Building Rural Water Resilience: Community-Driven Decision Support for Climate Disasters

Rural water and wastewater systems are increasingly vulnerable to climate disasters and disruptions, including drought, flooding, wildfire, and extreme storms. These events can disrupt essential services, damage infrastructure, and create significant challenges for communities with limited financial, technical, and staffing capacity. As climate risks intensify, there is a growing need for practical decision-support resources that support rural communities to prepare for, respond to, and recover from disasters.

This presentation explores evidence-based decision-support resources developed through the *Water and Climate Equity in Rural Communities in the United States* project, a collaboration between the Pacific Institute, rural NGOs, technical assistance providers, and rural community partners. The project uses a community-centered, asset-based approach that combines local knowledge, lived experience, and technical expertise to better understand climate vulnerabilities and identify community assets and strategies that strengthen resilience.

Drawing on community participatory research and engagement with technical assistance providers, the presentation will examine actionable approaches that help rural water systems anticipate and navigate climate-related disasters. Topics will include identifying community vulnerabilities and assets, strengthening coordination among local partners, improving preparedness planning, and navigating recovery resources after disasters. The presentation will also highlight how trusted relationships and support networks can improve communities' ability to respond effectively during crises and pursue equitable recovery outcomes.

Particular attention will be given to toolkits and tabletop exercises co-developed with rural communities and technical assistance providers and currently being piloted in communities. The toolkits are designed to help local leaders assess risks, identify preparedness priorities, and connect with relevant resources before disasters occur. The tabletop exercises provide an opportunity for communities and partner organizations to work through realistic disaster scenarios, clarify roles and responsibilities, identify gaps in preparedness, and strengthen coordination before an emergency takes place. Early lessons from these pilot efforts demonstrate the value of practical, community-informed tools that translate complex climate and disaster information into actionable decision-making support while building local capacity for preparedness, response, and recovery.

Participants will leave with examples of evidence-based resources and actionable strategies that can support rural water resilience before, during, and after climate-related disasters. The session will also demonstrate the value of combining community knowledge with technical expertise to develop more effective and equitable approaches to disaster preparedness, response, and recovery.

Project web page:

https://pacinst.org/water-and-climate-equity-in-rural-communities-in-the-united-states/