Advance paper submitted to the IPCC Expert Meeting on Communication, Oslo, Norway, 9-10 February 2016

Advance Paper on Communication in the U.S. National Climate Assessment (2014) Susan Joy Hassol, Director, Climate Communication:

To make the assessment as accessible as possible to its various audiences, decades of experience by many kinds of professionals went into ensuring good communication practices in the third U.S. National Climate Assessment (NCA) released in May 2014.

Attention to communication was integrated from the outset as the best outcomes are achieved when a communication perspective is included in the whole range of decisions: how to organize the report, what questions to ask, what scenarios to use, how to present them, what examples to highlight, and much more.

The first ingredient was, of course, the latest, most comprehensive science. There was also an editorial team whose expertise included how to explain complex science in plain language and how to present and synthesize large bodies of information. Carefully selected professional photographs added another dimension. Team members also included skilled graphic designers who worked closely with the authors and editorial staff to simplify and clarify charts and graphics. Web specialists were additional key players.

In successful efforts, all of these elements come together in an integrated whole in an iterative process. It is not sequential! Too often, scientists write technical chapters and then turn them over to editors to "translate." But it should not be a hand-off. Instead, it should be a conversation – or rather a long series of conversations that create a whole that is far more than the sum of its parts. The process is integrated, iterative, and continuous.

Among the strategies used in the 2014 NCA was developing simple, clear messages, especially in the summary products including the Overview and Highlights. We illustrated those messages with professional quality photographs carefully selected (with review and approval by author teams) using the latest knowledge on how images are perceived. There are people in many of these photographs, which were largely absent from earlier assessments. Including human faces in climate change imagery has been shown to make the issue feel less distant, and more personal and relatable. These images help communicate the major, cross-cutting messages that are reinforced throughout the report: climate change is happening now, it is having widespread impacts, and there are important opportunities to do something about it. We made an effort to include stories (case studies) and photographs of people taking action in response to climate change.

Generally, pairing the threat and the opportunity together is most effective because discussing the problem without mentioning what can be done about it can leave

people feeling helpless. This presents a special challenge to the IPCC because of the Working Group structure and the fact that the reports of the three working groups are released separately. Waiting for the release of the synthesis report to make these linkages is not optimal. Responding to this challenge remains a question for those preparing the next round of IPCC reports.

The National Climate Assessment editorial team worked closely and iteratively with the author teams to edit the entire report. We removed jargon, clarified language, and paid attention to words that mean different things to the public than to scientists. I have written and spoken often on this topic of words that mean different things, including in a TEDx talk and in articles that can be found on the website climatecommunication.org

Issues around likelihood and confidence language were discussed at great length among the author team and advisory committee. In the end, the decision was made to use a plain language approach in the Highlights (the 100-page synthesis report). This is in contrast to the two lexicons used in the IPCC reports for likelihood and confidence. In the main report chapters, the NCA applied a system for communicating levels of confidence, but instead of including it in the main text, it was placed in a special section at the end of each chapter called "Supporting Evidence." The Supporting Evidence section of each chapter includes information on the process used by the author team to decide on the Key Messages, the evidence base supporting these Key Messages, new information and remaining uncertainties, and an assessment of confidence in each main finding based on the evidence: very high, high, medium, and low. A table explaining how to interpret each of these four terms is included immediately below the assessment of confidence.

There is an art to summarizing and synthesizing. Chapter by chapter summaries are not always the best approach. Seeking out cross-cutting findings, messages, and themes is a good way to begin. And summarizing can become too general; there is a need for concrete examples. The NCA team developed Key Messages for each of the 30 chapters as well as a set of 12 cross-cutting findings for the report as a whole. The 100-page Highlights document is organized around the 12 report findings. In it we used icons to provide traceability to the underlying chapters for readers who want more detail.

In the NCA, graphs were never simply dropped in as they appeared in a scientific journal. We strived to make them accessible. We also produced further simplified versions of a limited set that were "broadcast ready" so the media could use them. This is important because media professionals are busy and often don't have time to recreate graphics, and also because when they attempt to recreate scientific graphics, mistakes can sometimes be introduced. Most people will never see the report – they will see only what comes out in the media, so making such graphics available to the media is important. In the case of the NCA release, President Obama met with broadcast meteorologists from around the country to discuss the report,

and our broadcast ready graphics were used in many of those TV segments. They were also used, and are still used, in a wide variety of other media outlets.

An innovative, inviting, and visually striking website made the report accessible and appealing. The site used the latest design techniques and a narrative approach. It was designed to allow viewers to share pieces of the assessment on social media by providing icons to share a key message, figure, or sub-section directly to Facebook or Twitter. The site also allows viewers to download each graphic and to obtain detailed information including meta-data on each graphic. In addition to the web experts on the staff of the Technical Support Unit, a web design firm was retained to help create the state-of-the-art website.

Media training was an essential element of our success. We held a series of webinars for the full author team during the week before the release, as well as a 2-day, inperson workshop for the spokespeople who were in DC for the release. This included preparation and practice for print, radio, and TV interviews. We also created slide presentations for the authors to use with non-technical audiences and reviewed techniques for communicating with these audiences. Central to all of this training was a focus on the three overarching messages of the report and examples to bring those messages to life. The resulting media coverage showed that the full range of communication practices outlined above worked together to successfully deliver the main messages that emerged from the assessment.

Another aspect of communication concerns engagement and outreach. A network of stakeholder groups (NCAnet) was organized early in the process, providing opportunities for engagement throughout the assessment process, release, and aftermath.

In sum, the third U.S. National Climate Assessment involved no compromise of scientific accuracy while integrating communication best practices that produced an assessment that remains useful to a wide range of audiences.