

The Kingdom of Saudi Arabia (KSA) is facing a major difficulty due to absolute water scarcity. The country's primary water sources include surface water, groundwater (renewable and non-renewable), desalinated water, and treated wastewater. Saudi Arabia is the world's biggest country without any perennial rivers or lakes. Hence it relies significantly on non-renewable groundwater and desalination resources to meet its daily demands, including drinking and agricultural requirements. Due to the scarcity of conventional resources (surface water and groundwater), non-conventional water resources (desalinated water and treated wastewater) have been used as a potential substitute for water scarcity. Water in Saudi Arabia (KSA) is limited and valuable due to a lack of natural water basins. Climate change and population increase have compounded the issue of water scarcity. Groundwater, the primary natural water supply, has been depleted beyond its regeneration rate. Furthermore, KSA relies significantly on saltwater desalination to meet rising demand, producing roughly 18% of total desalinated water worldwide. At the same time, the Kingdom of Saudi Arabia has the world's third largest per capita freshwater consumption. If no action is taken soon, the nation's water resources would be jeopardised.