

# Abstract

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## **The Impact of Improved Irrigation Systems on Water Scarcity and Sustainable Development in Egypt**

ABSTRACT The American University in Cairo School of Business The Impact of Improved Irrigation Systems on Water Scarcity and Sustainable Development in Egypt by Farah Ahmed Zaki Deghaidy Under the Supervision of Professor Adel Beshai Water plays a crucial role in the economic development of countries worldwide. Egypt is a developing country facing serious challenges for achieving sustainable development because of water scarcity problems. Water scarcity is limiting the agricultural development, threatening sustainability of land and water resources and increasing water management problems. Therefore, water scarcity is imposing constraints on the country's economic growth, food security and economic development. To meet the increasing demand on food and water, the government has been adopting strategies for improving water use and water management especially in the agricultural sector. This study evaluated the impact of water scarcity on economic growth and sustainable development in Egypt by empirically testing the economic productivity, sustainability and management of land and water resources. The study found that during the winter season the economic productivity of land and water resources are not imposing threats on food security but are not achieving sufficient growth. Based on evaluating water quality indicators the study found that the irrigation water does not meet the sustainability measurements and could affect the long run productivity and sustainability of land and water resources. Based on evaluating water stress and undertaking location comparative analysis the study found that there is inequity between the different locations due to inefficient use and management of water resources. However, during the winter season and due to the reuse of drainage water the plants do not suffer from water stress. Furthermore, this study evaluated the impact of the irrigation improvement projects on water scarcity and sustainable development based on testing the economic productivity, sustainability and management of land and water resources. Based on the results obtained in this research the study concluded that the irrigation improvement projects still did not achieve its main goals of increasing agricultural production, improving the long run sustainability of irrigation and improve water use and management in the agricultural sector.