communities to help define user requirements and identify information products to match those needs.*

StormCenter Communications' Sarah Maxwell said that companies like hers, which work with communicators, scientists and users, can serve as a "pipeline" to help decision-makers define what actionable information means for them and influence the data so that it better speaks to those needs. She described the process in the following steps: listen to the customer, understand both the data and the problem, and then decide for the customer what will be valuable to them.

Lee agreed that, from a user perspective, there is a need for more conversation and an iterative process that allows users and information providers to understand each other's language. Ryan added that this is an opportunity to shift away from the traditional "push" of information, and create more of a "pull" that better engages users, many who do not know what questions to ask.

- *Improved climate communication to the public is based on trust.*

Maxwell argued that communicating climate information in a way that does not make citizens react negatively is tied to educating the people that they do trust and relying on them as spokespersons. In StormCenter's experience, she explained, local TV meteorologists have a way of reaching their communities to communicate information at a truly local level, leading to positive reactions. She emphasized that trust building will lead to improved climate communication.

Ryan also spoke about trust in her remarks, saying that the way climate information is traditionally approached, where emphasis is placed on explaining how the information was acquired, actually erodes citizens' confidence in the science behind the message. She said that climate communication campaigns should always be developed in light of the user, whether citizens, policymakers or scientists.

## CONCLUSION

This session helped to specify some of the challenges in meeting growing demand of actionable climate information, that is information that enables users to make informed decisions. To be actionable for specific users, this information must speak to their unique decisions and be able to evolve along with those needs. Panelists agreed that at this stage, many users are unable to identify exactly the kind of information they need and called for more, targeted engagement among communicators, scientists and users. An iterative engagement process can allow for greater understanding on both sides, providers and users, in order to identify, understand and meet evolving actionable climate information needs.



*This report was developed by Nancy Colleton and Laura Delgado López as part of the IGES' Defining Actionable Information project, supported via North Carolina State University's North Carolina Institute for Climate Studies (NCICS). Reference Contract Control No. 19905.*