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Designing a Water Market for the Rio Grande Basin of New Mexico

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Abstract Text:

Water resources in New Mexico are becoming increasingly scarce as population growth escalates and the agricultural sector continues to expand. This growth has put increasing pressure on cities and environmental concerns to secure reliable supplies for the future. Additionally, the 2003 drought in New Mexico led many users to rehabilitate wells that had not been used for decades, causing a significant increase in groundwater extractions that has threatened to disrupt interstate compact agreements and lead to a priority call on the river. Such a call would disrupt urban water supplies which are considered junior users within the state of New Mexico.

To avoid these drastic circumstances, the design and implementation of a water market has been supported by state policymakers. This paper presents the results of a project whose objective was to develop this market for the largest surface water provider in Southern New Mexico – the Elephant Butte Irrigation District. Data for the project were collected from a survey of farmers in the district and interviews with water resource managers, municipalities' managers, major agricultural producers in the valley, real estate developers, water rights lawyers and government water management authorities such as the Office of the State Engineer and the Interstate Stream Commission. Data on pricing for the water marketing were collected from issues of Water Strategist, which compiles water transaction data for 17 western states.

Using these data, the paper describes the goal of the market, the alternative designs considered in light of these goals and the potential impact of the market on agricultural production and incomes. Issues discussed in depth include transaction costs, third party impacts, environmental impacts and conjunctive use. It is hoped that this design can serve as a template in other states with similar water scarcity concerns to develop mechanisms to reallocate scarce supplies to the highest needs while maintaining economic growth.

Impact Statement:

The project is designed to improve the allocation of water among competing users. Implementation of water transfer mechanisms, such as a water markets or water banks, is expected to improve the efficiency of water allocation as resources move to their most highly valued and productive uses. Water markets are difficult to implement, however, without generating significant negative third party impacts or externalities. The challenge then is in formulating a framework for water market design that incorporates these externalities into the decision-making process and thus not only improves the efficiency of water allocation but also maximizes social welfare.