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“Bridging the gap between increasing knowledge and decreasing resources”

Governmental Policies and Ground-Water Exploitation: The Case of Darab Central Valley, Iran

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Abstract

Ground-water scarcity is a global problem for farmers, particularly in arid and semi-arid regions. At the same time, governments of these countries play a key role in ground-water management. Considering the case of Darab central valley, this paper intends to find out the effect of different policies aiming at wheat self-sufficiency on ground-water extraction.

In Iran, the government follows an explicit strategy of attaining national food autarky focus on wheat. Wheat minimum guaranteed price, crop insurance and credits with subsidised interest rate are the main policies implemented for that purpose. This paper investigates five policy scenarios with regard to their impact on water extraction: a) presence of subsidised credits together with minimum guaranteed price; b) presence of subsidised credit; c) presence of minimum guaranteed price; d) presence of crop insurance policy e) reference situation without policy interventions. The methods applied for data analysis are multiple regression analysis and profitability analysis. The results are calculated with regard to four village groups, differentiated according to their level of ground-water availability. Primary data used were collected in a field survey among 362 farmers from nine villages, which had been selected by multiple two-stage sampling.

It turned out that wheat minimum guaranteed price created higher profit margins than reference situation e), even in villages with low water availability. Under scenario e) only the farmers from one village could cover their wheat production cost while the rest would face loss. Crop insurance policy encouraged farmers, especially those from villages with less water availability, to expand their wheat area instead of adopting it to the available water. Credits with low interest rate led to underrating of water extraction costs and enhanced ground-water extraction. This paper concludes that credits with low interest rate, crop insurance policy and minimum guaranteed price policy run counter to sustainable use of ground-water resources, pointing to an obvious conflict between Iran's food self-sufficiency strategies and the country's long-term food security which is seriously challenged by increasing water stress.

Keywords: Ground-water availability, ground-water exploitation, policy intervention, self-sufficiency policy