

## **Panel1: Private Sector/Partnerships/Interagency Dan Walker**

Goal is to be as specific as possible in addition to providing general holistic overview

These programs work to improve ability of society to plan for and respond to climate variability and change. There are many things that NOAA would like to do to be more impactful and useful. NOAA knows it cannot be the center of the universe and be everything to everyone. Partnerships will be key for leveraging resources and getting new resources. NOAA needs to identify its priorities and will depend on partners to help us do this. At the same time, Congress will be setting priorities. Additionally, the Federal government is working to identify the Federal (vs. state and local) role and NOAA's role within the Federal government. NOAA was not set up around Climate issues and the programs have been created in a patchwork fashion. NOAA is working to organize and integrate these different pieces.

Examples of six relevant NOAA programs, each with a different goal:

- 1) SARP: fund five or six 1-2 year competitive grants. Very flexible, relatively small, serves as an entry point for many different sectors (thus far focused on two sectors: water and coastal).
- 2) NWS Climate Services Division: support infrastructure and vision for a suite of activities. Develop broad range of climate tools to support state climatologists, local governments, and sectoral users. Receive feedback through workshops that other parts of NOAA can also use.
- 3) NESDIS Regional Climate Centers: focus on applied climatology with broad suite of activities. Partner with other Federal agencies, one at a time, to meet a particular need.
- 4) RISA: Award five-year competitive grants with focus on developing relationships and product lines on high priority community climate challenges. Have morphed towards being operational based on need though it is challenging to do that as they are re-competed every five years. Vary considerably based on regional issues and needs.
- 5) Climate Prediction Center/Climate Test Bed: climate forecast products and services. Partner with RISA and serve other agencies.
- 6) TRACS: transition experimentally mature decision support tools to operations. Involve larger number of academic institutions than several other programs. Anticipated use by other Federal agencies.

Many of these programs are very small so NOAA's challenge is to leverage these efforts and expand their influence as much as possible. There is overlap between these programs, and while redundancy can be good, we need to start identifying the individual roles of each of these programs.

NOAA has a policy for developing partnerships largely focused on providing information due to its origin in the Weather Service. There is a commitment to seeking public input prior to identifying and developing climate products and services. NOAA needs to find the appropriate level of engagement and identify a process for overseeing this engagement. NOAA needs to change the way it does business. It would be helpful for the Working Group to evaluate NOAA's strengths and weaknesses, identify ways to strengthen partnerships among its programs and with external entities, and establish

methods for evaluating success of partnerships and creating successful partnerships and involvement (including with the commercial sector and academia).

#### Panel with Program Representatives

Specific questions for individual programs:

Lee: how does TRACS transfer things to the private sector?

Sarah: current focus is to transfer products within NOAA and academia.

Jerry Schubel: what is NOAA's core mission relative to climate products and applications? What would the nation lose if NOAA got out of the climate business?

Dan: challenge is that there are a variety of programs designed for a variety of reasons. Some sectors are more mature than others in their understanding of climate's relevance for them. Therefore, the effects would vary by sector with those that are already more dependent on climate information and services being more affected. We need a thoughtful, strategic approach because we don't fully know what would happen if NOAA stopped producing climate products and applications.

Tony Janetos: Has NOAA talked to other agencies about their failures related to their attempts to provide climate applications? Has NOAA tried to learn from other agencies' successes and failures?

Marjorie: NWS has been operating climate hotlines (dial a climatologist) for years and has used this long-term program to learn what people want to know about climate. We now have a new type of climatology focused on anthropogenic change and need to identify the new needs related to this new perspective. If NWS closed their climate program, there would be 200 million customers that would not have answers to their questions. 60 million customers a year would lose access to data centers and dial a climatologist customers would not receive answers to their specific questions. There would be a loss of consistent, validated basic climate information.

Jean Brennan: Does RISA produce curriculum and products that can be used beyond the specific targeted audience?

Caitlin: RISA is working to create prototypes with a certain set of prototypes and then work with other stakeholders to try to transfer these products to additional groups. The needs of different users are very different and RISA is working to create products that can meet a range of needs. RISA is meant to be experimental by design.

#### **Externals:**

##### **1. Sharlene Leuring (Ceres-coalition of investors and environmental groups):**

Climate Information and the Private Sector

Run investor's network on Climate Risk. Work with wide variety of sectors to help them understand what climate change means for private sector decision makers under a variety of emissions scenarios. Hosted workshop on coastal resiliency that led to development of coastal resiliency principles. Water scarcity (due to climate change and inefficient use) is another important issue they are exploring, which is a hidden risk that is not being managed.

Private Sector needs to include information on their total climate risks and how they factor in across their entire portfolios. Private sector does not make decisions based on what will happen in 2100, but on the lifetime of their investment (2030), so they need more timely information. They don't know how to deal with uncertainty or how to use

downscaled modeling, especially in light of the uncertainty of various emissions scenarios. NOAA could really help in this aspect. The private sector is struggling to integrate different sources of information. The private sector sees this as an opportunity and sees opportunities to partner with NOAA. There is a need to build capacity in the area of combining GCMs and sector specific models. The private sector is working to build proprietary platforms, but NOAA also needs to build public platforms.

## **2. Nancy Colleton (Institute for Global Environmental Strategies):**

Playing field is changing in regards to what the needs of the private sector are. The Climate information products and applications program needs to have a systematic way of identifying and responding to these ever-changing needs. This information is very important to a very broad audience and NOAA's biggest challenge will be engaging in consistent outreach to the numerous users. We also need to identify and communicate the entry point for the private sector. It is challenging for the external community to know where to engage. NOAA needs to develop a strategy to improve communication and visibility of its climate programs. Climate change presents a unique opportunity for NOAA, and we need to look at different ways of doing business. Partnerships and needs have changed in the past five years, so we need to look at additional models for cooperation to be more effective and efficient. NOAA needs to work more closely with the private sector in product production. There needs to be specific outreach for the private sector. There needs to be increased effort to get the results of the National Assessment out to the sectors that desperately need this information.

## **3. Stephen Jordan (US Chamber of Commerce):**

There is no such thing as the private sector and no such thing as big business as a single entity. Businesses are not as coordinated as those terms make it seem; different businesses operate very differently. Collectively, NOAA has the most resources to bring to bear on climate. Cumulatively, the private sector will bring more resources to the table, but it will not be as coordinated. The average big company is getting 500-600 requests for external funding requests. Average company does not have a large amount of resources (people and funding) dedicated to external affairs. Environmental issues are more integrated into operations than into external affairs, so there is a much smaller amount of money for grants. There are more resources available for partnerships. The chamber represents a spectrum of positions on issues, so they do not have consensus. Stephen has become involved in this through a hazards perspective. Challenge has been identifying who in NOAA people should connect with when managing hazards. Many key constituencies. Many companies are interested in a good housekeeping seal of approval, mapping (understanding the entire context; how are decisions in one place affecting other places), characterizing environmental footprints, decision-making assistance (creating alternative scenarios), and how to address NIMBY and social consequences.

## **Discussion:**

John: Weather service collects observations and produces basic graphics; majority of businesses get weather information from private sector, which transforms the product into something more useful. Mature climate service will follow this model and produce large

amounts of information that will be specialized by the private sector. We need to get away from thinking about individual studies; we need to look at the entire system and then specialize.

Lee: weather service products are pretty general for a wide range of users. He agrees that private sector should target information for specific sectors.

Marjorie: what about informing policy? Insurance sector makes decisions that social groups need to follow up on. How does the weather service model help inform policy-making and drive social change?

John Dutton: NOAA climate services program should not make policy. They should just put information out there and let academia, private sector etc. interpret it.

Bryan Hannegan: NOAA could play an important role in convening stakeholders and helping them identify their needs and inform decision-making.

Sharlene: it is up to users to develop decision support tools, but NOAA can help with the research and development. NOAA should work to understand the needs and collect their data in a way that best serves end user.

Jake: policy is important. We shouldn't lose sight of the fact that the government has a responsibility to regulate businesses and individuals and will be informed by climate forecasts as well. In regulating natural resource uses, the market tools of ecolabeling have been extremely influential. Can we use something equivalent to label practices and enterprises and climate sustainable? Would this have a beneficial effect?

Stephen: Do you want to create a floor or an incentive?

Jake: Incentive.

Stephen: building up natural defenses is important for ensuring that developers are working to mitigate risks. People would take the seal and run with it.

Tony Janetos: NOAA needs to develop a taxonomy for what kinds of users they are working with. Users range from seasonal to multi-decadal in their planning. These are two very different dynamics and NOAA needs to target its actions for the different types of decision-making. A one-size fits all approach will not satisfy anyone. There will be trillions of dollars invested which is a significant portion of the economy, so we should try a variety of things, determine what is successful and use that.

Margaret Hiza Redsteer: climate impacts are different than weather impacts. It is really important for NOAA to think about what other science organizations are out there. USGS has perspectives from different disciplines that NOAA does not have; climate impacts will be better understood from an interdisciplinary approach. Partnerships need to extend beyond management and regulatory agencies to other scientific agencies. Gave example of city of Winslow where city was sued for houses being flooded. Army Corps and Bureau of Reclamation were proponents of raising the levees. USGS showed that this would not help based on the landscape and the fact that the river would just shift. USGS and NOAA should collaborate more because they bring different perspectives to the table.

Bryan Hannegan: How far are we away from creating an earth system model that can provide forecasts similar to what weather models provide? What would roadmap look like for getting to that point? Putting together a plan would help to get support for the individual components. Learning by doing may be the only way to get to where we want to be.

John Dutton: problem is it takes expert interpretation to put together information for users from models and experts are focused on other efforts.

Mike Crimmins: is NOAA part of the assessment process or setting up a loading dock? How do you operationalize efforts?

Jake Rice: Investment industry is good at dealing with uncertainty, but we are pooling uncertainty from lack of knowledge of process, uncertainty of models, and data uncertainty. Real experts can pull these apart. Users need to react to these different forms of uncertainty differently. We should tease these apart as part of the assessment process to make products more useful.

Steve Running: This makes him think of NOAA carbon monitoring effort, which NOAA is also not ready for. Does NOAA plan to be a big source of information in carbon monitoring?

Fiona: this is outside the bounds of this program.

Margaret: USGS has been given a mandate to account for carbon changes and are not equipped to deal with this.

Chet: there is a broad interagency discussion regarding this.

Marjorie: over 20 agencies were involved in national assessment. RISAs are working a lot with other agencies. Industries do use climate information from entire continuum (present to ten years from now). NOAA has a continuum of services to meet these varied needs and we work with other agencies on these services.

Fiona: Climate Prediction Center produces over 10,000 products/month.

Stephen: if NOAA is working to keep a private sector advisory council, it is important to have broad representation from various sectors.

Bill Hooke: There are ~100 people in this room but this dialogue is occurring by many more people in many different places. We are just scratching the surface. We don't have all the time in the world. The weather service is a couple centuries old. The world did not change much back then. Today, the world changes much more quickly. Social change has been accelerated. We don't have much time to respond. We should all be losing sleep over this. How do we scale up what we are doing and deal with issues in a timely manner? How do we do the job we have to do in the time we have to do it? We have to be more disciplined tomorrow because we don't have freedom in our schedule to run over tomorrow. Panelists can't be exhaustive and moderators need to keep things moving.