

## **Abstract**

In current study establishment of water market between farmers in aquiferous area of Zayandehrod in Esfahan is discussed. It is necessary to say that Zayandehrod is one of the most important of farming water resource in this region. After completion of 100 questioners by the farmers of the region of under study, based on area under cultivation, farms are categorized in 3 groups and under 3 different scenarios for risk values in available water and water yield, with the use of multi- attribute planning model the consequences of establishment of water market on the level of farmers' welfare were deter. With establishment of water market while price of irrigation water was considered exogenous, multi-values desirability function for each one of representative farms was determined. In the next stage, considering irrigation water price is endogenous and with determination of weight for each one of representative farms and generalising that to all farms in the group, dramatizing of irrigation water market under nine different scenarios for risk values of amount of available water and water yield was carried out and again consequence of water market establishment was studied and compared with the status of prior of water market establishment. Results shown that in all three groups despite of establishment of water market in two cases of water price being exogenous and endogenous, level of welfare between farmers has been increased and therefore in the area with establishment of water market total welfare of farmers are risen.

Key words: water market- multi-attributr utility theory- Zayandehrod



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The Thesis Submitted for the Degree of M.S.  
(in the field of Agricultural Economic)

**Modeling of agricultural water market of Zayanderood watershed**

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February-2012