



NORTH CENTRAL REGION  
WATER NETWORK

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## Drought Scenario Planning Interactive Guide: 2PM CT

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## Today's Presenters:

- **Deborah Bathke**, Education Coordinator, National Drought Mitigation Center, and Associate Research Professor in the School of Natural Resources at University of Nebraska-Lincoln
- **Tonya Bernadt**, Education and Outreach Specialist, National Drought Mitigation Center, University of Nebraska – Lincoln

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## Deborah Bathke



Dr. Deborah Bathke is a Research Associate Professor in the School of Natural Resources at the University of Nebraska-Lincoln. She serves as the Education and Outreach Coordinator with the National Drought Mitigation Center and a U.S. Drought Monitor author. Her research interests include the development and evaluation of climate information and decision-support tools; public participation, education, and engagement in drought planning; and scenario planning and applied gaming for drought risk management.

## Tonya Bernadt



Tonya joined the National Drought Mitigation Center in 2009. Throughout her time at the center, she has been involved with a variety of projects where she facilitates stakeholder engagement; develops educational activities and outreach components; writes grants to help secure NDMC funding; facilitates workshops and events; and collaborates with partners throughout the nation. She holds a Masters in Leadership Development from UNL and has a Certificate in Public Participation through the International Association for Public Participation.



# **COLLABORATIVE DROUGHT PLANNING USING SCENARIO BASED EXERCISES**

Dr. Deborah Bathke, Education Coordinator and Climatologist

Tonya Bernadt, Education and Outreach Specialist

National Drought Mitigation Center, University of Nebraska - Lincoln



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NCRWN AND NCRCRD  
FOR FINANCIAL  
SUPPORT**





# COLLABORATIVE DROUGHT PLANNING USING SCENARIO EXERCISES

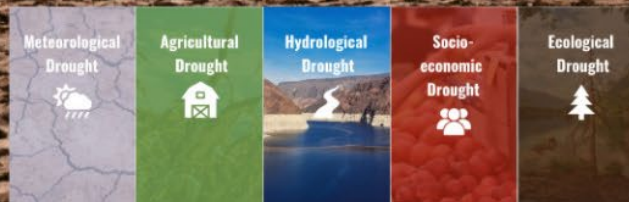
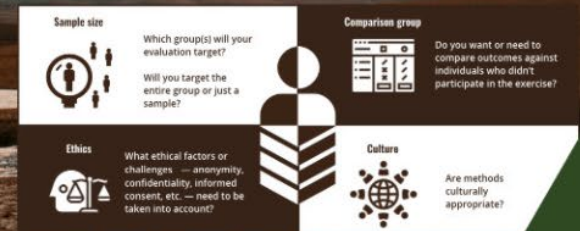
Overview

### Planning Worksheet #1

Select an Exercise Type

This worksheet is intended to help you foster discussions with organizers and partners, weigh selection factors, and discover which exercise types are most compatible with your objectives, planning stage, and capacity. Please note: No worksheet can fully capture all of the unique needs and characteristics of your community or organization. This worksheet can help guide you when selecting an exercise.

Step 1		Step 2			
Factors	Is this relevant and/or a priority? Yes/No	Workshop	Game	Tabletop	
Using the results from your needs assessment, identify the factors that are relevant to and a priority for your agency or organization.					
Collect or share information					
Make a component of your drought plan					
Create consensus around a planning challenge					
Encourage participants about the complexity of drought					
Generate dialogue and response strategies					
Evaluate strategies, policies, or procedures					
Test plan					
Obtain agency approval					
Involve stakeholders, collaborators, and/or coordination					
Facilitate decision-making or implementing policies and procedures					
Identify strengths and weaknesses of an existing plan					
Who do you want to participate in the exercise?					
Agency or organization staff with responsibilities related to managing drought or its effects					
Local organizations for participants to take positions on work sheets and planning matters					
Focus on interaction among participants with interconnections and planning matters					



# Defining Drought

Drought can mean different things to different people.  
Click on a perspective to learn more.



## Socio-economic Drought

On average, a drought disaster costs nearly \$10 billion in losses and damage. Socio-economic drought takes into consideration the lost production of agricultural products; hydroelectric energy generation; ethanol production; how supply and demand are impacted by drought; and numerous other items.

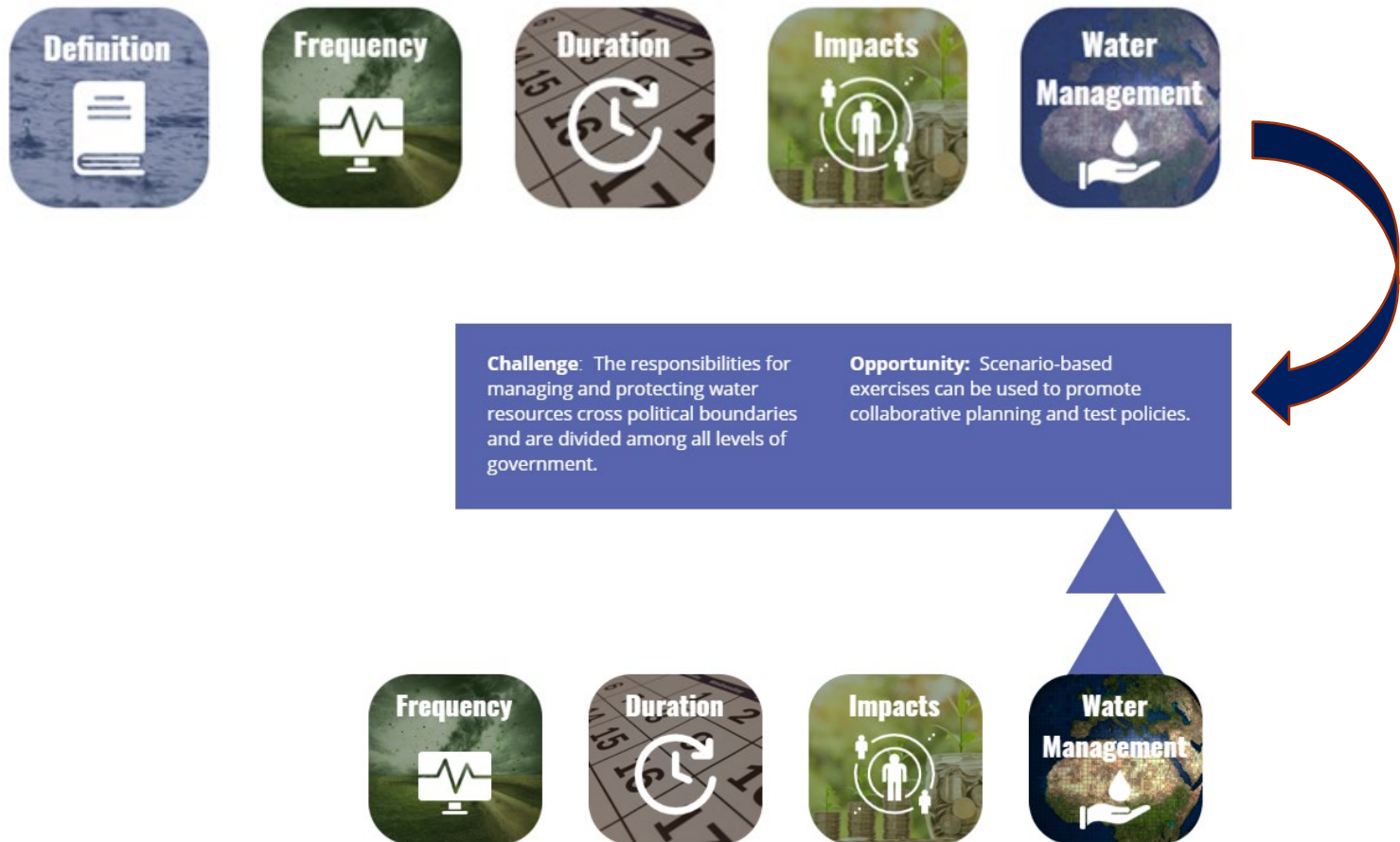
## Agricultural Drought

Crop and livestock producers are particularly susceptible to drought. When crops, hay, and other plant life suffer as the result of rain and snow shortage, lack of soil moisture or evaporative **demands**, agricultural drought can occur. This type of drought is also dependent upon plant type, stage of growth, and soil properties.



# Drought's Unique Characteristics

Click on a characteristic to learn about why it **challenges** planners and to see **opportunities** that scenario-based exercises offer to tackle these challenges.





# WHY PREPARE FOR DROUGHT?



# ELEMENTS OF EFFECTIVE SCENARIOS

**Meet specific needs of the  
participating communities**

**Capture attention with a narrative**

**Encourage thoughtful discussion with  
events that challenge participants**

**Provide details that show conditions  
or support decision-making**



# TYPES OF SCENARIO BASED ACTIVITIES

## Tabletop Exercises



Low-stress walk-through of plan implementation.

## Workshops



Informal discussions with presentations and breakout groups.

## Games



Friendly competition with teams and interactive learning.







**Workshop**



**Games**



**Tabletop Exercise**

<b>Needs</b>	<ul style="list-style-type: none"> <li>▪ Write a plan component</li> <li>▪ Education or training</li> <li>▪ Knowledge sharing</li> <li>▪ Build consensus</li> <li>▪ Improve collaboration and communication</li> <li>▪ Generate mitigation and response strategies</li> <li>▪ Identify resource needs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Engage a wide variety of individuals in the planning process</li> <li>▪ Education</li> <li>▪ Knowledge sharing</li> <li>▪ Build consensus</li> <li>▪ Improve collaboration and communication</li> <li>▪ Explore and evaluate mitigation and response strategies</li> <li>▪ Practice resource and/or budget allocation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Promote plan familiarity</li> <li>▪ Training</li> <li>▪ Information sharing</li> <li>▪ Practice group problem solving and decision-making</li> <li>▪ Evaluate mitigation and response strategies</li> <li>▪ Identify gaps in resource or staff allocation</li> </ul>
<b>Format</b>	Informal discussion with presentations and breakout groups	Friendly competition with teams and interactive learning	Low-stress walk through of plan implementation
<b>Participants</b>	Single- or multi-sector Stakeholder or agency	Multi-sector stakeholder	Anyone with a policy, planning or response role
<b>Time</b>	4 hours to multiple days	2–8 hours	1–4 hours
<b>Planning stage</b>	Developing or existing plan	Developing or existing plan	Existing plan



Foundation

Planning

Design

Implementation

Impact



# Foundation Worksheet #1

## Consider Your Needs



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Use this worksheet to analyze your drought preparedness and response activities and identify areas where you may wish to focus your community's or organization's exercise design efforts.

**1. Reflect on the effects of past droughts.** Drought impacts nearly all sectors of society. Taking time to reflect on the effects can help ensure that your preparedness and response actions address actual rather than perceived needs. Sources of information include:

- Impacts captured by the National Drought Mitigation Center's Drought Impacts Toolkit ([droughtimpacts.unl.edu](http://droughtimpacts.unl.edu))
- Local history obtained from your local water utility, newspaper records, library clipping files and other holdings, the historical society, and residents' recent experiences and past memories.

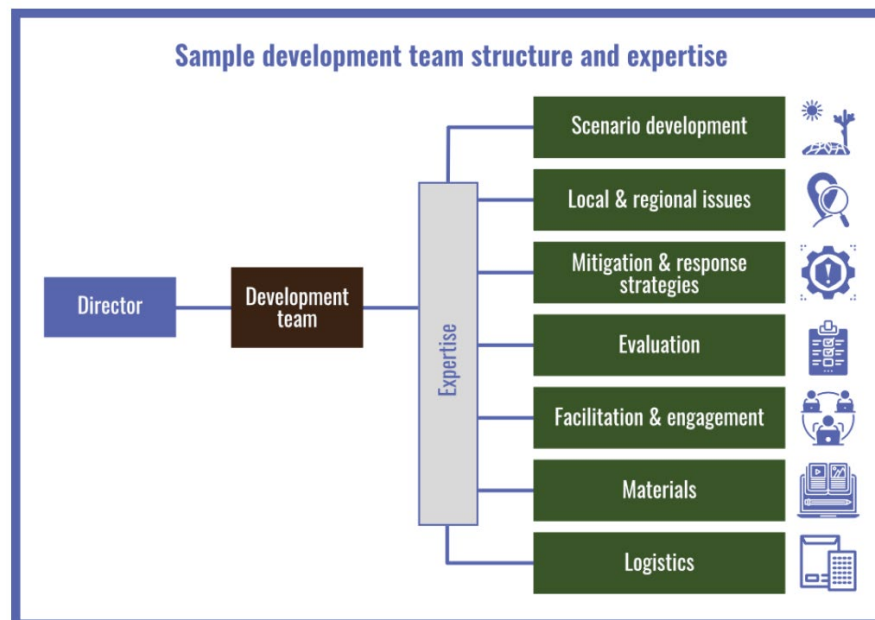
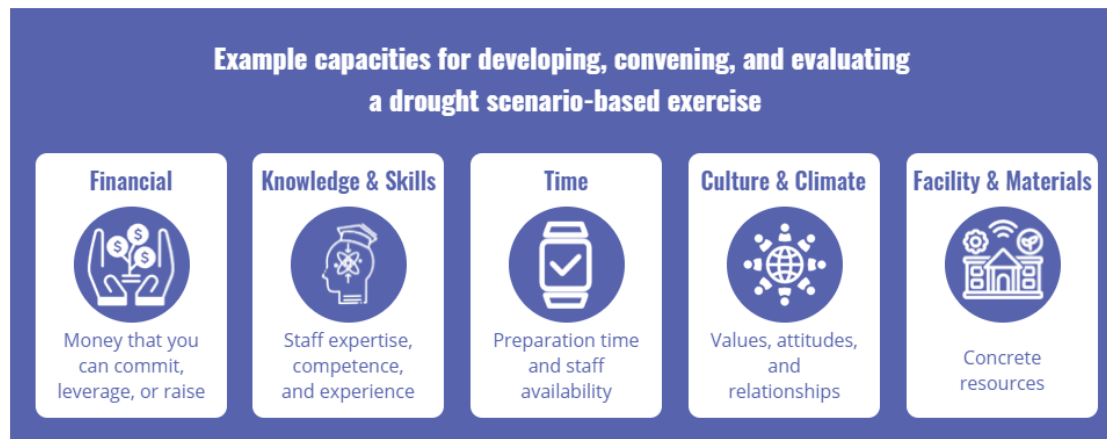
Using the tables below, identify whether the listed drought impact is relevant to your community and, if so, the specific stakeholders that are affected. Your responses will help you set your goals, define the scope, guide the scenario development, and drive discussions during the exercise.

Category	Drought Impact	<input checked="" type="checkbox"/> those that apply	Individuals, groups, or businesses affected
Crop production	Less water for irrigation		
	Reduced yield		
	Insect infestation		
	Crop disease		
	Plant stress		
	Added well, dam, pipe, etc.		
	Increased irrigation		
	Erosion		

Category	Drought Impact	<input checked="" type="checkbox"/> those that apply	Individuals, groups, or businesses affected
Public Health	Declines in air quality due to dust, pollen, or smoke		
	More vector-borne disease		
	Special meetings or activities held		
	Ceremonies or festivals cancelled		
	Less food for subsistence		
	Garden needs more water or yields less		
	People relocating		
	Stress (mental health issues)		

Category	Drought Impact	<input checked="" type="checkbox"/> those that apply	Individuals, groups, or businesses affected
Households	Reduced outdoor water use		
	Reduced outdoor water use		
	Increased lawn, landscape watering		
	Dry lawns		
	Cracked foundations		
	Increased power bills		
	Increased use of cistern, rainwater		
	Low or dry wells		





# Foundation Worksheet #4

## Define the Exercise Scope



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Use this worksheet to help define the parameters for the exercise and set limits for what can realistically be addressed in one exercise. As you discuss and complete this worksheet, you'll want to refer to Foundation Worksheets #1 and #2 (Consider Your Needs and Assess Your Capabilities).

- 1. Prioritize the drought impacts.** It's nearly impossible to address all of the potential drought impacts in a single exercise. Using your responses to *Exercise Analysis Worksheet #1: Consider Your Needs*, identify the highest priority impacts for your community or organization. These priority impacts will help focus your scenario and drive discussion during the exercise.

Using the table below, record your highest priority impacts. Consider such factors as:

- Frequency of occurrence
- Relative likelihood of occurrence
- Magnitude and intensity
- Location
- Spatial extent
- Speed of onset and availability of warning
- Potential severity of consequences to people, critical facilities, community functions, and property
- Potential cascading events

#1 Priority Impact
#2 Priority Impact
#3 Priority Impact
#4 Priority Impact
#5 Priority Impact

- 2. Determine the geographic location (communities, counties, river basin, etc.) that you wish to address in the exercise.**

--

- 3. Select and prioritize your planning challenges.** Using your answers to *Exercise Analysis Worksheet #1: Consider Your Needs*, identify the highest priority planning challenges for your community or organization. These challenges will help you select an appropriate exercise type and identify potential participants.

#1 Planning Challenge
#2 Planning Challenge
#3 Planning Challenge
#4 Planning Challenge
#5 Planning Challenge

## **GOALS versus OBJECTIVES**

**Goals are the final outcomes of the exercise**

**Objectives are the specific results that help you achieve the goals**

**Goals focus on WHAT you want to achieve**

**Objectives focus on HOW you are going to achieve the goal**

**Goals are broad, big-picture statements**

**Objectives are more specific**

**Goals may not be measureable**

**Objectives are measurable**

**Goals have a long time frame**

**Objectives have a short time frame**





Planning

Design

Implementation

Impact



Select an exercise  
type

Estimate costs

Gain support

Identify working  
groups

## Planning Worksheet #1



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### Select an Exercise Type

This worksheet is intended to help you foster discussions with organizers and partners, weigh selection factors, and discover which exercise types are most compatible with your objectives, planning stage, and capacity. Please note: No worksheet can fully capture all of the unique needs and characteristics of your community or organization. This worksheet can help guide you when selecting an exercise.

Step 1			Step 2		
Using the results from your needs assessment, identify the factors that are relevant to and a priority for your agency or organization.			Fill in all of the circles for each row where you answered yes in step 1.		
Factors	Is this relevant and/or a priority? Yes/No		Workshop	Game	Tabletop
What do you hope to accomplish with the exercise?	Collect or share information		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Write a component of your drought plan		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Create consensus around a planning challenge		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Educate participants about the complexities of drought		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Generate mitigation and response strategies		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Evaluate strategies, policies, or procedures		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Train staff		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Discover gaps in resources		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Improve communication, collaboration, and/or coordination		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Practice decision-making or implementing policies and procedures		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Who do you want to participate in the exercise?	Identify strengths and weakness of an existing plan		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	The public		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What level of interaction would you like participants to have with planning experts?	Agency or organizational staff with responsibilities related to managing drought or its effects		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Create opportunities for participants to ask questions or work closely with planning experts		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Focus on interactions among participants with minimal interactions with planning experts		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



# ESTIMATE COSTS

Example expenses associated with developing, convening, and evaluating a drought scenario-based exercise



Venue rental



Personnel



Refreshments



Materials and supplies



Travel expenses



Technology

## Planning Worksheet #2

### Estimate the Costs



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Use this worksheet to help you plan and track expenses for your exercise. When completing this worksheet, keep in mind that this list is intended to provide an example of the expenses that you should consider. Not all of the items on the list will apply to you, and you may need to add some that aren't on the list. Your overall budget and the type, number of participants, and complexity of the exercise will determine your total expenses.

Exercise title		Date	
Projected number of attendees		Location	

Exercise title		Date	
----------------	--	------	--

Personnel	Estimated Cost	Actual Cost
Facilitator		
Consultant		
Subject matter experts		
Staff		
Other		
Subtotal		

Venue	Estimated Cost	Actual Cost
Venue rental		
Equipment rental (audio-visual, extra tables and chairs, Wi-Fi)		
Venue staff or tech support		
Parking		
Other		
Subtotal		





# TALKING POINTS

What is the event?

Why does the event matter?

Who will benefit from the exercise?

---

## 2. Why does the event matter?

Example talking point from a scenario-based workshop in Iowa	
Main point	The 2012 drought strained groundwater supplies and distribution infrastructure to the point that rural water suppliers were nearly unable to meet minimum water requirements.
Sub-point 1	Any breakdown in operations would have resulted in a mass mortality incident among large livestock confinement operations.
Sub-point 2	Livestock numbers have continued to grow, yet no comprehensive drought plan has been created.



# WORKING GROUPS

**Logistics**

**Evaluation**



**Scenario development**

**Facilitation**



Design

Implementation

Impact



**Organize the  
logistics**

**Build the scenario**

**Write the  
evaluation plan**

**Outline the  
facilitation methods**

### **Tasks for organizing logistics**

*Click on a task to learn more*

**Select a date and time**

**Find a venue**

**Develop the agenda**

**Establish communication**

**Set up the registration**

**Coordinate materials, supplies, and equipment**



#### **Key questions to consider when choosing a time and date**

*How much time (number of hours or days) do we need for the exercise?*

*What are the dates of other meetings, workshops, events that could compete for the targeted participants?*

*Is there a specific time of year to avoid due to increased workloads (planting, fire season, etc.) or deadlines?*

*What seasonal weather factors could affect the event or participants' ability to travel?*

*Does the event conflict with holidays?*

*How far will participants need to travel?*






# THREE TASKS FOR BUILDING THE SCENARIO

- Gather background information
- Design the components
- Finalize the scenario

## Design Worksheet #2

### Build the Scenario



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Use this worksheet to you plan, outline, and design your scenario. Create a solid, believable scenario that meets your objectives, but don't get hung up on it. Time is better spent designing great questions and an approach that will engage all players in an interactive dialogue.

**Step 1: Create a work plan.** Work plans spell out the tasks that your working group needs to complete, designates these tasks to the right members, and identifies any information, resources, tools, or equipment required to complete the task. Setting target dates help keep tasks moving at a steady pace and ensures that they are completed in a reasonable time frame.

Working group name		Lead (from Exercise Development Team)	
Scenario			

Tasks & sub-tasks	Responsible group member	Target date	Notes
Task 1:			
Task 2:			

## Timeline



## Assumptions



## Constraints



### Definition



Chronological list of the scenario events.

The implied factual foundation for the exercise.

Things which detract from the realism of the exercise.

### Purpose



Ensures the necessary events happen so that exercise objectives can be met.

Allows the exercise to be completed in the allotted time and aids in accomplishing the exercise objectives.

Accounts for logistical or other limitations and aids in accomplishing the exercise objectives.

### Tips

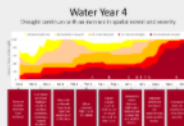


Visual tools can help participants see the relationship between intensity and the events.

Clearly state the assumptions to participants at the beginning of the exercise.

Clearly state the constraints to participants at the beginning of the exercise.

### Example scenario use



(click to view larger version)

Budgets are unlimited.

The scenario is plausible and occurs as presented.

Coordination during the exercise limited to participating agencies.

Responses from participants may not be feasible with current policies.



# EVALUATION PLAN

## Tasks for writing the evaluation plan

*Click on a task to learn more*

Identify the purpose of the evaluation

Determine potential questions

Design the data collection and analysis

Prepare to share your results

## Identify the purpose of the evaluation

The purpose of the evaluation serves as the foundation for selecting questions as well as deciding what data you'll need and how and when it will be collected. Evaluation of drought scenario-based exercises typically focus on two general purposes – demonstrating the exercise's impact and improving its design and delivery. It's common to use both.

## Evaluation types and their purpose, potential uses, and example questions

### Outcome



### Process



### Purpose



Demonstrate the exercise impact

Find out how well the exercise was delivered

### Uses



- Establish and measure clear benefits of the exercise
- Determine changes that occurred as a result of the exercise

- Improve exercise design and delivery
- Explain exercise successes and short-comings
- Assess whether similar outcomes would occur with differing groups
- Portray exercise development and delivery to outside groups

# EVALUATION METHODS



## Tests

Measure knowledge, awareness, and/or skills



## Surveys

Provide self-reported data on knowledge, skills, attitudes, beliefs, and behaviors



## Observations

Obtain data and narrative information to better understand actions, motivations, beliefs, etc.



## Interviews

Obtain data and narrative information to better understand actions, motivations, beliefs, etc.



## Focus groups

Gather a range of perceptions and opinions about the exercise.





# FACILITATION

## Tasks for outlining the facilitation methods

*Click on a task to learn more*

**Establish the outcomes**

**Get to know your participants**

**Select the techniques and activities**

**Create a process agenda**

**Capture value and highlight success**



## Essential factors for planning and selecting facilitation strategies and activities.

Click on an icon to view related questions for consideration.

### Agenda



Designing the agenda goes hand in hand with planning facilitation.

### Number of participants



Using breakouts keeps groups sizes small, creates a comfortable environment, and increases interaction.

### Suitability



Each technique or activity has a purpose. Find one that produces the results you need.

### Variety



A healthy balance of different activities will help participants stay engaged.



Implementation

Impact





### **Pre-event communication helps energize and engage participants**

*Click on an icon to learn more*





# DAY OF EVENT

Prepare the space

Communicate clear guidelines

Listen, engage, and include

Wrap – up



## Steps for wrapping up your scenario-based exercise



### Summarize

Restate the major points that the exercise covered and identify anything that you didn't get to.



### Reflect

Ask participants to reflect on, summarize, and share what they learned during the exercise. This can be done individually or as a small group with one person reporting out.



### Identify next steps

Help participants see how the exercise fits into the big picture of drought preparedness and make sure to communicate the next steps.



### Ask for feedback

Collect evaluation forms. These can help you gauge participants' challenges and concerns with the exercise. They are also helpful for identifying what is needed next.



## Post-workshops tasks



### Debrief with the development team

Within a week or two after the exercise, meet to discuss what went well and what didn't. This is the time to capture your perceptions, future needs and lessons learned.



### Follow up with participants

Ask participants to reflect on, summarize, and share what they learned during the exercise. This can be done individually or as a small group with one person reporting out.



### Review feedback

View evaluations to gauge participant's feedback and think about what you did well or could do differently next time.



### Aggregate your notes

Aggregate and type notes up all of the notes taken from the event. These can be put in a workshop summary to share with participants.



### Set a timeline for remaining activities

Set (or review) your timeline for remaining activities including collecting additional and/or analyzing evaluation data, writing reports, planning next steps, and sharing lessons learned.



# Impact





# Impacts Worksheet #1

## Identify Lessons Learned



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Use this worksheet to help you reflect on your project and capture lessons learned.

**Step 1. Prepare.** Review feedback materials and identify main topics. You may want to seek input in advance with a quick survey or worksheet. This gives individuals who can't attend the meeting or who don't like speaking in groups a chance to contribute and helps participants be better prepared to respond during the meeting.

**Step 2. Discuss and Document.** The purpose of the meeting is to identify successes, lessons learned, and recommendations. Make it clear that it's not a finger-pointing exercise and focus instead on tactics that worked and what could be improved rather than why something went wrong. Use the template below to help guide your discussion and document responses.

What went well?	What recommendations do you have for others so they could have similar successes?



## Tips for developing next steps



**Be realistic**

**Establish a timeline**

**Identify the resources need to carry out the actions**

**Get consensus on who will carry out the actions**

**Identify what will occur**

**Create your action steps as a team**

**Develop actionable steps soon after the exercise is over and continue to work on them on an ongoing basis**





## RESOURCES

Resources

This section offers additional material to build your knowledge about drought planning and scenario exercises. Explore past exercises, case studies, a glossary of terms and a list of references used to create this guide.

### Past Events



### Worksheets



### Glossary



### References



# THANK YOU!

[drought.unl.edu/scenarioguide](https://drought.unl.edu/scenarioguide)





## Question and Answer Session

We will draw initial questions and comments from those submitted via the chat box during the presentations.

### Today's Speakers

Deborah Bathke – [dbathke2@unl.edu](mailto:dbathke2@unl.edu)

Tonya Bernadt – [tbernadt5@unl.edu](mailto:tbernadt5@unl.edu)







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**Evaluating soil health and soil carbon dynamics in**

**Midwestern cropping systems**

March 24, 2021 at 2 pm CT

<https://soilhealthnexus.org/>

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Thank you for participating in today's *The Current*!

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