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Can Rural America Plan for Tomorrow's Drought?

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In many parts of the country, the drought of 2002 was the most severe since the days of the Dust Bowl. The total economic effects may never be known, but estimates of the drought's damages to businesses and the environment range well into the billions of dollars. Agricultural producers suffered losses in crop yield and quality, cattle producers had to liquidate herds, and land prices in drought-affected areas fell. Water restrictions in many areas hampered economic development, as unemployment rose and many rural places lost population.

While the 2002 drought left its mark on many parts of the country, rural areas were hit especially hard. The reason is simple. Most small towns have inadequate, outdated water systems. And because drought is a natural and recurring event, rural areas can expect to be hit hard again. The only way to combat drought in the future is through planning and regional cooperation.

This article highlights some of the reactions by state and local governments to the 2002 drought—and explores ways rural areas can prepare for tomorrow's drought.

Economic impacts of drought

The 2002 drought spread to a large portion of the United States, often with devastating effects (Figure 1). Many agricultural producers suffered large losses to crops and livestock. Many tourist operators suffered losses from a lack of business. Many aging or inadequate water systems in rural America were stressed beyond their limits.

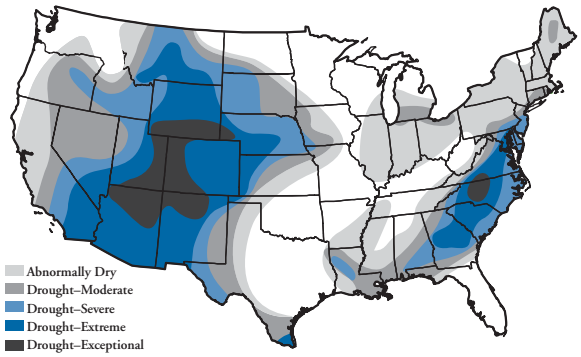
The extremely dry environment in states in the Rockies and further west spawned record numbers of forest fires. The fires burned more than 7 million acres of forests and ruined hundreds of homes. In Colorado and California alone, the cost of fire damage has been in the billions of dollars, and disaster relief and insurance funds will have to be used to help communities recover from the losses.

Drought often hits rural communities the hardest—especially areas that depend on tourism. Tourist visits to ski resorts in Colorado dropped 4.5% for the 2001-02 season due largely to light snowfall. Other activities such as rafting suffered from a lack of adequate river flows.

Agricultural producers were hit particularly hard as well. Crop production for wheat, corn, and soybeans fell (Chart 1).

Crop insurance indemnities were up. In the Tenth Federal Reserve District, which felt the full force of the drought, crop insurance payments surged nearly 90%, with payments at $2.8 billion for 2002. Ranchers were forced to liquidate cattle herds at low prices. Emergency livestock payments of $752 million were made by USDA. And concerns about the effects of the drought remain on Main Streets across America, because crop and livestock losses often ricochet into other sectors, particularly rural businesses.

Figure 1
Drought Conditions: July 2002



Source: National Drought Mitigation

While every community is vulnerable to drought, rural communities in particular take a big hit because of their water system infrastructure. Smaller systems are handicapped because they lack both the financial support and connections with other water utilities to buffer the impact of drought. These factors make drought mitigation an increasingly important topic today. Because few rural towns can afford to update their water systems, the situation worsens as time goes on.

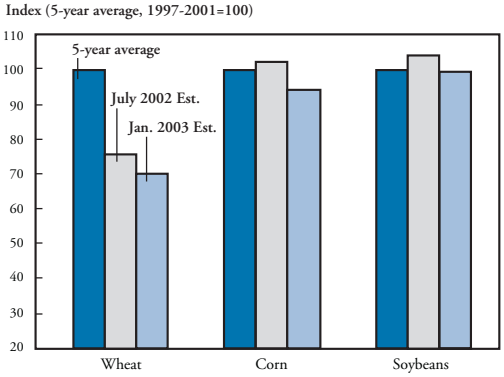
Policy responses

Drought planning and response policies are currently left up to state governments, and the responses are not homogeneous (Figure 2). While leaving drought planning up to individual states generally appears to be welcomed by all parties, a stronger policy framework would aid the states with guidelines and other resources to ease their burden.

While no national policy on drought planning exists today, recent attempts have been made to create a national framework to help states create their drought mitigation plans. One such framework was provided by the National Drought Mitigation Center. NDMC, which conducts research at the University of Nebraska-Lincoln, helps communities and public officials develop and implement measures to reduce societal vulnerability to drought.

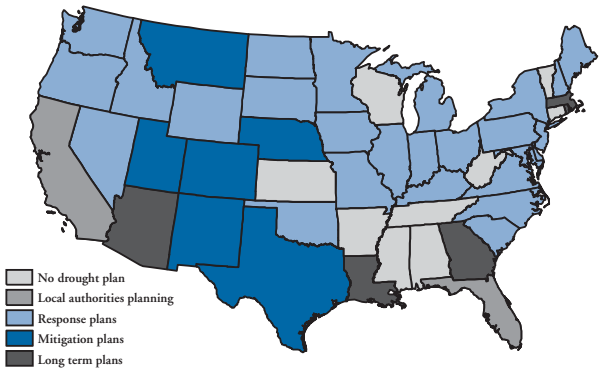
NDMC stresses preparedness and risk management rather than crisis management.

Chart 1
Crop Production



Source: USDA

Figure 2
State Drought Plans



Source: National Drought Mitigation Center

For example, NDMC guidelines recommend conducting a post-drought evaluation, so states can recognize their most vulnerable areas to drought. Rural places are often highly vulnerable to drought because they are either uninformed about state drought plans or they have too few resources to implement a plan. Public awareness is also a key to success in the planning process. Other keys include modifying the current water system to improve efficiency and finding allocation alternatives to help communities reduce the risks associated with drought periods.

Among drought experts there is a growing consensus on a framework for rural communities. In general, drought preparedness rests on three critical components: a comprehensive early warning system, risk and impact assessment procedures, and mitigation and response strategies. An overriding consideration is tailoring a drought plan to the local area. Regional advisory councils can be an invaluable tool in implementing the mitigation techniques.

NDMC has identified ten steps to help states plan for drought:

- Appoint a drought task force. This task force should include federal, state, and local officials. The task force should have two purposes: First, to supervise and coordinate development of the drought plan, and second, during times of drought, to coordinate action and response programs, implement mitigation, and recommend policies to the governor.
- State the purpose and objectives of the drought plan. A general statement should include a plan to reduce the impacts of drought by identifying regions and groups at greatest risk and identify plans to develop programs to help them reduce their risk. Objectives of the plan should include topics such as keeping the public informed, defining duties of all parties involved, and criteria for declaring drought and drought emergencies.
- Seek stakeholder participation and resolve conflict. The task force should identify all citizen groups that have a stake in drought planning. These groups should be involved early in the planning process to identify concerns and to keep them fully aware of their responsibilities.
- Inventory resources and identify groups at risk. An inventory of natural, biological, and human resources should be identified, including constraints that may impede the planning process. Most important, a determination of the vulnerability of resources to periods of water shortage due to drought should be identified. Areas of high risk should be identified so that actions to reduce that risk can be implemented.
- Develop organizational structure and prepare a drought plan. Relevant planning committees should be formed and a clear organizational structure should be determined. These committees should consist of a drought task force, a monitoring committee, as well as a risk assessment committee.
- Integrate science and policy, close institutional gaps. Communication between policymakers and scientists should be enhanced by involving both parties in the planning process and establishing new ways of communication.
- Publicize the proposed plan, solicit reaction. Good communication between the drought committees and the public is essential to reduce the effects of drought. News releases to the public and agencies should include how the plan is expected to relieve impacts of the drought, what it will cost, how it will be funded, and what changes people should make in response to the different degrees of drought. It is important to continue public awareness in nondrought years as well.
- Implement the plan. Once the plan has been agreed on the task force, representatives should oversee the implementation of all plans. Periodic testing, evaluation, and updating should also be done to keep the plan current to regional needs.
- Develop education programs. Awareness of water supply issues should be discussed with several types of groups through presentations, educational materials, workshops, and other gatherings.
- Post-drought evaluation. This evaluation should analyze the assessment and response actions of government and other organizations and make recommendations for improving the system.

State drought plans

The recent drought has sparked new mitigation and planning techniques as well as possible legislation. States are now encouraging regional cooperation more than ever. Since many rural areas lack the financial resources to update or expand their water systems, many towns are being encouraged to connect their water system to regional water systems. Interconnecting these water systems will help to update the water system where needed and create a bigger buffer for smaller communities in times of drought. In addition, regional cooperation can better pool ideas and resources to accomplish mitigation projects. Such regional cooperation stands the best chance of adopting such projects and should be further encouraged.

Three states—Nebraska, South Carolina and Kentucky—have already used the NDMC guidelines to create successful drought plans. Each of these states has taken an active role in educating and aiding rural communities in drought plans. In each of the three states, an overall consensus has emerged that rural communities can get through droughts with fewer problems—and this in fact happened in 2002, thanks to careful planning and increased education on the states' individual drought plans.

Nebraska's current drought plan focuses on mitigation options. Their first step in updating rural water system infrastructures was to create a method of identifying stressed or outdated systems. State officials then worked with the rural communities that lacked the resources to solve their mitigation

MAIN STREETS OF TOMORROW

Growing and Financing Rural Entrepreneurs

—A national conference hosted by—
The Federal Reserve Bank of Kansas City's
Center for the Study of Rural America

This year's conference, which will be held April 28-29 in Kansas City, will focus on the crucial role of entrepreneurs in fueling new economic gains on Main Street. Participants at the conference—economic experts, rural business and financial leaders, and public officials—will discuss recent trends in rural entrepreneurship, identify lessons learned from recent entrepreneurship programs, and explore ways public policy can foster more business starts on Main Street.

For information, contact Bridget Abraham at (800) 333-1010, extension 2754

issues. When a town's water system was identified as having a significant problem, state officials helped that town find a solution. The state purchased a sophisticated leak detection system that could more accurately identify problems in infrastructure and provided capital for Nebraska communities. State water officials also encouraged small communities to merge their water systems with other larger communities, creating regional water systems. The state provided incentives to this end, easing permitting requirements and making available low interest loans or grants for communities without the funds for such large projects.

South Carolina's plan created a new model ordinance at the local level. Several parts of the state experienced drought in recent years, providing lessons that led to new drought plans. The new ordinance requires each local water supplier to develop a drought plan for their area. The ordinance calls for every water system to have a backup water supply, although each town can alter the plan to fit their special needs. The state encourages many rural areas to work as a region so that their backup supplies can be as large as possible. South Carolina provides aid by assisting each drought system with legal questions and policy issues. Most rural communities in the state had little or no knowledge of drought plans before the new drought ordinance became law. So along with the revised plan, the state launched a large education campaign to inform rural regions of new policies concerning drought. Through this vigorous education campaign they have had tremendous success with rural communities initiating drought planning and mitigation.

Kentucky started a drought response plan in 1988 that was built around better water supply plans. Kentucky's plan lays out a planning framework for particular communities and then allows each community to tailor the plan to their region. Although there was a drought response plan in place, few communities knew about it and the drought of 1999 left many rural Kentucky towns in dire straits due to poor implementation of the plan. To combat this problem, the state has conducted a strong education plan in recent years to inform community leaders on how to plan for drought even with limited resources. The state provides a heavy influence in laying the groundwork for plans in Kentucky's rural communities. The renewed commitment by the state has sparked more planning for the impact of future droughts.

Conclusions

Drought is inevitable, therefore preparedness is essential. States must play an important role in aiding rural communities to prepare for tomorrow's drought. Since this year's drought was so severe, many states will reexamine their own readiness for drought in the future.

Drought will continue to exist and rural communities will continue to be hit hard. To minimize the risk of future drought, it is clear that rural communities must overcome their lack of capital and other resources. But capital and resources alone are not enough. For rural communities to survive future droughts, they must cooperate regionally—both to gain the capital and resources they need and to conserve their water.

Edited by Bob Reagan