

## WORKSHOP NOTES: Northwest Iowa Drought Preparedness

On February 27, 2020, about 30 people representing diverse water stakeholders gathered in Sheldon, Iowa, to discuss water availability and livestock production in Northwest Iowa. The workshop was facilitated by Iowa State University (ISU) Extension and staff from the National Drought Mitigation Center. The workshop began with a brief overview of a USDA-funded ISU research project focused on water for agriculture and a presentation of a drought scenario. These were followed by three group breakout sessions. In the first breakout session, stakeholders identified impacts and vulnerabilities stemming from the drought scenario. In the 2<sup>nd</sup> and 3<sup>rd</sup> breakout sessions, stakeholders discussed potential mitigation and response strategies. This document summarizes those discussions.

### BREAKOUT 1 | Impacts and Vulnerabilities

Potential impacts of drought scenario

- Rural water systems shallow wells run dry.
- As individual livestock producer wells run dry, rural water system demand increases.
- Human populations can conserve by reducing non-essential water use.
- Livestock facilities have less potential to conserve; water use for cooling and washing can be reduced slightly, but drinking demand might even increase if it is also hot. Potential mass mortality.
- Rural water system pumps and other equipment run longer, harder, greater potential for failure
- Rural population, livestock, processing plants, etc. without water. Cascading effects throughout social and economic systems.
- Rural water systems with deep wells draw more from them. All rural water systems consider drilling additional deep wells. Potential issues with permitting and availability of well diggers.
- In year 3 of drought, if it is widespread, drops in grain production may increase grain process to degree that ethanol plants shut down and livestock facilities are depopulated

Prioritization: What will the order of rationing and shut-off be, and who will determine priority?

### BREAKOUTS 2 and 3 | Strategies and Capabilities: Mitigation and Response

#### Communication: Actions that might be taken to improve communication between stakeholders

Raise stakeholder awareness of and capacity to use major information and decision tools. Examine ways that these might be tailored to Northwest Iowa needs.

- Drought Monitor: <https://droughtmonitor.unl.edu>
- Drought Outlook: <https://www.drought.gov/drought/data-maps-tools/outlooks-forecasts>
- Water supply news: <https://content.govdelivery.com/accounts/IACIO/bulletins/232eef9>

Create a communication system based on the IDNR-RWS Monthly Operational Report (MOR) infrastructure. The MOR groundwater resource monitoring process infrastructure could be developed to link in other critical stakeholders including livestock groups, food processors, IDALS, and HS/EM so that all can monitor groundwater conditions across NW Iowa. It could be an online resource that would allow stakeholders to develop their own localized and regional trigger points related to the impacts that are most relevant to them.

All stakeholders: Define set points or triggers for stakeholder responses, develop notification systems and networks.

## **Mitigation: Actions stakeholders can take before drought to mitigate potential impacts**

### **Livestock producers**

- Communicate with rural water systems to ensure water availability when planning facilities.
- Plan for possibility that rural water system water delivery could be interrupted for short or long periods.
  - Develop onsite storage, wells, for short-term mitigation.
  - Develop plans for longer-term situations: conservation plans, wells, emergency water plans (e.g., connections and logistics for trucking water), depopulation plans (e.g., arrangements with processors & logistics for emergency processing).

### **Livestock groups**

- Emergency depopulation plans: Work with livestock producers and livestock processors to discuss potential development of emergency depopulation plans (e.g., arrangements with processors & logistics for emergency processing).
- Livestock operation site selection: Work with livestock producers, groups such as the Coalition to Support Iowa's Farmers, rural water systems, and IDNR to incorporate resilient water supply planning into livestock operation planning.
- Mass mortality planning: Work with IDALS, IDNR and livestock producers to develop plans linked to current disease mass mortality plans.

### **Livestock and dairy processors**

- Discuss how drought might impact processing plants and the communities that are employed by them. At what point to processors need to know about unfolding situations and potential cascading impacts. Look to drought-prone states for example plans.
- Work with livestock groups to discuss potential development of depopulation plans (e.g., arrangements with processors & logistics for emergency processing).

### **Rural water systems**

- Evaluate and map distribution infrastructure, both individually and together. Each RWS could evaluate the strengths and weaknesses of their systems, then work together to evaluate overall landscape-level capacity. Potential benefits include: (1) identify capacity for mutual support in different situations and across the region, opportunities for grant-funded system improvements (e.g., emergency connectedness, complementary infrastructure improvement decisions, both distribution and wells, dig "reserve" deep wells) and (2) inform livestock facility siting decisions.
- Work with DNR on emergency well drilling permitting process.
- Identify funding sources for drought preparedness planning and infrastructure investments.
- IDNR, IGS, RWS examine feasibility of aquifer storage and recovery in years of plenty

### **Ethanol plants**

Evaluate ethanol plants' influence on aquifers and capacity to serve as emergency source of water. Could plants' deep wells be linked to water system infrastructure in emergency situations?

### **IDNR**

- Clarify state prioritization statutes and processes, communicate to all stakeholders.
- Work with rural water systems on emergency well drilling permitting process.
- Mass mortality planning: Work with IDALS, livestock groups and livestock producers to develop plans linked to current disease mortality plans.
- IDNR, IGS, RWS examine feasibility of aquifer storage and recovery in years of plenty.

### **IDALS**

- Support work to develop depopulation plans.
- Mass mortality planning: Work with IDALS, livestock groups and livestock producers to develop plans linked to current disease mass mortality plans.

### **Homeland Security/Emergency Management**

- Facilitate development of communications plans between stakeholders, with trigger points.
- Help to develop emergency water resources plans, coordinating with the Iowa Water/Wastewater Agency Response Network (IOWARN) and the Iowa Rural Water Association (IRWA).
- Evaluate RWS systems for firefighting, emergency water capacity.

### **General**

- Economic assessments needed to understand how drought will impact demand over time: (1) what is the corn price relative to oil price at which ethanol plants might idle production?; (2) at what corn price point relative to animal price might livestock producers depopulate facilities? -How would these dynamics impact water demand?
- Identify funding opportunities for proactive mitigation planning and actions for individual stakeholder groups and strategic cooperative actions. Maybe fund a strategic planning process to develop a list of long-term priority projects?
- Plans for communicating and coordinating with general public, municipalities.
- Map all critical water-related infrastructure. Rural water system distribution systems, other sources water could be drawn from (e.g., ethanol plant wells, gravel pits), potential to move water around to livestock.
- What stakeholders were not present at the workshop who should be involved?
- Does the region need a comprehensive water supply plan?

## **NEXT STEPS**

Workshop participants agreed that stakeholders should prioritize the ideas discussed and proposed during the workshop. We did not decide on a process to do that. The drought workshop planning committee will convene to discuss ideas for facilitating a prioritization process and communicate with the workshop participants about next steps.

## **SPECIAL THANKS**

To the workshop planning committee, who met numerous times to guide the planning process. They are:

- Gretta Irwin, Executive Director Iowa Turkey Federation / Iowa Turkey Marketing Council
- Drew Mogler, Public Policy Director Iowa Pork Producers Association
- Tim Hall, Hydrology Resources Coordinator Iowa DNR
- Greg Huff, CEO Iowa Rural Water Association
- Dennis Todey, Director USDA Climate Hub
- J Arbuckle, ISU Extension



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