

Measuring Acequia Functionality: Developing a Tool for Assessing New Mexico's Community-Based Irrigation Systems

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Author: Roybal, Marcos A.

acequia

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Abstract: The semi-arid environment of the American Southwest has necessitated creative strategies for the use and management of water resources. In New Mexico and southern Colorado, one such strategy is the acequia irrigation system, which serves the dual purpose of delivering water and shaping community. This professional project provides a synthesis of existing knowledge with respect to acequias, and develops a tool, the Acequia Functionality Assessment, for evaluation of factors that contribute to the operation of acequias. It begins by summarizing the origin, development and use of acequias, and highlights the communal nature of their operation. Second, it briefly describes resilience theory as a lens through which to view the past, present and future of acequias. Third, it outlines the various benefits acequias provide, which include crop irrigation, serving as a cultural resource and important element of rural communities, ecosystem services, and representing an alternative method of natural resource management. Fourth, it discusses the challenges acequias currently face, which range from increasing demands on land and water resources, changing socioeconomic conditions, large-scale agricultural practices, and climate change. Finally, in recognition of the many benefits of acequias provide but the challenges they face, it develops the Acequia Functionality Assessment (AFA) as a planning tool for acequia users, researchers, and funding agencies to document current conditions and needs, monitor project effectiveness and changes over time, and engage youth and other community members. Such use of the AFA can help build the resilience of acequias and likelihood that they will continue to function in the future.

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