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Management Responses by Agricultural Producers During the 2002 Drought

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Agricultural producers in Colorado survived the worst drought in living memory primarily through changes in living standards or by pursuing off-farm employment. Relatively few reported selling assets, but debt seems to be the biggest danger to producers.

Introduction

The summer of 2002 saw Colorado experience drought conditions far worse than any in living memory. This drought had severe impacts on Colorado's agricultural economy, both through direct losses in production due to low water supplies and from indirect losses arising from decisions producers took in response to the drought. These indirect losses are of particular concern, because they represent changes in production practices and financial management forced on producers by a lack of water. Ideally, producers will make choices that limit the effects of drought and improve the likelihood of a farm or ranch surviving drought conditions. Unfortunately, some decisions do not. Building on survey results, this paper identifies some of the more common decisions made by Colorado producers in response to drought and how these decisions relate to farm and ranch survival.

The survey results described here were obtained by researchers in the Department of Agricultural and Resource Economics at Colorado State University in cooperation with researchers from the Climate Diagnostic Center of the National Oceanic and Atmospheric Administration in Boulder. These researchers designed and conducted the "Weathering Tough Times" drought survey in the Fall of 2002. The basic results of this survey are reported in Schuck, Frasier, and Webb (2003).

The drought affected all types of agricultural producers in Colorado, so the drought survey included not simply irrigated producers but also dryland farming and livestock operations. Most of the questions focused on how respondents changed their production and water management practices in response to the drought. However, in addition to these questions, producers were also asked what changes were made in the financial management of the farm or ranch and how these drought-induced decisions affected the farm or ranch's ability to continue in production. This last element is critically important because it allows evaluation of how different decisions influence a producers' ability to remain in agriculture.

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Changes in Farm Finances and Practices due to Drought

The first step in analyzing the financial effects of the drought is identifying what decisions producers made, and how these decisions relate to their ability to continue production. While the full effectiveness of different decisions is beyond the scope of this current paper, it is possible to recognize the most common actions among producers and decisions associated with a producer staying in agriculture. The most common actions related to seeking off-farm income, reducing family living standards, pursuing federal assistance, selling water, and exiting agriculture.

Out of nearly half of the survey respondents who reported having off-farm employment, nearly 19% of all survey respondents indicated that they had taken off-farm employment specifically to compensate for reduced incomes caused by the drought. In addition to seeking off-farm employment, nearly 25% of surveyed farmers and ranchers reported making reductions in household standard of living because of the drought. Almost 25% reported seeking federal assistance, although the types of assistance vary widely across operations. Based on these response rates, it appears that finding money from non-agricultural sources or reducing costs in the home were the main way Colorado producers tried to keep their operations in business. While effective in the short run, decisions like these have the potential to both reduce rural standards of living and labor supplies in agriculture and their long run consequences are a major concern.

While these actions represent attempts to both replace income and reduce expenses, it may also be related to another issue indicated by the survey results. Across all types of agricultural operations (farms and ranches), nearly 25% of all survey respondents did not have an adequate accounting of their debt position. Simply put, they could not identify their debt to equity position. This is a point of some concern, particularly since many respondents indicated that they had arranged for either delays or adjustments in repayment schedules for debt in response to the drought. If drought persists or returns in the future, debt delayed from the current drought may have serious effects on agricultural producers.

Another drought survival tool available to Colorado producers is the sale of assets. Generally, this was not a course of action taken by producers. Among the survey respondents, only about 6% of those surveyed indicated that they had sold equipment to improve their operation's financial position. Only about 3% of all producers reported selling land in response to drought. More telling still was the number of respondents who indicated that they had permanently sold water rights as a result of the drought – less than 1% of all respondents indicated that this was among their drought management strategies. Coupled with the response rates for seeking off-farm income or reducing farm living standards, these decisions suggest that most Colorado producers intended to preserve their productive resources during the drought and are committed to staying in production.

Other survey responses bear this out. As part of the survey, producers were asked to identify how likely they were to exit agriculture as a result of the drought. Their responses were indicated as a percentage basis, with 100% indicating that a farmer or rancher absolutely intended to leave agriculture and with 0% indicating a firm commitment to continued production. The average response was only about 20% chance of exit for all producers if drought conditions persisted. More importantly, nearly 60% of all producers indicated that they had no intention of leaving agriculture even if severe drought conditions persisted into 2003. Overall, survey responses indicate that producers are committed to staying in agriculture.

However, of the 40% who indicated some possibility of leaving agriculture if drought conditions persisted, nearly 25% of these had a likelihood of exiting agriculture of 67% or higher. More importantly, these individuals were generally in the highest or most uncertain debt categories. While the proportion of all survey respondents who indicated that they had a greater than 67% likelihood of leaving agriculture was only about 11% of the total sample, most of these farms and ranches had either high debt loads or did not know their debt. The tendency of producers at a high risk of exiting agriculture to have less stable debt positions is a point of real concern indicated by the survey results.

Summary and Conclusion

How agricultural producers coped financially with the 2002 drought is a major point of concern for the state of Colorado. Based on survey results, it appears that despite significant reductions in crop production and herd sizes, most producers remain committed to agriculture. As evidence of this commitment, most producers met the financial challenges of the 2002 drought by changing their standard of living or pursuing off-farm employment rather than selling assets. By preserving their productive base, these producers should be able to continue agricultural production into the future. While this is encouraging, the effects of debt on the likelihood of an agricultural producer leaving production cannot be overlooked, particularly given that many people merely delayed debt repayment during the current drought.

Citations

Schuck, E. C., W.M. Frasier, and R. Webb. "Preliminary Summary of the 2002 Colorado Drought Survey", *Colorado Water*, Vol. 20, No. 3, June 2003: 8-11.

