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Determining Irrigators Preferences for Water Allocation Criteria Using Conjoint Analysis

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ABSTRACT

Water allocation based on multiple criteria has the potential to maximize the total benefits to be gained from the use of a single unit of water. However most of the multi-criteria methods inherently include a considerable degree of subjectivity. In this study, we have attempted to reduce the subjectivity factor from water allocation decision-making process by introducing a conjoint analysis method. Opinions on the importance of a number of water allocation criteria were sought from a large number of irrigation farmers. The opinion survey data were then analyzed using the traditional conjoint analysis method which is widely used to analyze marketing surveys. The analysis allowed objective determination of the relative importance of five water allocation criteria (*i.e.* net farm income, percent of family working on the farm, amount paid to irrigation agency for canal water share). Each water allocation criteria was divided into three levels and utility values for each criteria level were estimated from the farmers' preferences on five water allocation criteria (attributes). The conjoint survey results revealed that the respondents prefer that "annual net farm income" be the most important attribute in water allocation decisions. As would be expected the vast majority of the respondents overwhelmingly placed the "water price" in the last position.

KEYWORDS

Conjoint Analysis; Water Allocation; Pairwise Comparison; *Warabandi*

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