



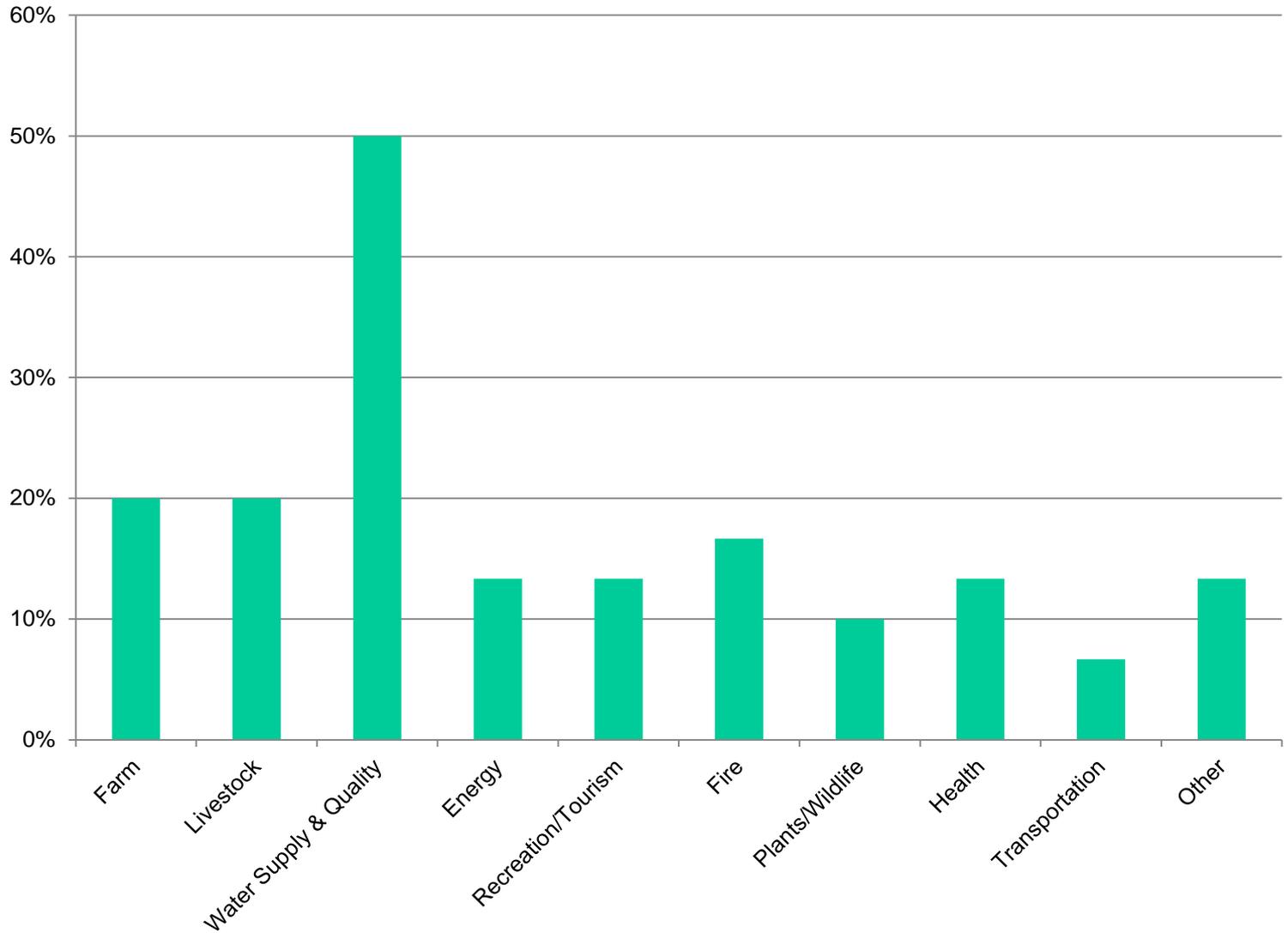
World Café Report

Laura Edwards

Shannon McNeeley

Nicole Wall

Sectors Represented at this Meeting



Breakout Report

- Research Gaps and Needs
- Communication and Information Delivery Needs
- What's Working?
- Who's Missing?

Agriculture

- **Research Gaps and Needs**
 - Soil moisture measuring & monitoring
 - Understanding and defining decision calendars for ag early warning systems
 - More support for existing monitoring programs – e.g., NWS coop network, USGS streamflow gauges, etc.
 - Implications of policy, e.g, Farm Bill, on ag sector practices and behaviors/risks/vulnerabilities
- **Communication and Information Delivery Needs**
 - Synthesis and Scaling data/information to level of decision or policy maker
 - Local impacts & U.S. Drought Monitor – two-way information sharing – e.g., UCRB, NC
 - Creating learning communities/local peer groups and networks for sharing of information

Agriculture

- **What's Working?**

- UCRB, NC 2-way communication between local <-> USDM (across sectors, not just ag)
- Quarterly basin summary (potential for more/better distribution)
- USGS streamflow data
- US Drought Monitor Map
- High Plains Regional Climate Center products

- **Who's Missing?**

- Ag producers
- Private sector businesses – e.g., Monsanto, John Deere
- Certified crop advisors, crop insurance agents and other ag-related organizations/associations, etc.
- Extension and Ag Experiment Station

Natural Resource Management

- **Research Gaps and Needs**

- Need for more baseline data/monitoring of snowpack, soil moisture, streamflow gauges and timely access to the data and accessible archive
- Improved understanding of historical droughts (back to paleoclimate timescale) to put modern day droughts into context**
- Improved models of vegetation responses to future drought and impacts to ecosystem services/livelihoods/wildlife
- Translate regional/national products to local impacts for preparedness and decision support (e.g., for fire management across scales of governance/agencies)
- How to develop risk management strategies with an unknown or uncertain future condition of an ecosystem/vegetation (e.g. T&E species)**
- Need to quantify & communicate drought in value terms, e.g., economic, livelihoods (jobs), non-market value ecosystem services**

Natural Resource Management

- **Communication and Information Delivery Needs**
 - Need to better communicate changes in climate/ecosystem/vegetation regimes and potential future scenarios to policymakers
 - Format/localize information for the target audience
 - Need to better connect with other MRB committees, tie into existing groups
 - Using significant historical droughts as context for communicating/relating to recent/future droughts
 - Communicate the message to build resiliency to climate extremes (drought/flood events)

Municipal/Communities and Rural Water Supply

- **Research Gaps and Needs**
 - Industry needs approved forecasting method for extended droughts, good accuracy
 - GCDP numbers and other data hard to get, often proprietary
 - Development of guidance documents for drought management and planning
- **Communication and Information Delivery Needs**
 - Delivery of guidance documents for drought management and planning
 - Sustained, proactive communication, not just during/after a drought
 - Better utilize traditional and social media outlets



Municipal/Communities and Rural Water Supply

- **What's Working?**
 - Missouri, connecting smaller systems to regional suppliers
 - Kansas, showed small water systems how to read monitoring wells
 - Iowa, working through rural & urban water associations for encourage muni drought planning
- **Who's Missing?**
 - Commodity orgs
 - Reps of municipal water suppliers (public water)
 - Executive branch/higher level authority from states
 - Media
 - Game and parks
 - Oil and gas
 - Local water systems/irrigation districts

Energy

- The following should be pointed out:
 - a. Whether to buy energy to meet demands during low water years or to sell surplus during high water years. This is usually a day-to-day, minute-to-minute decision. Extended drought may impact what is considered normal for these decisions.
 - b. How to meet demand when the surface water runs out. Do they need to make the investment to build cooling towers or well fields to help ensure a water supply?

Energy

- **Research Gaps and Needs**

- a.-Drought is not the only weather/climate related vulnerability. Supply is also impacted during flooding. Increased ice storms impacts distribution and transmission. Climate information could be used for a general assessment of infrastructure. System is designed for averages.

Energy

- **Research Gaps and Needs (cont...)**
 - Congressional instruction to promote renewable energy sources. Development of these sources, combined with load growth, makes it difficult to move energy.
 - i. Power generation is a minute-by-minute decision whereas infrastructure changes, such as revamping systems to use lower quality water, may take years.
 - ii. The system of dams in the Missouri River Basin builds in a buffer, so any reductions in precipitation are lagged.

Energy

- **Communication and Information Delivery Needs**

- Awareness and education! People need to understand that groundwater buffers that got us through previous extended droughts like the 1930s are gone.
- The hydroelectric companies don't manage water, they manage demand

Energy

- **What's working?**

- Hydro works on demand. So, as long as water is available, this form of energy works. However, they don't manage water!

- Day to day activities are currently covered. But, vulnerabilities are at hand.

- **Who's missing?**

- A good question to follow-up on in the future.

Human Health

- **Research Gaps and Needs**

- Heat index, Mental health data, emergency room statistics.
- The scientific journal approach is an impediment. It takes so slow to learn about potential health impacts. When the outbreaks occur we need to jump out right away. We need the data! We don't know where the data is!
- There needs to be more epidemiologists focusing on this issue that can identify population health issues right away.

Human Health

- **Communication and Information Delivery Needs:**

When a doctor meets you, they should be asking “How are drought conditions affecting you?” The people who become doctors need to know what the rural context is.

Human Health

- **Communication and Information Delivery Needs:**
 - There is a lack of awareness on urbanites about drought. Many people don't really understand what the impacts are of drought in general. They don't believe it affects them. Education is critical so people are aware of cascading effects of drought. How do you effectively communicate risk?
 - What is the role of schools and educators in this? Seems like kids should be able to relate water to health better?
 - -The community buy in is critical. Who knows more than the community?

Human Health

- **What's working?**

- Who Knows? We need to be finding this out, record it, and disseminate it to the broader public.

- There have been some case studies, “The Anatomy of a Heat Wave”-ask Jim Schwab about this and how Chicago has tackled the heat wave issue!

- UNMC has an excellent Ag Health and Safety Program that addresses heat and drought!

Human Health

- **Who do we need to be talking to?**
 - Social workers and primary care doctors, school nurses, educators, K-4 / K-12 programs, health and human services (at federal and state levels). There is a need to educate people on weather and health, people experience climate through health conditions.