

Water and Irrigation; Studies from Chinese Academy of Sciences Describe New Findings in Water and Irrigation (Determining the Influence of Irrigation Efficiency Improvement On Water Use and Consumption By Conceptually Considering Hydrological Pathways)

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2019 MAR 21 (VerticalNews) -- By a News Reporter-Staff News Editor at Agriculture Week -- Fresh data on Water and Irrigation are presented in a new report. According to news reporting out of Lanzhou, People's Republic of China, by VerticalNews editors, research stated, "Improving irrigation efficiency is widely believed to be a promising opportunity for large water savings. However, more and more voices have been raised against this idea in recent years."

Financial supporters for this research include Strategic Priority Research Program of Chinese Academy of Sciences, CAS "Light of West China" Program.

Our news journalists obtained a quote from the research from the Chinese Academy of Sciences, "This study investigated the impacts of irrigation efficiency improvement on water use and consumption by combining an agro-economic model with the conceptualization of hydrological pathways. The investigation was conducted under two different conditions, i.e., Case 1: unlimited water supply and restricted irrigatable land, and Case 2: limited water supply and unrestricted irrigatable land. At the scale of the WUU, we found that the water uses could be reduced significantly after improving irrigation efficiency, while the water consumptions would be of similar magnitudes for different irrigation techniques under the condition of Case 1. However, in the condition of Case 2, the water uses would be inelastic to the enhanced irrigation efficiency; and the water consumption would increase slightly if the fixed cost ratio is high. At the scale of the irrigation system, the reductions in water use, as a result of efficiency improvement, would be more and more insignificant in response to increasing water cost ratios and numbers of WUUs under the condition of Case 1. In contrast, the water uses would increase, although with small magnitudes, when the fixed cost ratios and the number of reuse cycles are relatively high under the condition of Case 2. This study demonstrated that alternative restrictions on water supply and irrigatable land could effectively constrain water use and consumption after modernizing the irrigation systems. The sensitivity of the major assumptions, and the uncertainties and limitations have been revealed and discussed, along with some implications for agricultural water managements."

According to the news editors, the research concluded: "The findings can shed some light on the lively debate regarding the effectiveness of technological water saving measures."

For more information on this research see: Determining the Influence of Irrigation Efficiency Improvement On Water Use and Consumption By Conceptually Considering Hydrological Pathways. *Agricultural Water Management* , 2019;213():674-681. *Agricultural Water Management* can be contacted at: Elsevier Science Bv, PO Box 211, 1000 Ae Amsterdam, Netherlands. (Elsevier - www.elsevier.com; *Agricultural Water Management* - www.journals.elsevier.com/agricultural-water-management/)

Our news journalists report that additional information may be obtained by contacting L. Zhang, Chinese Academy Sci, Northwest Inst Ecoenvironm &Resources, Key Lab Remote Sensing Gansu Prov, Lanzhou 730000, Gansu, People's Republic of China. Additional authors for this research include Q.M. Ma, Y.B. Zhao, X.B. Wu and W.J. Yu. and can be your direct source for a journal article and its citation.

Keywords for this news article include: Lanzhou, People's Republic of China, Asia, Water and Irrigation, Chinese Academy of Sciences.

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