Republican River Basin Drought Scenario Exercise

-9TH November, 2020-

Mwape Andrew







Republican River Basin- NE







12/7/2020

2

Republican River Basin- NE







3 12/7/2020

"It does not do to leave a live dragon out of your calculations, if you live near him."

— J.R.R. Tolkien,



4 12/7/2020







5 12/7/2020

5













A collaborative, diverse water value dialog is extremely important to ensure societal readiness for drought induced water shortages **certain to occur in the future.**



- Innovative way to engage community leaders, decision-makers, government staff, and stakeholders in collaborative discussions of planning and policy oriented issues.
- People come together to plan and manage activities for a hypothetical drought.
- Stimulate creative thinking for mitigation, response, and adaptation strategies; learn about differing views and perspectives of drought; identify gaps and vulnerabilities; foster better communication and relationships among stakeholders; clarify agency/organizational roles and responsibilities; test and improve coordination among organizations involved in drought response; and practice making drought management decisions and using operational tools.





Scenario Based Drought Planning Exercise-Components







11 12/7/2020

Types: (According to NDMC):

- 1. Discussion based scenario exercise- Participant engagement
 - 1.1. Workshop
 - 1.2. Games
 - 1.3. Table top
- 2.0. Operational based scenario exercise- Realistic 2.1. Functional



1. Discussion based scenario exercise-

Workshop and Game exercises maximize tapping into participants' competitive and collaborative energies by dividing them into teams with assigned roles for each player, and judging each team's response to a hypothetical drought.

1.1. Workshop:

- Develop a component of a drought plan.
- Build a specific product, such as a list of planning resources.
- Identify and prioritize uncertainties in water resources planning.
- Find solutions or create a consensus vision in response to planning challenges and opportunities.



1. Discussion based scenario exercise

1.2. <u>Game</u>:

- Promote team building.
- Increase knowledge about the complexities of water resources management.
- Improve cross-sectoral communication and collaboration.
- Learn about the values and viewpoints of stakeholders with competing interests.
- Generate innovative mitigation, adaptation, and response strategies.
- Simulate or evaluate the costs and benefits of different courses of action.



- 1. Discussion based scenario exercise Participant engagement
 - **1.3.** <u>**Table top**</u>: Ideal for an already existing plan.
 - Test a drought plan.
 - Familiarize participants with the drought plan.
 - Review the effectiveness of the plan.
 - Discover gaps in resources.
 - Improve coordination among stakeholders.



2. Operational based scenario exercise

2.1. Functional:

- Mostly used in emergency management activities.
- More precise and realistic.
- More complex.
- Assess the adequacy of plans, policies, and procedures.
- More costly.



Exercise Options

Considerations		Workshop	Game	Tabletop	Functional
Outcomes	Identification of problems and/or mitigation and response actions	x	x		
	Education or training	x	x	x	x
	Consensus building	x	x	x	
	Collaboration or coordination	x	×	x	×
	Plan evaluation and modification			x	×
Resources	Low to medium	×	×	×	
	Medium to high		×		
	High		×		×
Participation	General stakeholders	x	x	x	
	Agency or organizational staff			x	x

Exercise Options

Considerations		Workshop	Game	Tabletop	Functional
Planning stage	Developing	x	х		
	Existing			х	х
Interaction with experts	Significant	x		x	
	Limited		х		х
Learning format	Thinking and discussing	x	x	x	
	Doing				х
Realism and atmosphere	Less realistic and more relaxed	x	х	x	
	More realistic and tense				х

Add a footer 18 12/7/2020

References:

- Bathke, D., Haigh, T., Bernadt, T., Wall, N. (2019). Drought Scenario-Based Exercises, A Research- and Experience-Based Reference Document.
- North Platte Natural Resources District. (2019). Drought Tournament. Retrieved from https://

https://www.npnrd.org/programs/drought/drought/

• Wilhite, D.A., Hayes, M.J., Knutson, C., and Smith, K.H. (2000, August). Planning for Drought: Moving from Crisis

to Risk Management. Journal of the American Water Resources Association, 36(4), 697-710. Retrieved

from http://onlinelibrary.wiley.com/doi/10.1111/j.1752-1688.2000.tbo4299.x/epdf

• Smith, A.B. and Katz, R.W. (2012). US Billion-Dollar Weather and Climate Disasters. Natural Hazards, DOI

10.1007/s11069-013-0566-5.



Thank you!

Questions? Concerns?

Mwape Andrew Beng. Environmental Engineering, Ph.D. Student; Applied Climate Science-UNL

Email: andrew.mwape@nebraska.gov Phone: +1(531)218-8355



