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Water Resources Crisis in Saudi Arabia, Challenges and Possible Management Options: An Analytic Review

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Abstract : The Kingdom of Saudi Arabia (KSA) is heading towards a severe and rapidly expanding water crisis, which can have negative impacts on the country’s environment and economy. Of the total water consumption in KSA, the agricultural sector accounts for nearly 87% of the total water use and, therefore, any attempt that overlooks this sector will not help in improving the sustainability of the country’s water resources. KSA Vision 2030 gives priority of water use in the agriculture sector for the regions that have natural renewable water resources. It means that there is little concern for making reuse of municipal wastewater for irrigation purposes in any region in general and in water-scarce regions in particular. The use of treated wastewater is very limited in Saudi Arabia, but it has very considerable potential for future expansion due its numerous beneficial uses. This study reviews the current situation of water resources in Saudi Arabia, providing more highlights on agriculture and wastewater reuse. The reviewed study is proposing some corrective measures for development and better management of water resources in the Kingdom. Suggestions also include consideration of treated water as an alternative source for irrigation in some regions of the country. The study concluded that a sustainable solution for the water crisis in KSA requires implementation of multiple measures in an integrated manner. The integrated solution plan should focus on two main directions: first, improving the current management practices of the existing water resources; second, developing new water supplies from both conventional and non-conventional sources.

Keywords : Saudia Arabia, water resources, water crises, wastewater reuse
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