

# Influence of aquifer recharge structures and surface water bodies on geogenic fluoride contamination

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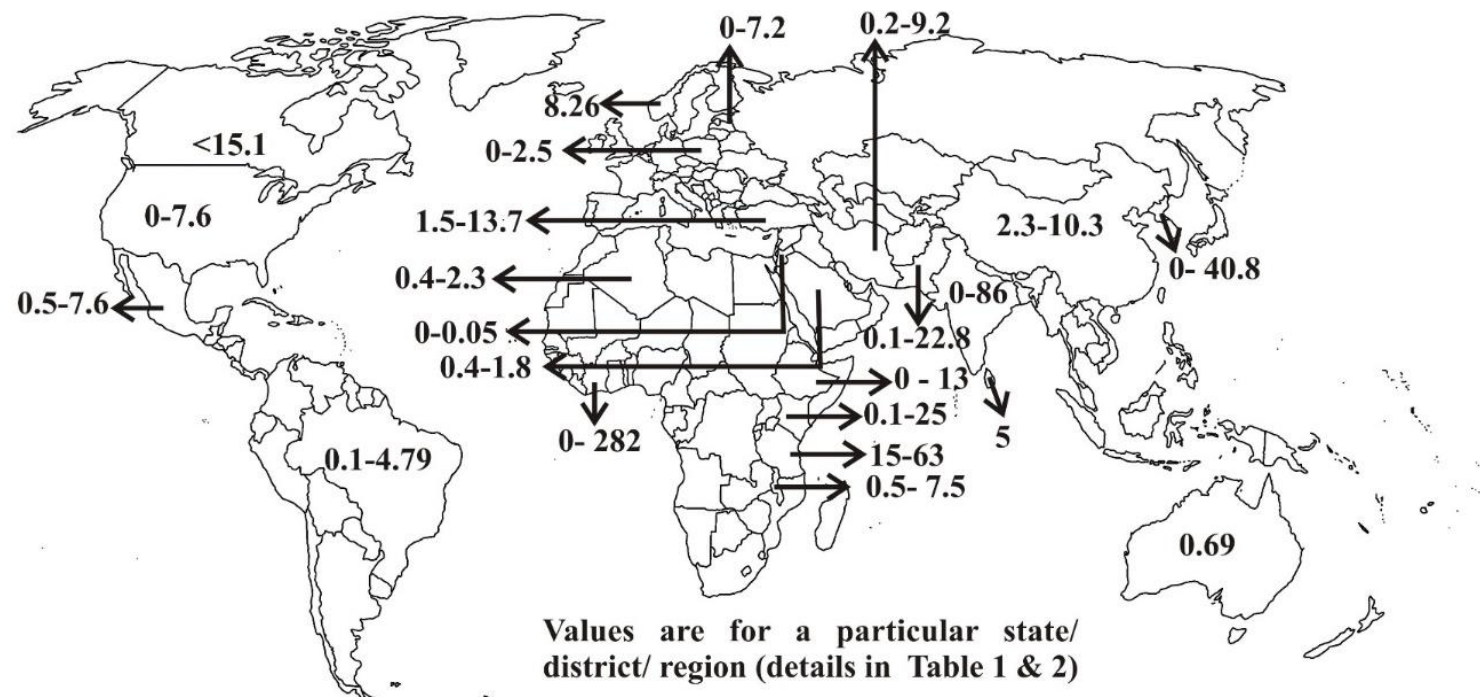
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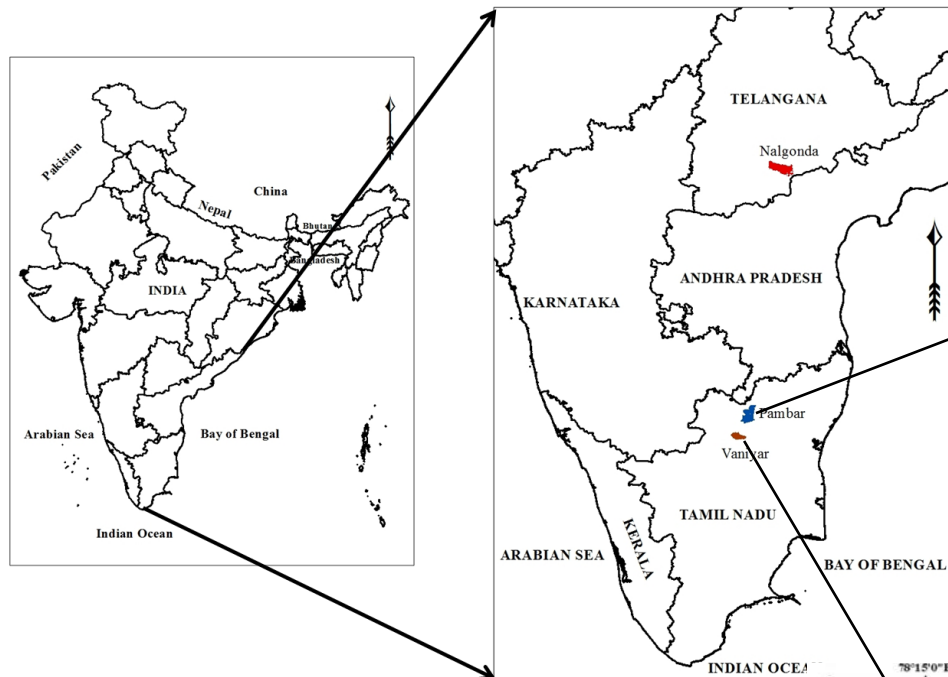
<sup>3</sup>*Water Resources Organisation, Public Works Department, Government of Tamil Nadu, India.*

# Introduction

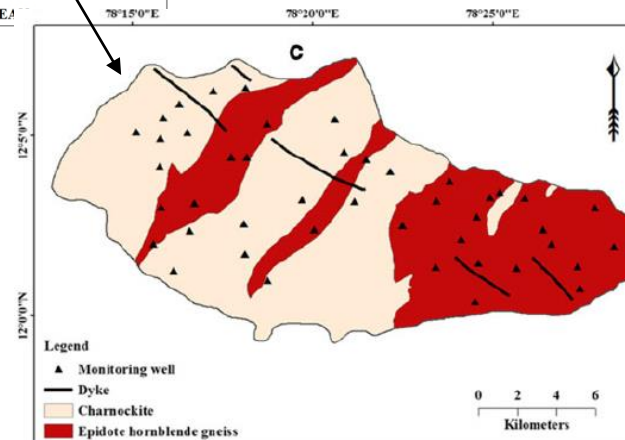
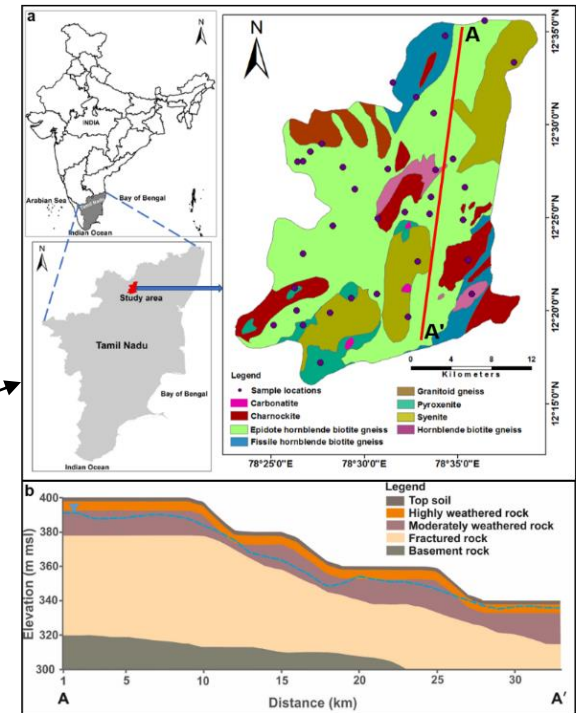
- Fluoride rich water affects about 200 million people from 25 nations (Ayoob and Gupta 2006)
- In India 60–65 million people drink fluoride contaminated groundwater
- Treatment methods are seldom adopted by the people
- Rainfall recharge as a mitigation measure has not been well understood



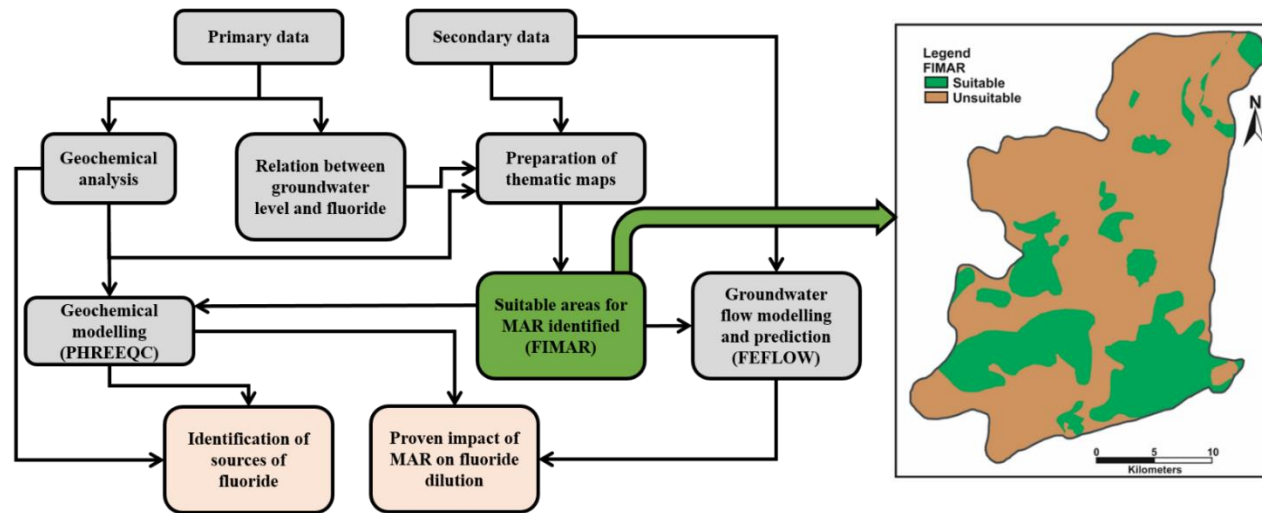
# Study area



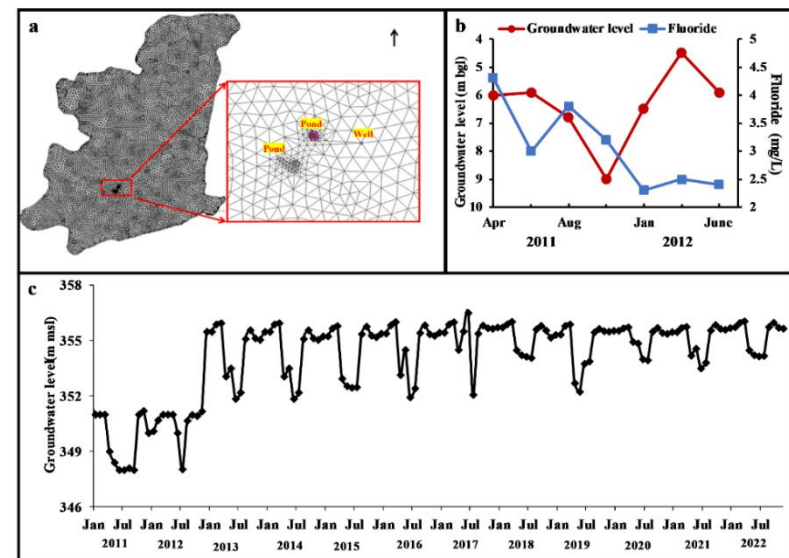
Location of study areas



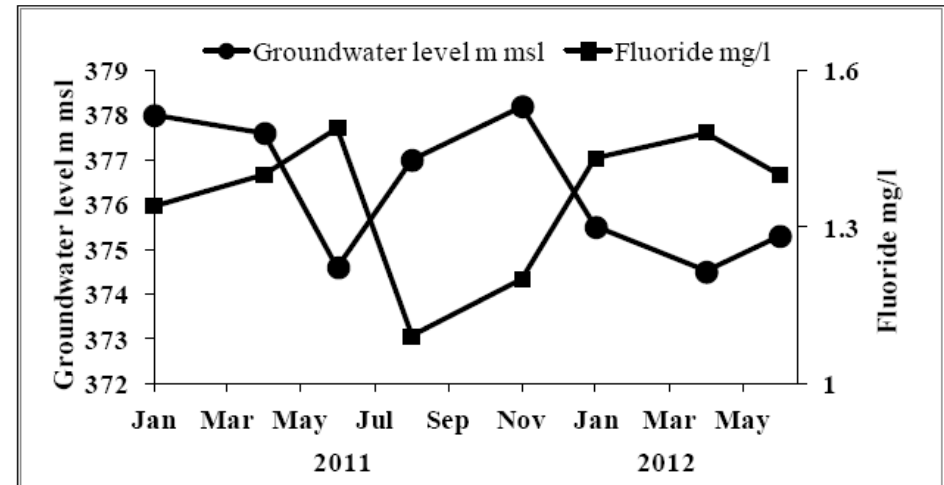
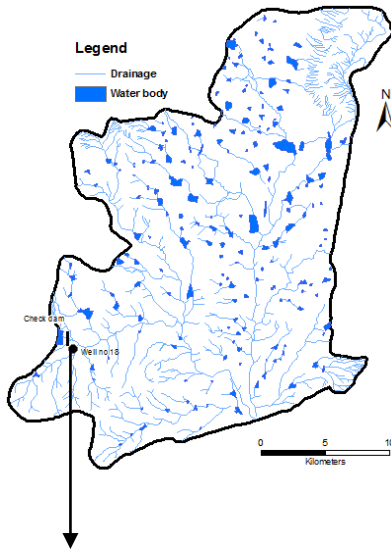
# Results



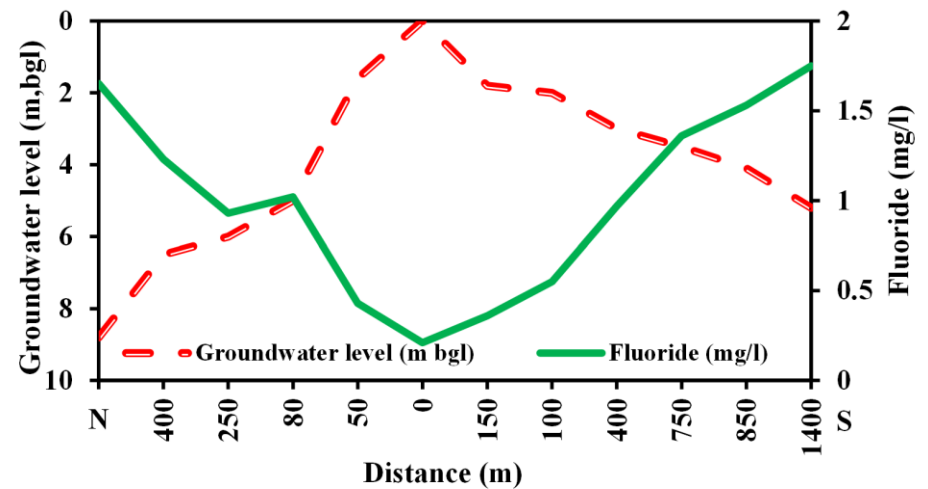
- Developed a index to identify suitable sites for MAR to mitigate geogenic fluoride contamination: **FIMAR**



# Results



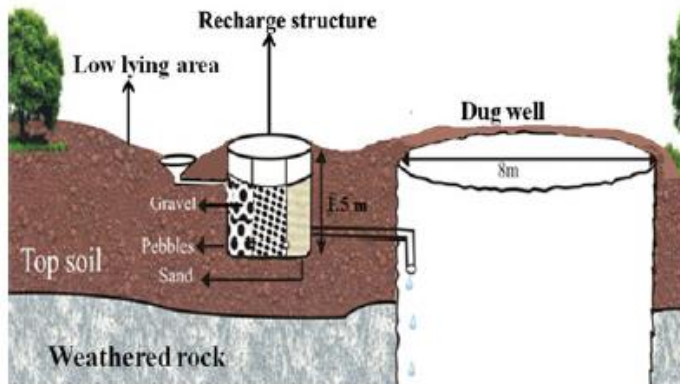
Temporal variation in groundwater level and fluoride concentration in the monitoring well located near the check dam



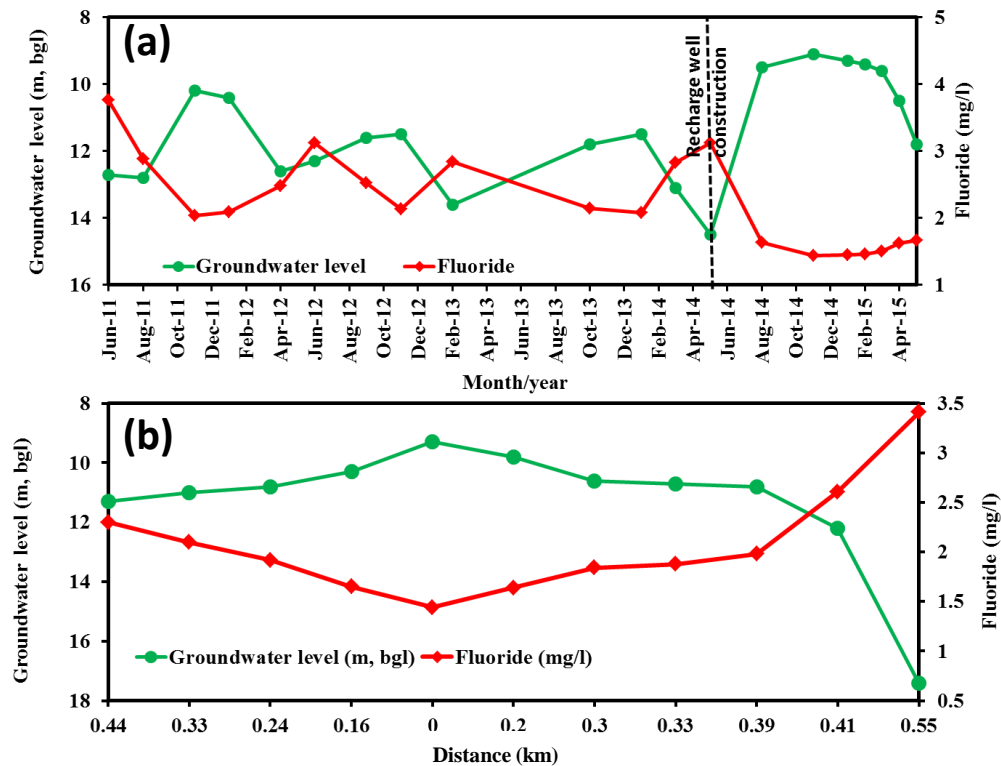
Groundwater level and fluoride concentration in wells on both banks of the river at different distances from the check dam



# Results

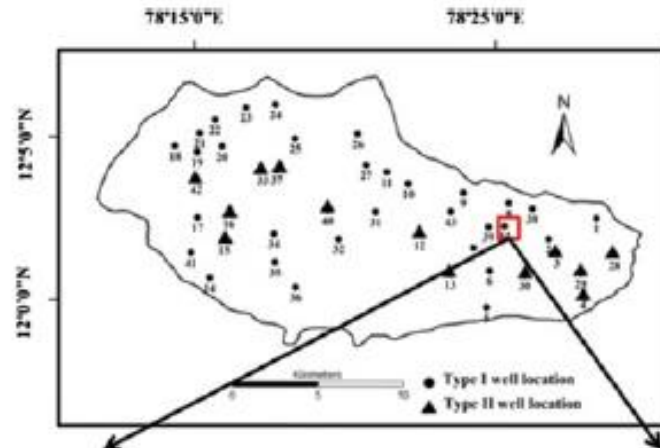


Conceptual diagram of induced recharge structure



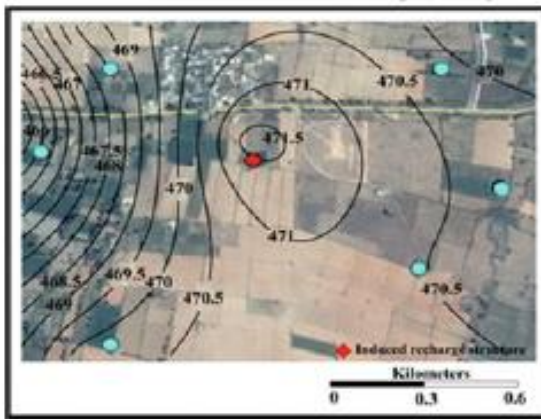
(a) Temporal variation in groundwater level and fluoride concentration in a monitoring well before and after the construction of the recharge well (b) Groundwater level and fluoride concentration in wells on both sides of the recharge structure at different distances

# Results

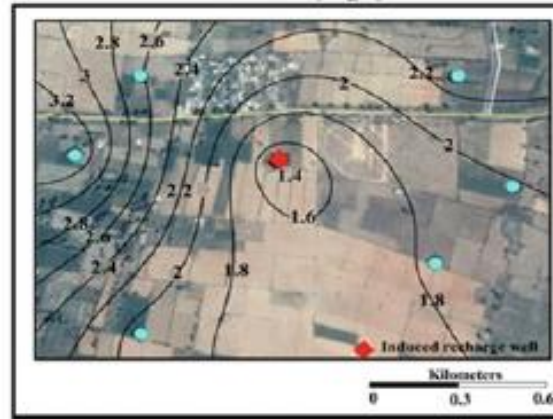


The induced recharge from the structure constructed benefited an area of about 1 km<sup>2</sup>

Groundwater level (m, msl)



Fluoride (mg/l)



Concentration of fluoride variation in groundwater of neighboring induced recharge structure well

# Thank you

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**Geo.X**

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