

## عنوان مقاله:

Estimation of Irrigation Water Demand Function, Analyzing its Cross and Symmetrical Relations with other Inputs  
(Qazvin Plain)

## محل انتشار:

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## خلاصه مقاله:

Water is the most important input used in agriculture. Due to the scarce water resources and dry and semi-arid climatic conditions of Iran, water demand management has special importance in the whole economy, including the agricultural sector, because this sector has the largest share in water consumption. The purpose of this study was to estimate the water demand function and to analyze the cross and symmetrical relationships between water and other inputs. For this purpose, the Ordinary, Allen, and Morishima's substitution elasticity were calculated, and the substitution and complementary relationship between water and other inputs were determined. These elasticities determine the amount and sign of cross relationship of water. In order to achieve the objectives of research, the translog cost function, along with the input share equations were estimated using iterative seemingly unrelated regressions. The information was related to crops and period (۲۰۰۷-۲۰۱۵) in Qazvin. The results showed that water was a low-elasticity input and its value was  $-0.75$ . Also, the cross elasticity with pesticide, labor, machinery and land was calculated as  $0.71$ ,  $0.99$ ,  $0.93$ , and  $0.89$ , respectively, which implied the substitution relationship. Investigating symmetry of elasticities also implies the asymmetry of Ordinary and Morishima elasticities and symmetry of Allen's elasticity with other inputs. In this regard, the cross elasticity of inputs of pesticide, labor, machinery, land and water were calculated as  $0.28$ ,  $0.86$ ,  $0.91$ , and  $0.90$ , respectively, indicating the asymmetry of this elasticity. Differences between levels of cross elasticities depend on the cost share of the two inputs and the sign of estimated coefficient

## کلمات کلیدی:

.Iterative seemingly unrelated regressions, Substitution Elasticity

## لینک ثابت مقاله در پایگاه سیویلیکا:

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