

# **Economic Feasibility of Wine Grape Production in Semi-Arid Regions**

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## Problem Statement:

As water resources in semi-arid regions decline, agricultural producers are encouraged to adopt water conserving cropping strategies. For example, water levels in Walker Lake (Nevada) have been declining and are becoming increasingly saline, reducing their ability to sustain an appropriate habitat for aquatic and avian life. Continued habitat degradation has potential long-term economic and ecological consequences. The proposed solution to this problem is for current water users in the Walker River Basin to reduce water consumption, resulting in increased water flows to Walker Lake. The primary water users in the basin are agricultural producers. Current production in the basin consists primarily of alfalfa, onion, and livestock production. If water consumption is to decline, alternative crops and/or irrigation systems must be implemented. One option is to adopt wine grape production, which uses one quarter to one eighth of the water of alfalfa production. However, maintaining profitable and sustainable agricultural sector is also a goal.

## Data and Methods:

Data for this study regarding current agricultural practices and that of wine grape production has been obtained from enterprise budgets, producer interviews, and from researchers at experimental stations and from field trials here in Northern Nevada. We use WinEPIC, a Windows-based version of the EPIC model, which synthesizes both agronomics and economics to model yields and returns of wine grape production under differing irrigation practices, soil salinity, and grape type. Risk analysis or the distribution of net returns to wine grape production will also be completed.