DOI Climate Science Centers

Indigenous Peoples' Climate Change Working Group

Adaptation to Climate Change and Variability: Bringing Together Science and Indigenous Ways of Knowing to Create Positive Solutions

DECLINING SEA ICE

Over seventy participants of *Rising Voices* convened for a second time at the National Center for Atmospheric Research (NCAR) in Boulder, Colorado on June 30-July 2, 2014 to discuss what the science, information, support and research needs are of tribal communities to facilitate respectful and appropriate adaptation solutions to climate change and variability. *Rising Voices* is a community of engaged Indigenous leaders, Indigenous and non-Indigenous environmental experts, students, and scientific professionals across the United States, including representatives from tribal, local, state, and federal resource management agencies, academia, tribal colleges, and research organizations.

We came together from across the nation – including Hawai'i and Pacific Islands, Alaska, Northwest, Southwest, the Plains, Midwest, Gulf states, and Northeast – for a rich and honest discussion regarding the complex climate change challenges facing Indigenous peoples, current adaptation and mitigation strategies, protection of Indigenous knowledge, sustainable Indigenous practices, and political and institutional barriers. Many of the Indigenous communities represented at *Rising Voices* are already contending with a changing climate, including displacement of Native Alaskan villages and Native Gulf Coast communities due to rising sea levels, loss of sea ice, and/or extreme hurricane activity.

Related to declining sea ice, in addition to identifying immediate risks to the coastal Arctic and Subarctic communities, such as displacement, risks such as sea ice loss, permafrost degradation, coastal erosion, more frequent and intense storm surges, surface albedo change, increased risk of invasive species takeover, ecosystem changes, and the potential for the opening of the Northwest Passage were also identified. However, the risk of displacement and potential outcomes associated with relocation were discussed at length, as two of the discussion participants were from Kivalina, a rural Alaska village currently working with the state of Alaska to find a suitable place to move their community. Additionally, based on these participants direct experiences and observations of change in their village, a variety of risks associated with water temperature as experienced in Kivalina, Alaska were identified, as were increased intensity and frequency of storms and changes in whale hunting due to not just declining sea ice, but also to changing social norms, with the potential to further impact traditional customs of sharing.

After creating several risk maps the discussion turned to the power of connecting "western science" with indigenuity and exploring where climate science and Indigenous knowledges intersect. The resounding response from the group was that Indigenous knowledge is science and we should not separate western science and Indigenous knowledge when talking about climate science. Instead, the collective knowledge base should be included. Building upon this, the group was asked who has the right to represent Indigenous knowledge. One of the participants was very emphatic that she would like to hear this knowledge from an Indigenous person, the holder of the Indigenous Knowledge, rather than having it interpreted by a non-Indigenous person. Indigenous peoples have a history of outsiders

translating their knowledge and beliefs to others and a translator is no longer needed. The Indigenous participants felt that attempting to define Indigenous knowledge was problematic in and of itself. The standard government definition of the term in current use is limiting, leaving out the fact that Indigenous knowledge is something that people are raised with and practice until they die and includes customary law and relationships with everything on Earth. Attempting to define this concept and include all Indigenous knowledges into one definition inevitably leaves out important components.

Participants noted that both science and Indigenous knowledges are based on observations and that some observations captured by current technology science were captured by human senses in the past. Furthermore, it is important for scientists to realize that their tools are not capturing everything; it is important to understand the human connection and human observations in addition to observations captured by scientific instruments and computer models. With increased dependence on computer technology, there can be a loss of individual human knowledge. There may be a tendency for scientists to discard real observations if they do not fit current computer models or theories. The onus is on the scientists to build bridges. In order to integrate western science and Indigenous knowledges, western scientists must acknowledge that Indigenous knowledges are not anecdotal and are valid. Additionally, western scientists must include Indigenous peoples in their research, not just document their knowledge. For example, oil companies came into Kivalina, Alaska to talk with the community. The community said that the oil company needed to incorporate the people's knowledge and include community members in their planning process. There was an offer by the oil company to fund a study, but the oil company followed up with inappropriate actions. For example, the oil company wanted to know the details to the work plan to conduct the Traditional Knowledge studies, but this is culturally sensitive knowledge and something only the community can do. There is too much proprietary information that goes into the description of such a study. Colleen Swan of Kivalina, Alaska articulated the bridge between Indigenous knowledge and western science in her life, "My house is my connection to the rest of the world we live in, but the environment is my connection to God. We take all of the best practices and modernity and create the future. We don't have to move back in time."

Including and acknowledging Indigenous peoples was a continuous theme throughout the conversation. Instead of having a moderator between Indigenous peoples and western scientists, or government agencies, participants stated that Indigenous peoples need to be allowed to speak for themselves and work directly with western scientists and government agencies on issues that affect them, such as declining sea ice. We insist that federal agencies have direct relationships with communities and that federal funding should go directly to communities in order to build community capacity.

Additionally, there should be Indigenous representation on Presidential Task Forces related to these issues. An umbrella organization following the Pacific Risk Management 'Ohana (PRiMO) model should be created and called: Family of Alaskan Risk Management (FARM). This organization would be charged with bringing agencies and Indigenous groups together, ensuring that efforts were not duplicated, and helping build capacity within Alaska Indigenous communities so that they are better prepared to deal with natural disasters that may be caused by sea ice loss and other climate change impacts in the future. Action by Indigenous peoples, government agencies, and scientists working in concert with respect for one another is needed in order to create resiliency in an uncertain future with a changing climate.

To learn more or become part of the Rising Voices movement, please contact Heather Lazrus (hlazrus@ucar.edu), Julie Maldonado (jkmaldo@gmail.com), Bob Gough (gough.bob@gmail.com), or Jeffrey Morisette (morisettej@usgs.gov).
Rising Voices website: http://www.mmm.ucar.edu/projects/RisingVoices