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Model to improve decision making for farms dealing with salinity in the south-west region.

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Model to improve decision making for farms dealing with salinity in the south-west region.

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Managing water resources is a perennial issue intensified with urbanization and rising population. While making decisions, it's difficult to fully understand how factors that affect the water resources management are interconnected and what unintended consequences changes in policy may have on the system. Some methods and models can be used to connect the dots; an expert is often required to explain the results. We are developing a Bayesian Network based model which, graphically, can show the interconnections between the various factors affecting the systems and allow users to understand how changes in one factor may affect other linked factors. The model we are developing concentrates on salinity issues with irrigation and should help to improve the decision making particularly regarding salinity management. When applied to real farms, the model should help farmers choose alternative irrigation methods as well as seeing the long-term effects of their current methods. Another modeling tool under development to understand local salinity issues is based on the system dynamic modeling. The dynamic system model is specifically designed to answer the question of 'how long before the current farming regime has to be changed.' We will present these models applied to a farm in El Paso.

bayesian network; system modeling; decision support; salinity; el paso