American Meteorological Society, NCA Town Hall

Wednesday, January 25, 2012 12:15-1:15pm

Kathy Jacobs's presentation

The 1990 Global Change Research Act required integration and evaluation of USGCRP outcomes and evaluation of impacts on certain sectors, but others have been selected based on a risk assessment framework, including impacts of climate change on tribal, indigenous and native lands and resources and rural communities and development. The assessment is trying to look at this from a systems perspective and not just individual impacts on individual sectors.

There are also biogeographical cross-cuts, such as coastal zone, development, and ecosystems; and a number of watersheds.

The federal advisory committee has working groups that are trying to help with sustaining the NCA effort and building methodologies. This involves scenarios, requests for information, coordination, science of climate change, etc.

Four different types of scenarios are being developed: asking people to consider a low and high emissions scenario, and to look at new scenario information provided by the assessment. Other scenarios can be used by the input teams, but CMIP5 has not come out early enough to use it in a consistent way across sectors, so there will just be comparison work done in the climate section chapters.

We are trying for the first time to meet the 4-year GCRA timeframe, and at the same time have the largest assessment yet and build a sustained process. Technical inputs are due March 1 and author teams' input (draft chapters) are due June 1. Our goal is to have the report out by December 2013. Many additional assessment activities and products will be generated during this time to be released in 2014 and beyond, as this is an on-going assessment. About one-third of the 60 NCADAC members are on the writing teams.

We have focused on a multitude of engagement activities, such as a website, newsletters, workshops, Federal Register Notices, "climate conversations", and the first ever Request for Information from the public, from which we received over 120 responses. Most recently we have been building NCAnet, which is a partnership with around 40 organizations (and growing) in support of the Assessment.

Questions to Panel

Kathy: Nancy, what's your perspective as to how this assessment is different from others? And can you talk a little about cross-sectoral efforts and what's being gained from that?

Nancy Grimm: The 2009 NCA was a new experience for me. I think there was a real time crunch on that effort too, so that is not a big difference from this experience. But what I'm seeing now is that there's really been a very strong effort to bring together a large network of people (government, academia, NGOs, private sector), which is a big improvement and quite different. As for cross-sectoral efforts, I was very heartened to see a focus on the human dimension and see cities brought in as an important

component; thinking about impacts of climate change on cities and adaptation strategies for cities. This is consistent with the new USGCRP Strategic Plan that includes a new expanded role on the human dimensions and societal dimensions of global change.

Since July, I have been involved with two cross-sectoral efforts, including urban/infrastructure/vulnerability and biogeochemical cycles. For the urban effort, we've been helping to coordinate and organize the technical inputs. Urban efforts have two technical inputs with different emphasis: one is focusing on infrastructure and one on urban populations. Emerging themes are planning based on designs that may have been appropriate in the past, but are probably not reasonable under new scenarios of climate change and extreme events, which points to the need for a new planning and design paradigm. The second emerging theme is that populations are unevenly affected by climate change. Often those disproportionately at risk are urban poor, minority, elderly; other issues include urban heat island distribution and risk of storm surge on coastal communities.

Biogeochemical cycles are new for this assessment. The changes in the carbon and nitrogen cycles are a huge driver of environmental change. Recent research has uncovered how ecosystems are responding to greenhouse gas-driven climate change. There is a joint USDA-DOE effort focusing on carbon cycle science and nitrogen trace gas production from agricultural systems. There is also an external input expected from an organized network of scientists studying reactive nitrogen in the biosphere.

The sectoral effort on ecosystems, biodiversity, and ecosystem services had a great workshop last week in Palo Alto, sponsored by the USGS and hosted by the Gordon & Betty Moore Foundation, with involvement of multiple groups including NGOs like The Nature Conservancy. The themes that emerged are focused on change and drivers producing surprises; for example, what's happening in winter that is pushing ecosystems across thresholds; extreme events and the thinking that ecosystems are vulnerable to change in regimes and not just single events; and ecosystem services and what their economic or other values might be, which is new to this assessment.

Kathy: Lynne, can you talk a bit about regional approach for the assessment and how you think sustained assessment effort is going and what components are?

Lynne Carter: There are 8 regions in this Assessment and they are fairly well defined. For the first NCA we had 19 regions and many of those regions held public workshops. We had a bit more time than in this effort, and also had people involved from the public in each region. The last Assessment (2009) didn't really have any regional activity (or at least no regional interaction). It was really just a short-term literature review. The 1st NCA was more experimental; this one is much more planned and thought through. We learned lessons from first two times and are putting them to good use. Many regions are putting together technical inputs that are assessments themselves. From those inputs, we'll have to synthesize, which is the task of those chapters of the assessment.

There are a few different approaches that regions are taking in preparing technical inputs. Hawaii and the Pacific Islands are framing their whole discussion in terms of a couple of vulnerabilities and working them through the issues (sea level rise, ocean acidification, and water). That group has made three geographic subdivisions that they deemed necessary because of spatial range and extent of the islands. The Pacific Northwest team's approach is to mine the state assessments already done in Washington and Oregon, using the information that has already been generated from people living there instead of reinventing the wheel, then they will add information about Idaho. Many of the other regions have or plan to hold some kind of public meeting or group meeting. In the Southeast we had a meeting with

about 90 folks we thought would like to contribute to the technical input. This is an army of volunteers, like Kathy said. By dividing up into a few pages on a particular issue for each expert, the effort for each person was not that daunting, but bringing it all together into a chapter that makes sense is a challenge.

We're building a sustained assessment process. We tried this the first time and are hoping for more success now. The rationale is that we want to have a long commitment to a consistent, on-going process of evaluation of climate risks and opportunities. The goal is to better inform decision making processes within regions and sectors. People shouldn't have to wait every four years for new information. We are trying to continually assess what new information is being generated by research from the US Global Change Research Program agencies and to establish a sustained assessment capacity both inside and outside the agencies. We hope to work with stakeholders and agencies across the country on a long-term basis; have continuous evaluation and activities on the current state of knowledge, of trends, adaptation and mitigation; improving the use of modeling and tools; and improving the ways in which we help people to use the information generated. There are all kinds of lists of components of a sustained assessment, including scientific integration, informing responses, enhancing information access (how can we help people find information), establishing indicators, evaluating progress, ensuring adequate capacity, developing a work plan to figure out how to sustain process, etc. With enough people involved and interested we think we can do something that will be useful, important and informative on a long-term basis.

Kathy: Rezaul, you are working on land use, land cover sector and are new to this process. Can you give insights from these two perspectives?

Rezaul Mahmood: From a newcomer's perspective, I was amazed at how many people are involved and how much work goes into the NCA. I didn't have any particular mindset when I walked in, but was very pleased with the openness, inclusiveness of the advisory committee. It was a positive surprise that I thought I'd go in and see a lot of typical climate colleagues, but saw folks with wide range of background, political science to policy, engineering, etc. Also, there was participation from private sector and non-profit organizations. All of these things were more than my expectations and I was pleased to see how it was going forward. After becoming part of the NCADAC, I have started to receive a significant number of emails which shows an incredible amount of information flow. As Kathy said, we're part of a volunteer army that we do in our free time on top of regular duties.

For land use and land cover change, we had a good workshop in late November-early December with about 50 participants from academia, government, forestry, land management, USDA. My main job was to put together a small team of experts who can discuss the land use, land cover, and climate connection. Currently we're working on a technical report and have agreed on outline for report. It's going to cover both biophysical and biogeochemical impacts of land use and land cover change. A big part is also going to be the sustaining the efforts and what we can do in the long-term to continue work on these issues.

<u>Audience Q&A</u>

Q: On-going process vs. report: in report outline and list of working groups, the process bullet was at the bottom and the timeline showing completion of report did not set it in context of the on-going process being important. It would be good to elevate this point to ensure that the sustained process is highly visible.

A, Kathy: Yes, we cut down in the timeline display in the interest of time, but do have graphics that highlight the sustained process.

Q: On the communication part, is there a website where we can find on-going developments?

A, Kathy: All the efforts are available on assessment.globalchange.gov. Everything, including materials, framework and workshop reports are all up there. There are also hand-outs on the back table. All materials are on the website and are public.

Q: I am impressed with the depth and complexity and challenge of this report. For the modeling, I am concerned that the modeling component gets glossed over, yet when going into projection forward the only information is relying on these models and down-scaling, that's all we have. Everything based on the projection is based on the models and if they're good or not and it doesn't come across in the presentation how that will come out and be improved in the future.

A, Kathy: There are some physical climate scientists concerned about the need to emphasize modeling, but this effort is not all about climate change science. The law actually requires that we integrate all the findings of the USGCRP, so we must talk about what's going on with modeling in the context of many other factors. There's a climate science section at beginning of the report, there will be a climate science primer at the end, and FAQs online. In addition to the informing decisions/decision support chapter, we expect lots of discussion on downscaling, robust decision-making and uncertainty. What Ken Kunkel's been doing is milking the scientific community for what is the best information available for building climatologies and projections for each region. This is a new contribution to the synthesis of modeling outputs and takes into account global and local climate models. It is likely that CMIP5 modeling results will be the topic of some future assessment studies, since they were not ready in time for this assessment. No one will see everything they want to see in this report, which is good because we have opportunity and expectation to do more in the future. If there's a need for more information that's not being handled by IPCC or other arenas, keep asking us to get this done and it will happen over time.

A, Nancy: These questions have been a point of discussion in development of the USGCRP Strategic Plan. In the context of an expanding mandate and limited resources, the challenge is we need to move forward on all fronts simultaneously because there is a tremendous need for information to inform decisions, but also for impacts.

Q: I have no doubt that Kunkel is using the best information he can for now that is available within the timeframe. My concern is that in your hierarchy of organization, have you considered an ombudsman that has independent answers when a scientist would like to point out a scientific error of significance. My experience has been that some agencies have put up on their website absolutely wrong science and you won't get a response from that author. I'm talking about mistakes, like Himalayas will melt in 30 years. An example is that for 6.5 years, NSF had on the front page of their website that because the Arctic Ocean is losing ice, sea level is going to rise, which is not right. There is no mechanism within that agency to change this. Will you have an ombudsmen who can help us when we want to talk to scientists about errors?

A, Kathy: One of our 3 co-chairs is essentially performing that role - TC Richmond, an attorney from Washington State who has an enormous amount of experience on handling environmental disputes and managing stakeholders and decisions support. She is playing this role internally and is also available to help if there are external issues. Additionally, we're not responsible for what individual agencies put on

their websites. If there's an agency-specific issue, it can be brought up to the agency or to USGCRP, but we only take responsibility for our own website. There will, I'm sure, be errors in the NCA, but we're being as careful as we possibly can. We'd appreciate it if people see things that are potentially problematic, that they will let us know. If you contact someone from our staff, we'll work on it. There will be an intense review process for the 2013 report, with 3 rounds of national academy review, major public review and multiple agency reviews, so will have plenty of opportunity to catch those things.

Q: I'm involved with the NCA this round. Could you give examples of specific methods or approaches in the past as to how important assessment results like this find their way to congressional staffers, politicians, the media, etc.? What helps get it to those other avenues?

A, Kathy: In our communications and engagement strategy, we have a whole work group on that including people who are experts on communication. Having a web-based effort very much helps. Congress will be briefed and staff will have access to the draft and final reports. More important is that our networks engage in deploying information we generate and encouraging people to engage with us in on-going sustained process. Being part of the process generates more useful information than just being handed it. It is much more influential if you are part of this process.

Participants:
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