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## Comments on The 1994-1995 Drought, What Did We Learn from It: The Mexican Perspective, Presented by Dr. Octavio Chavez

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**CARLOS A. RINCÓN\***

## **Comments on "The 1994–1995 Drought, What Did We Learn from It?: The Mexican Perspective," Presented by Dr. Octavio Chávez**

I would like to thank Al Utton, Alberto Székely and Helen Ingram for the invitation to participate in the symposium: *Coping with Scarcity in the Río Grande/ Río Bravo Drainage Basin: Lessons to be Learned from the Droughts of 1995–1996*. It is also my pleasure to comment on Dr. Octavio Chávez's dissertation on the 1994–1995 drought and what we have learned from it from the Mexican perspective.

One uncertainty about defining "drought" is that we do not know when we have entered a drought period. Computation of the time when we enter a drought, however, is not the only problem. We are also uncertain as to what exactly a drought is. Definitions vary according to each professional organization's perspective.

Dr. Chávez should be commended for the time and effort he has put toward his paper, the overview of statistical data for irrigation districts within the Río Grande/Río Bravo watershed, and for the compilation of data regarding water consumption for major population centers. Dr. Chávez's paper gives much needed attention to the social-political value of water resources, especially as it involved two geopolitical entities: the states of Nuevo León and Tamaulipas within the Cuchillo Dam reservoir, and the Río San Juan stakeholders. Dr. Chávez's comments can only be improved upon and enhanced by inclusion of a statement of the meaning of drought for the geographical area of the northern arid-semiarid tropic zone of Mexico. The agronomic perspective has to do with water availability at the root zone depth for plants and crops.

In any discussion of drought, a clear statement of drought analysis and criteria is desperately needed. The severity of drought results as much from poor planning and misallocation of water as it does from weather. Environmental drought stems in large part from inadequate and unholistic local institutions and state and federal policies. To prevent weather fluctuations from disturbing the economy we must use water sensibly even when it is plentiful.

Conflicts regarding water allocation should be resolved with a comprehensive approach throughout the entire drainage basin. This approach should also take into consideration the environmental impacts of water allocation as well as general needs. For example, the project for

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bringing water in pressured pipe to the Marte R. Gómez Reservoir, avoiding a surface stream flow through the Río San Juan, raises several issues that need consideration. Notably, the impact on natural ecosystems, as well as the impact on small communities that have their livelihood along the stream. When we weigh all considerations, it becomes clear that such an engineering solution may have negative impacts to the ecosystems and the communities.

Mexico's General Water Law states that domestic and municipal water users have the highest priority when allocating water resources. However, there needs to be in place a continuous and effective management plan to increase the efficiency of water use. This is particularly apparent in the border communities, which are experiencing continuous growth and industrial development. Despite this growth, eighty percent of the Río Grande/Río Bravo river basin is allocated for agriculture. Because of the increasing competition between municipalities and agricultural interests, there is an urgent need to increase efficiency in water distribution, application, and crop use, both within an individual parcel and at the irrigation district level.

Fortunately, approaches to solving the problems of efficient water use and distribution can be quite dynamic. This dynamism is often inspired by the real threat of drought conditions and resulting water scarcity. For example, between 1994–1996, during a period of severe drought, farmers from Delicias, Chihuahua, Irrigation District 05, decided to market their share of surface water for the spring and summer cropping season to neighboring farmers from the city of Camargo. The irrigation district then used the money to improve and rehabilitate their hydraulic infrastructure. By building and improving irrigation channels, dams, and roads the district was able to augment its capability for the coming years, as well as create much needed employment opportunities. With these improvements, the district's reservoirs will now have enough water to crop the entire district once they are beyond the drought period.

Other districts took different but equally effective preservation measures. During this same period, farmers in the 026 irrigation district reduced the number of water applications and decreased the total irrigation depth applied to crops. Although this approach reduced yields during the drought, it allowed farms to maintain their farming activities and created jobs.

Unfortunately, not every approach to water allocation is as sensible as those noted above. Ironically, despite the knowledge of the nature of the region, we continue to develop industry, such as beverage companies, with extremely high water demands. Exporting water out of the basin in the form of alcoholic beverages is not a sustainable water management plan. This is a non-sustainable water management plan.

Regardless of how we approach water allocation, we need to keep in mind that Northern Mexico is within an arid to semi-arid climate. There is continuous conflict surrounding water allocation among the various users. In this region, water, either surface or ground, is not abundant. As a cautious concluding note I quote a statement made by a politician during a recent election campaign: "We are in the fifth year of a six year drought."