Considering farmer's response to irrigation water price and quotas policies in Kerman province

Water scarcity is a growing global problem and increasing population pressures, living standards and the growing demand for environmental quality have evoked all the governments to represent better solutions about water resources management. In addition, there are growing political ties for reducing water use in agriculture that follow enough environmental benefits and increase the welfare of other water consumers. This further increases the economic analysis to check the behavior of farmers using mathematical programming techniques and has been followed the application of Positive Mathematical Programming (PMP) especially. Despite the popularity of this model in economic analysis, the traditional PMP model have faced failure for the activities that haven't been observed in the reference period and could be a limiting factor in the field of irrigation analysis. The method used in this study is one of the PMP methods that used for deficit irrigation technique that haven't been observed in the reference period. This method applied in Kerman that faces water shortages and the reduction of groundwater levels to evaluate the price increase and quantity reduction of available irrigation water. Applied policies include increased 5, 10, 20 and 30 percent in water irrigation prices and reduced 10, 15, 25 and 30 percent in the amount of available irrigation water and combination of these two policies. The results showed that increased costs and reduced available irrigation water are effective in accepting deficit irrigation. Additionally, the impacts of quota policies are more than price increase and integrated policies.

Key words: deficit irrigation, Water price policy, Kerman, Reduction of available water, Positive Mathematical Programming

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