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Florida Water and Climate Alliance workshop

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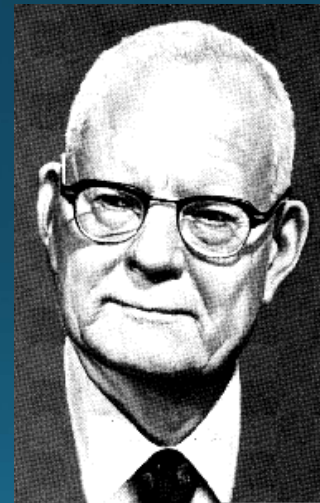
Making Change in a Changing Climate: Water supply, demand and resiliency



"It is not necessary to change. Survival is not mandatory."

W. Edwards Deming

- **Individuals**
- **Policymakers**
- **Society**



change...

- Starts with a problem
- Involves leaders
- Is usually unplanned and gradual
- Not linear

Orders of change

- First-order change — focus is on a subsystem (or unit) of the system
- Second-order change — building on the first-order change by involving other units
- Third-order change — changing the entire system



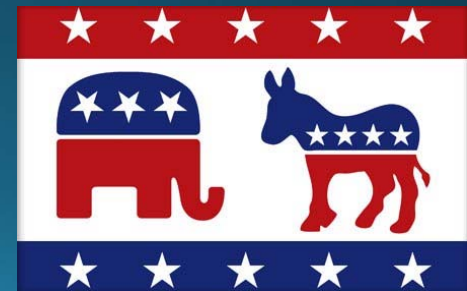
Adaptation and water supply planning

- Effective adaptation is based on understanding vulnerabilities to climate change and linking local knowledge to scientific evidence as to risk
- Ideally, adaptation to climate change should be viewed as *policy*, *not politics*, but research shows there is a political dimension
- Science communication can help explain this and frame an agenda for climate change communication

*Issue polarization and framing effects

- Ideological differences exist between Democrats and Republicans on climate change, including the belief that dealing with global warming should be a top priority for the Federal government/is an example of governmental intervention in local communities (Zhou, 2016)
- Political framing – refers to how messages that strategically emphasize certain facets of an issue and ignore others may influence public perception of that issue (Chong & Druckman, 2007)

*Presentation based on Zhou, 2016, which provided background on concepts.



- “I’ve been listening to this nonsense about water rising for 40 years. It hasn’t. Most of all the people who are experts are being supported by grants from the government. I remember in the 1980s, when the left pushed (that) we would run out of oil by early 2000s. We did not.”

-Home builder, Manatee and Sarasota.

Framing effects

- ***Message effects*** involve the content of the framing – what elements of an issue are emphasized, de-emphasized, or made most accessible for the message receiver's consumption (Chong & Druckman, 2007)
- ***Source effects*** focus on the deliverer of the frame - source credibility is based on perceptions as to how knowledgeable, trustworthy, and similar to the beliefs and attitudes of the intended audience the source is perceived to be (Lupia & McCubbins, 1998)

Motivated reasoning

- Those with pre-existing strong beliefs and attitudes about a topic may seek out information that coincides with and affirms their point of view, *while avoiding and/or rejecting information* that disconfirms their viewpoint
- ***Disconfirmation bias*** – motivated reasoners behave differently toward disconfirming information, with a tendency to reject and be disinclined to believe any information that goes against their worldview



Motivation to process

- Motivated reasoning highlights the importance of *motivation* in cognitive processing of attitudes and beliefs that influence behavior
- Those with a high degree of personal interest in politics, and who are more certain of their attitudes are more likely to engage in motivated reasoning
- They are less likely to respond to new information and frames, especially expected ones

Climate change and framing

- Attitudes toward climate change are highly politicized and split along party lines
- Framing (or reframing) climate change is seen by both activists and scholars as a key component in influencing public opinion and shaping policy toward climate change (e.g. Nisbet, 2009)
- Some efforts to frame climate change can lead to “boomerang effects” – instead of changing attitudes, actually backfires to reinforce POV

Climate change frames and boomerangs

- Economic
 - National security
 - Moral Justice
 - Natural disaster
- “Republican respondents increased in their opposition to proposed governmental action against climate change after being exposed to framing, with three conditions eliciting statistically significant backfires: Republican source × National Security ($p < 0.05$), Democrat source × National Security ($p < 0.05$), and Democrat source × Moral Justice ($p < 0.05$) (Zhou, 2016)”

Toward framing an agenda for climate change communication

- Changing the focus from solely message effects to source-recipient understanding
 - ***Cultural values based framing*** that affirms skeptical attitudes and seeks to understand underlying beliefs (not government intervention, but new opportunities for business and the economy)
 - Concentrate on messages that ***confirm the recipients' sense of self worth and preserves their partisan identity***
 - "Sea level rise is not a science issue. It is real estate, finance and built environment issue."
- Test message frames that may influence motivation differently -
 - Public health
 - Free market
 - Actual policy, not issue; actual vulnerabilities, not euphemism ("change," "variability," "extreme" versus "surge," "rise," "drought," "storm")
 - Scientific consensus, but not scientific terms

Terms that have different meanings for scientists and the public

Scientific term	Public meaning	Better choice
enhance	improve	Intensify, increase
aerosol	spray can	tiny atmospheric particle
positive trend	good trend	upward trend
positive feedback	good response, praise	vicious cycle, self-reinforcing cycle
theory	hunch, speculation	scientific understanding
uncertainty	ignorance	range
error	mistake, wrong, incorrect	difference from exact true number
bias	distortion, political motive	offset from an observation
sign	indication, astrological sign	plus or minus sign
values	ethics, monetary value	numbers, quantity
manipulation	illicit tampering	scientific data processing
scheme	devious plot	systematic plan
anomaly	abnormal occurrence	change from long-term average

Group Activity- Message Framing

1. As a group, discuss one of the following Climate Concerns
 - SEA LEVEL RISE
 - EXTREME EVENTS
 - TEMPERATURE INCREASES
 - EVAPOTRANSPIRATION

2. Frame a message (including at least demographic issues) to a decision making body (i.e. Board, commission, etc.)
 - ☐ Explain the issues and risks
 - ☐ Suggest specific adaptation options.
 - ☐ Share and discuss with all

Wrap up and discussion

- What did you takeaway?
- How can we take our understanding of vulnerabilities to climate change and link to local knowledge, beliefs and attitudes
- What can be done to address challenges of water supply, demand and access through a climate change communication agenda?