Do decision maker values about water in the greater Phoenix area reflect stakeholder values?

In 2012 the Decision Center for a Desert City at Arizona State University conducted a survey of decision makers who impact water resources in the metropolitan Phoenix area. The goal of the survey was to better understand what decision makers want from the future of water resources in the region.

- N=106
- Survey conducted online
- 68 Statements ranked on 5 point scale from very desirable to very undesirable
- Length=30 min

This survey measures convergence and divergence in water-related values between decision makers and the public.

In preparation for a broad public survey, this pilot survey gathers data on the water-related values of ASU undergraduate and graduate students and compares them to the results of the decision-maker survey.

Domains of the Water System

- Supply
  - Water sources and how water will be acquired, accessed, and managed
- Delivery
  - Delivery infrastructure management and delivery methods
- Demand
  - Consumption, conservation, and use
- Outflows
  - Sewage and effluent
- Cross-Cutting
  - Water governance and research

Variable Consolidation

A factor analysis was conducted on the original survey results to reduce the number of items and identify underlying variables. For each domain [Supply, Delivery, Demand, Outflows, & Cross-cutting] 2-3 factors emerged. The top two items in each factor were selected for use in the stakeholder survey. These were substantiated with additional survey items critical for inclusion in the scenario analysis (next phase of research). A principal components analysis and Varimax rotation were used. The total number of survey items was reduced from 68 to 21. (White et al. in prep)

Pretesting on ASU Students

- N=77
- Survey conducted online
- 21 Statements ranked on 5 point scale from very desirable to very undesirable
- Length=15 min

Convergence and Divergence in Values

- For students, an equitable future includes protected natural areas for other species. Students were significantly more likely than decision makers to say that “Natural areas along streams should be restored and protected for fish and wildlife” (Student M=1.38, Decision Maker M=1.76, F=8.69, p<.001)
- For students, a sustainable future is powered by renewable energy. Students were significantly more likely than decision makers to say that a desirable water future included “100% of the energy for delivering water for the greater Phoenix area should be generated from solar or wind power” (Student M=1.62, Decision Maker M=2.86, F=48.58, p<.001)
- For students, mandatory conservation targets for business is a desirable part of the future. Students were significantly more likely than decision makers to say that “Industry should be required to reduce their water use to meet specific conservation targets” (Student M=1.63, Decision Maker M=2.26, F=13.18, p<.001)
- For students, future drinking should not come from direct reuse as drinking water” (Student M=1.18, Decision Maker M=2.80, F=4.01, p=.05)
- For students, water resource decisions are participatory processes in the future greater Phoenix area. Students were significantly more likely than decision makers to say that “Local stakeholders and residents should be actively engaged in water resource decisions in the greater Phoenix area. (Student M=1.74, Decision Maker M=2.04, F=3.91, p=.05)

Conclusion

Water governance in the greater Phoenix area is a complex and contested topic. Decision Makers from Water Management, Urban Interests, Agricultural Interests, and Environmental Interests, are tasked with developing the water system in the best interests of their constituencies. The comparative results from this pilot survey of Arizona State University students shows potential conflict with multiple areas of divergence between Decision Makers and Students. Future research will expand to the broader public of the greater Phoenix area in order to measure the Decision Makers’ representation of the public’s interests.