

Analyzing Water Pricing Effects on Groundwater Resources Management in Iran

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Abstract

Water is a basic element in socio-economic development; according to this fact, concentrating on the future of water and having a general and clear vision toward this issue is essential. According to “World Food Summit 1996,” sustainability of food storage in the next century thoroughly depends on successful experiences in water resources utilization. Water issues are important in agricultural products because any kind of decision making in water pricing in agricultural water supply and demand can result in agricultural water management and monitoring. Since agricultural water consumption is 90% of the total water consumption in Iran and considering that agriculture section includes 27% of GDP, 23% of total employment, 80% of total food supply according to official statistics and economic indices, it is necessary to consider water as an economic good due to the fourth principle of statement in the International Water and Environment Conference (ICWE, Ireland, Dublin, 1992).

The water was priced for the first time in 1974, in Iran. In addition, Water pricing policy in agricultural section was revised in 1990. As farmers don't pay the real cost of water, it causes excess withdrawal from ground and surface water resources. For solving this issue, the government is trying to increase irrigation efficiency and manage agricultural water consumption by implementing subsidy management law, real water pricing and water quota from 2011. In addition, the government is trying to use these acts as a managerial tool to save water resources for next generations. Farmers' reaction to this policy is unpredictable because they are sensitive to each policy which affects their production process and profit, and they react to these policies variously. The impact of these policies, decisions and law enforcement (for beneficiaries and consumers of water resources) should be studied to ensure that the farmers accept and support the decisions by knowing the policies' impacts and aftermaths.

This study develops a system dynamic approach to provide a framework for studying the effects of different variables on water resources supply and demand. In this paper, water pricing impacts on

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agricultural water supply, demand, and groundwater management will be studied by casual loop diagrams, pricing policies, quota, subsidies and utilization of controlling devices determined by the government through rules and regulations for the period of 2015 – 2045.

Keywords: System dynamics, Water pricing, Water supply and demand, Quota, Subsidies.