



## Check dams across non-perennial rivers for mitigation of seawater intrusion



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## Introduction

Managed aquifer recharge (MAR) methods are used to augment groundwater resources in many regions. Among several methods of MAR, the check dams are more efficient methods in regions with non-perennial rivers. The objective of the present study is to access the impact of check dams on the spatiotemporal dynamics of groundwater level and its quality through a modelling approach.







Scenario	Description	Groundwater level in the year 2030			
		Upper aquifer		Lower aquifer	
		Eastern side	Western side	Eastern side	Western side
1	10% increase in rainfall recharge	2m raise	1.7m raise	2m raise	1.5m raise
2	10% decrease in rainfall recharge	1m decline	0.8m decline	1.5m decline	1m decline
3	10% increase in pumping	1m decline	0.8m decline	4m decline	3m decline
4	10% increase in rainfall recharge + 10% increase	1m raise	0.8m raise	2.5m decline	1.5m dec line

## Conclusion

The model indicated that by renovating the existing surface water bodies that are not well-maintained (ponds, lakes etc.), increasing the recharge through the check dams along the rivers and reducing the pumping of groundwater in the area will slowly revive the aquifer. The seawater-freshwater interface which is currently at a distance of 14 km will decrease to about 8 km by the year 2030. Thus, with time these check dams will help to mitigate the seawater intrusion and improve the groundwater quality.

References: Rajaveni et al. 2016. Hydrology Research; Rajaveni et al. 2016 Journal of Climate Change





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