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Farm Size, Irrigation Practices, and On-Farm Irrigation Efficiency in New Mexico's Elephant Butte Irrigation District

Relationships between farm size, irrigation practices, and on-farm irrigation efficiency in the Elephant Butte Irrigation District, New Mexico, U.S.A. are explored using water delivery data supplied by the District. The study area is experiencing rapid population growth, development, and competition for existing water supplies. It is assumed that water will ultimately be transferred from agriculture to other uses. Analysis of pecan, alfalfa, and cotton water delivery data, fieldwork, and interviews with irrigators found extremely long irrigation durations, inefficient irrigation practices, inadequate on-farm infrastructure, and lack of interest in making improvements to the current irrigation system or methods on the smallest farms.

These findings are attributed to the nature of residential, lifestyle, or retirement agriculture. Irrigation practices on large, commercial farms are notably different from the smallest farms: irrigation event durations are shorter, less water is applied, and the producers are commercially oriented. With respect to future increases in the efficiency of irrigation water usage, large, commercially-oriented producers already have achieved a high level of physical efficiency.

Many small producers appear to view irrigation as a consumptive, recreational, social, or lifestyle activity, rather than an income generating pursuit, thus the cost of inducing changes in their practices may be extremely high. Small farm operators are likely to show limited interest in improving on-farm irrigation infrastructure, adopting management intensive irrigation technologies or practices, or making significant irrigation investments. Easement and common property disputes over ditch maintenance between owners of small parcels also create disincentives for infrastructure improvements.

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