The UAE is divided into two distinct zones: the larger low-lying zone and the mountains zone. The first covers over 90% of the country's area, extending from the northwest to the eastern part of the country where it is truncated by mountains zone. The low-lying zone ranges in altitude from the sea level up to 300 meters. Its major part is characterized by the presence of sand dunes which rise gradually from the coastal plain reaching their highest elevation of 250 m above sea level (amsl). Along the coast of the Arabian Gulf, the low-lying land punctuated by ancient raised beaches and isolated hills which may reach up to 40 m in some locations. Due to the recharge–discharge imbalance, a distinctive depletion of groundwater table has occurred in most aquifers in UAE. The existing imbalance has originated as a consequence of lack of natural recharge and extensive discharge. Groundwater recourses in the UAE have been over exploited to meet the increasing water demands, especially for agricultural purposes, during the last two decades.

Detention dams are designed to retard the flow velocities and allow appropriate time fore the recharge process to take place. Retention dams are designed for water storage with large quantities and relatively high hydraulic heads. On the other hand, water might be used directly from the storage for irrigation purposes. During the last two decades the UAE government has built more then hundred dams. In addition to the numerous dams, several observation wells have been installed to monitor the subsurface water levels as well as changes in water quality.

The main objective of this study is the evaluation the effectiveness of dams in recharging shallow groundwater aquifer.