

CAROLINAS INTEGRATED SCIENCES & ASSESSMENTS

<http://www.zebra-baker.com/CISA/>

Demand Side Assessment

Who are the major stakeholders for your RISA?

Our stakeholders include a wide variety of public and private water users, governmental agencies, and other organizations interested in water resources. Federal and state agencies include the US Geological Survey, US Fish and Wildlife Service, Environmental Protection Agency, South Carolina Department of Health and Environmental Control, the SC Department of Natural Resources, the SC Forestry Commission, and the North Carolina Department of Environment and Natural Resources. In the private sector, we consult with heavy water users such as the pulp and paper industry and utilities (e.g. Duke Power, SC Electric and Gas). Involvement in the Federal Energy Regulatory Commission (FERC) dam relicensing process has contributed to the expansion of our local stakeholder base. We have built upon previous work with community water system managers by making contacts with city and county governments, recreational users groups, and homeowners' associations.

What processes are used to include stakeholders in the research planning process, the research implementation process, and the research reporting process?

We have conducted interviews and meetings to ascertain current and potential uses of climate information among water users and resource managers. Networking at public hearings and professional meetings has allowed us to increase our contact base, share preliminary results with stakeholders, and receive feedback from other participants. Such interactions already have led to collaborative partnerships with stakeholders. As we complete our second year, we are working to refine products by soliciting user feedback (at meetings and through written comments) and by continuing conversations with stakeholders who might benefit from similar collaborations.

How are stakeholder interactions evaluated?

We keep records of interactions and meetings with current and potential stakeholders. Our RISA team conducts regular meetings to evaluate progress and to share insights. We work collaboratively within our research group to fine-tune approaches and to identify potential projects.

In addressing potential stakeholders we consider current use of climate information and data, level of interest in developing collaborative products, and specific opportunities to collaborate. Frequent interaction and ties to other key groups with similar interests have been helpful in initiating relationships.

What has your RISA learned from the process of stakeholder interaction, and how have its decision processes changed as a result?

A wide range of climate expertise and use of climate data exists. Some water users (paper and pulp industry, major utilities) already use climate information directly and seek the development and use of more sophisticated, technical models. Other groups use information with climate data imbedded in it, but possess varying levels of interest in dealing with climate more directly.

In order to understand the diverse uses and understandings of climate information, our RISA has worked to unravel the social context in which water and climate-related decisions are made in North and South Carolina. Organizational barriers often hinder use of climate information. Political, regulatory, and

financial constraints appear to limit experimental approaches. The wide variety of climate information uses requires creativity and innovation on our part to tailor RISA products to specific stakeholder needs. An understanding of established networks and interactions between user groups – some stakeholders already create their own climate data or provide climate information to others – is also required.

How did you develop your process for eliciting stakeholder needs/wants?

We used a multi-level approach in the beginning stages of our project development process. We evaluated past work with community water systems to gauge needs at the local level, while at the same time elicited information from water users and agencies on the state and regional level to give us a broader perspective on water problems and concerns in the Carolinas. This approach allowed us to introduce ourselves to potential collaborators and expand our list of contacts, to see how our RISA might fit into existing networks of users and networks of information among those users, and to begin the process of establishing more long-term relationships with interested stakeholders.

Supply Side Assessment

Briefly describe the research agenda for your RISA.

CISA's primary goal is to improve the range, quality, relevance, and accessibility of climate information for management of water resources in North and South Carolina. Current projects seek to understand the most pressing climate information needs of the water resource community, to improve knowledge of the physical system as it influences water resources in the Carolinas, and to find the most effective means of communicating climate science to decision makers.

How does your RISA set its own research priorities?

We have developed our research priorities based on the competencies of our team members, general or specific needs as identified by user groups, and what we have discovered to be vulnerabilities or long-term strategic needs of the region's water resources.

How has this agenda evolved over the duration of the RISA? What new projects have been started that were not anticipated at the beginning of the RISA? What projects have been terminated, and why?

As we finish our second year as a RISA, we continue to refine our agenda. We have evolved from general areas of interest to specific products and stakeholder partnerships. Our degree of involvement in the FERC dam relicensing process was originally unforeseen, but for our stakeholders this process is the most significant activity in which they are currently involved and has far-reaching implications for water resource management. Engagement in this process has resulted in one of our current projects – the development of a low inflow protocol for hydropower dam operations.

We have not terminated any projects. The basic work of past and current projects is generally carried over into other, related areas or projects. As we continue to engage with stakeholders in an iterative learning process, we expect our agenda will continue to evolve.

In your RISA, what is the balance between research on new subjects, and assessment/ compilation of existing knowledge? How is this balance determined?

We have learned that basic climatology would make a substantial contribution to decision-makers' efforts.

As we are in an academic institution, we try to extend beyond the immediate, stated needs of stakeholders and develop more sophisticated and long-term analyses. We embrace the topics they identify but anticipate related issues. Specifically we see a need for probabilistic assessments of regional effects of climate variability and change on water quantity and quality and on social institutions and decision-makers.

Please describe the specific ways that knowledge is disseminated from your RISA. How would you assess the relative importance of various dissemination mechanisms, such as peer-reviewed publications, other types of publications, web-based presentations, public forums, etc.?

We employ a variety of means of disseminating the knowledge and project information produced by our RISA. We have developed web-based products that include a GIS component. We conduct direct meetings and discussions with involved stakeholders. We present information publicly at academic and practitioner professional meetings. And, we are working on several papers to be submitted for peer-reviewed publication. All venues are viewed as important for strengthening long-term relationships with stakeholders as well as making our research known to the academic community.

Reconciliation/Managing Ecology of S&D

In what ways have considerations of supply for research shaped the evolution of your research agenda?

Team members' competencies and interests, as well as budgetary and staff constraints, have shaped the evolution of our resource agenda.

What tensions have arisen between stakeholder needs, demands, and expectations, and the scientific capabilities and priorities of the RISA? How have those tensions been addressed or resolved?

Several tensions exist between stakeholder needs and scientific capabilities to supply the desired information. For example, some stakeholders often desire clear, but currently unattainable, information about future climate. Similarly, other stakeholders may use climate dependent information, but they may resist opportunities to use climate data directly. Other users of climate information want products offered by a variety of sources to be consolidated into one accessible product.

Our RISA is currently working to address and resolve some of these tensions through continued engagement with both our local and regional stakeholders and with the larger research community.

How does your RISA evaluate the appropriateness of stakeholder needs (e.g., from the standpoint of public/private sector roles and responsibilities)?

Water resources management necessarily entails dynamics between natural and social systems and overlapping interests across federal, state, and levels. Exploring and understanding how these cross-scale interactions affect the decision-making context is crucial in evaluating the appropriateness of stakeholder needs. Introducing the potential value of climate information in the context of other conversations – reservoir management or dam operations, for example – allows stakeholders to recognize potential uses of climate data more easily. Development of specific products, and expectations for their anticipated uses, must be well-defined.

How are stakeholders identified? Which stakeholder groups are most important in influencing your RISA research agenda? Why? Which stakeholder groups are least important? Why?

We interact most closely with state-level agencies because of their day-to-day interactions with a wide range of water resource users. Thus far we have collaborated with decision-makers who already employ some form of climate information in their operations. Participation in the FERC dam relicensing process has provided us access to many other parties and broadened our perspective about which organizations might be interested in and benefit from enhanced climate information.

How does your RISA evaluate its research planning process?

We have not implemented a formal evaluation of our planning processes but expect to begin development of such a tool as our work with stakeholders progresses.