Food-Energy-Water Nexus Informed Brackish Groundwater Development in the Southern High Plains Region of Texas

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The Dockum Group of sediments is a water-bearing formation of Triassic age underlying much of the Southern High Plains. There is considerable interest in exploring the utility of this water as an alternative source that can help prolong the life of the primary source of water in the High Plains of Texas. Water augmentation using brackish aquifers is widely being considered by regional water resources planners.

This ongoing study seeks to establish a food-energy-water nexus framework to explore brackish groundwater resources for augmentation purposes, taking in to account the varied factors that would affect the process, such as quality, availability, spatial variability, value, users, and specific needs.

Although some treatment may be needed depending on the specific use; our study, on its first phase presented here, has found the quality of the water in the formation to be useful to the three targeted users (oil & gas extraction, municipalities, and agriculture).

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