NASA ROSES project: Decision-making in water resource management

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Purpose of the study

The purpose of this study is to assess perceptions about the processes, barriers and other components that may affect water resource management decisions. Findings will will help guide future scientists and water resource managers' decision-making with respect to adoption of climate science information.

RQ1: How do public water utilities and water resource management leaders make decisions as to incorporating high resolution climate forecasts into existing decision-making structures and tools?

RQ2: What are the factors that influence decision-making, as well as the barriers and enablers that influence adoption?

Methods

Develop two case study comparisons of two public water utilities – Tampa Bay Water and Peace River Manasota Regional Water Supply Authority

- Collect descriptive data via online survey of decision makers within each utility
- Virtually observe meetings and discussions where possible to get a sense of how interactions unfold
- Develop case study comparison modeling decision making around climate information adoption

Determine how water resource professionals, academic researchers, engineers and consultants perceive decision making around climate science

- Administer online survey to members of the Florida Water and Climate Alliance
- Present case studies and survey results to members at upcoming meetings and solicit feedback

Example questions

High resolution climate forecasts are models that provide one of the highest levels of detail when it comes to predicting future climate. They compute atmospheric variables with small grid sizes that can help aid with decisions in water resource management. Please answer the following:

To what extent do you think water resource managers in public water utilities currently use use high resolution climate forecasts?

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

What are the benefits/risks you perceive may exist with respect to adopting high-resolution climate forecasts, when making water resource management decisions?

- Benefits/enablers include:
- Risks/barriers include:

What elements of these forecasts might be most useful to water management decision making?

- Precipitation
- Evapotranspiration
- Onset of drought season
- Other_____

Example questions

Decision support tools range from simple to more complex approaches or systems that one can use to gain valuable information on what a specific action could lead to and compare them in order to make the most effective decision for the purpose that it is being utilized. These tools are often utilized in water resource management decision making. Please answer the following questions to the best of your ability.

To what extent do you think water resource managers currently utilize decision support system tools to support water resource implementation at the state and local level?

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

How effective do you feel the use of decision support tools are with respect to making water resource management decisions?

Deliverables

Comparison case study and decision-making models

Peer reviewed publication

Practitioner presentations and trainings, including FWCA, natural resources Extension faculty

Utility survey link: <u>https://ufl.qualtrics.com/jfe/form/SV_eJu6Pp8LBN9rbam</u> FWCA survey link: TBD