

# Importance of Groundwater in The Nilgiris district



# Why is groundwater important?






*What is groundwater????*







*Ways in which  
groundwater is  
tapped*

AQUIFER

*Resource that  
feeds different  
sources*





*What is behind  
a spring?*

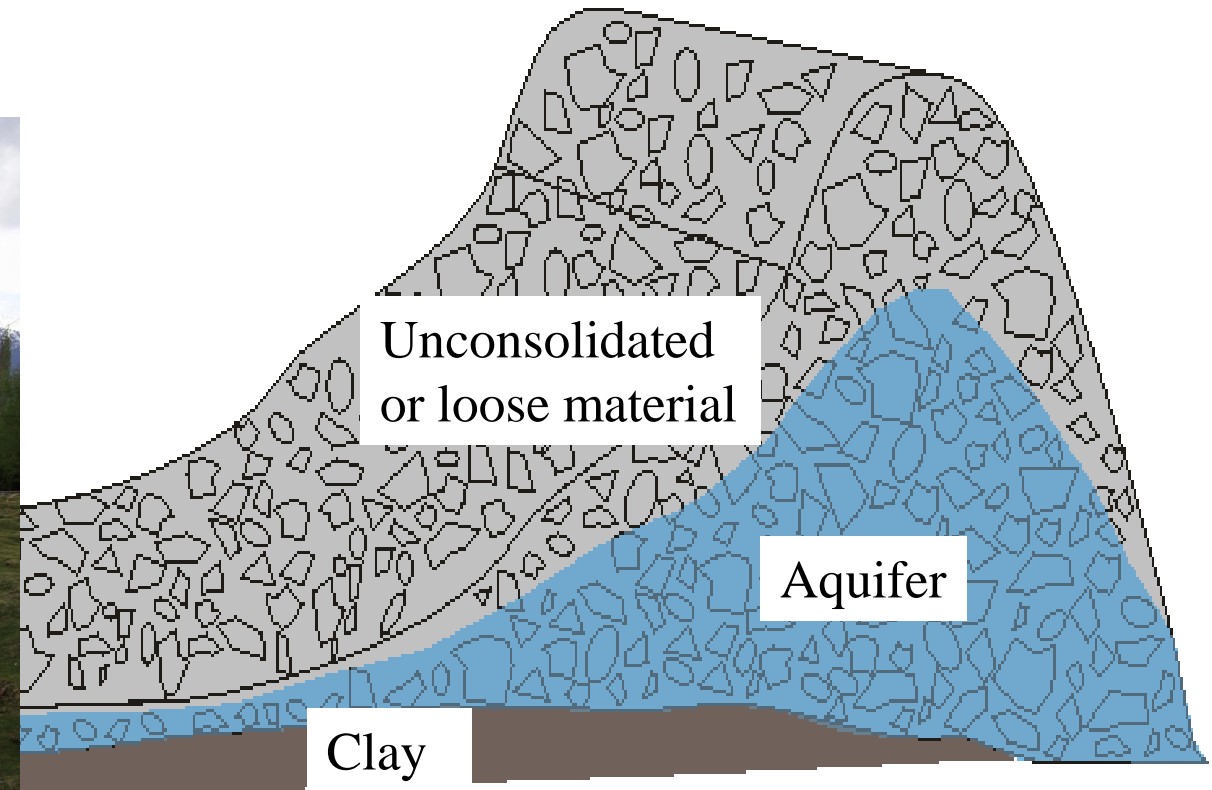


An “exposed” aquifer...



Springs! But  
what else??







*Aquifers* are rocks or rock material that can allow groundwater to *store* in it and *move* within it such that it is made available to *wells*, *springs* and *bore wells*





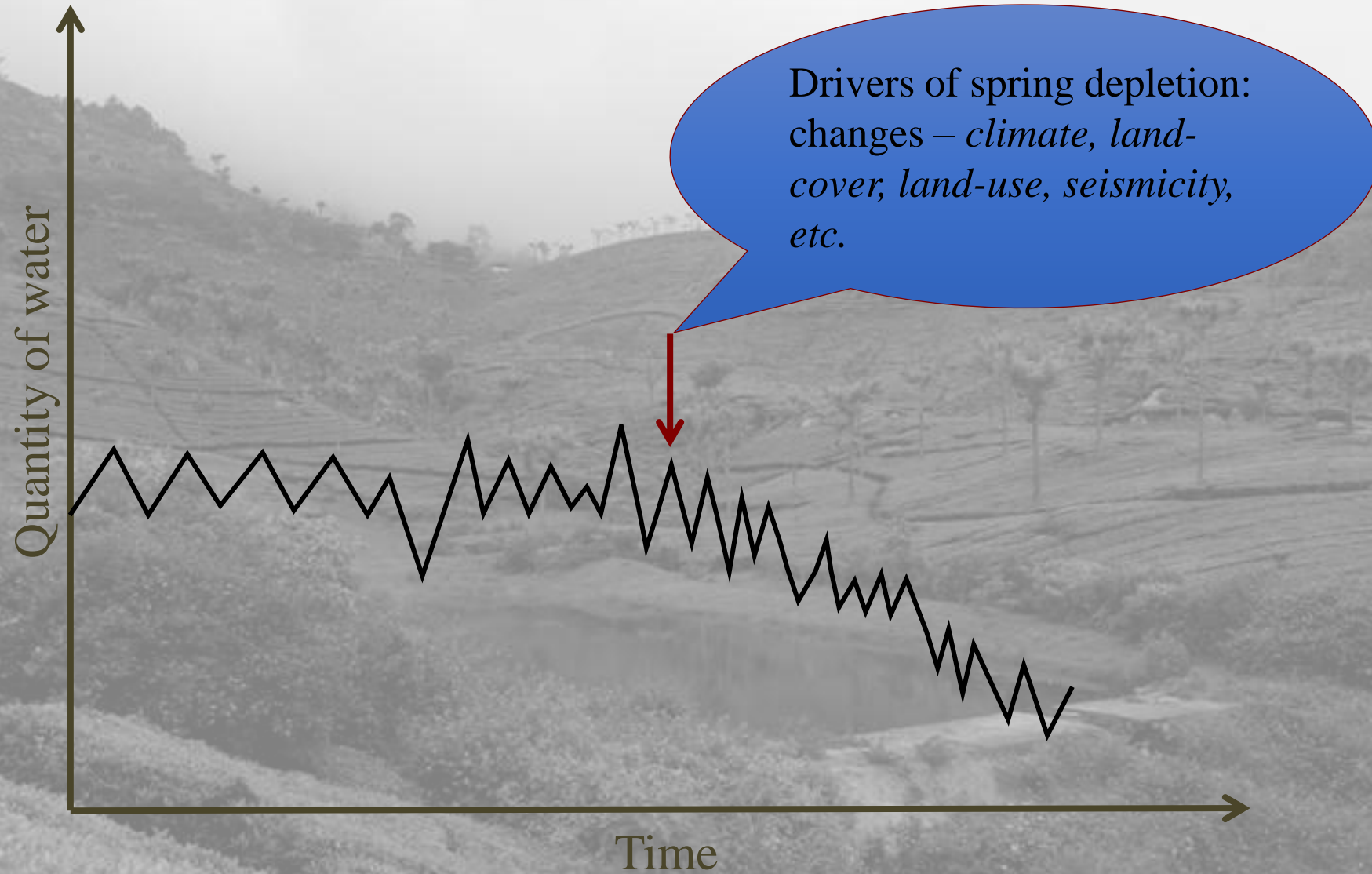
# What are springs ?????



- Springs are locations or points on the ground surface, where water from beneath the ground emerges on to the surface
- Points of Groundwater Discharge

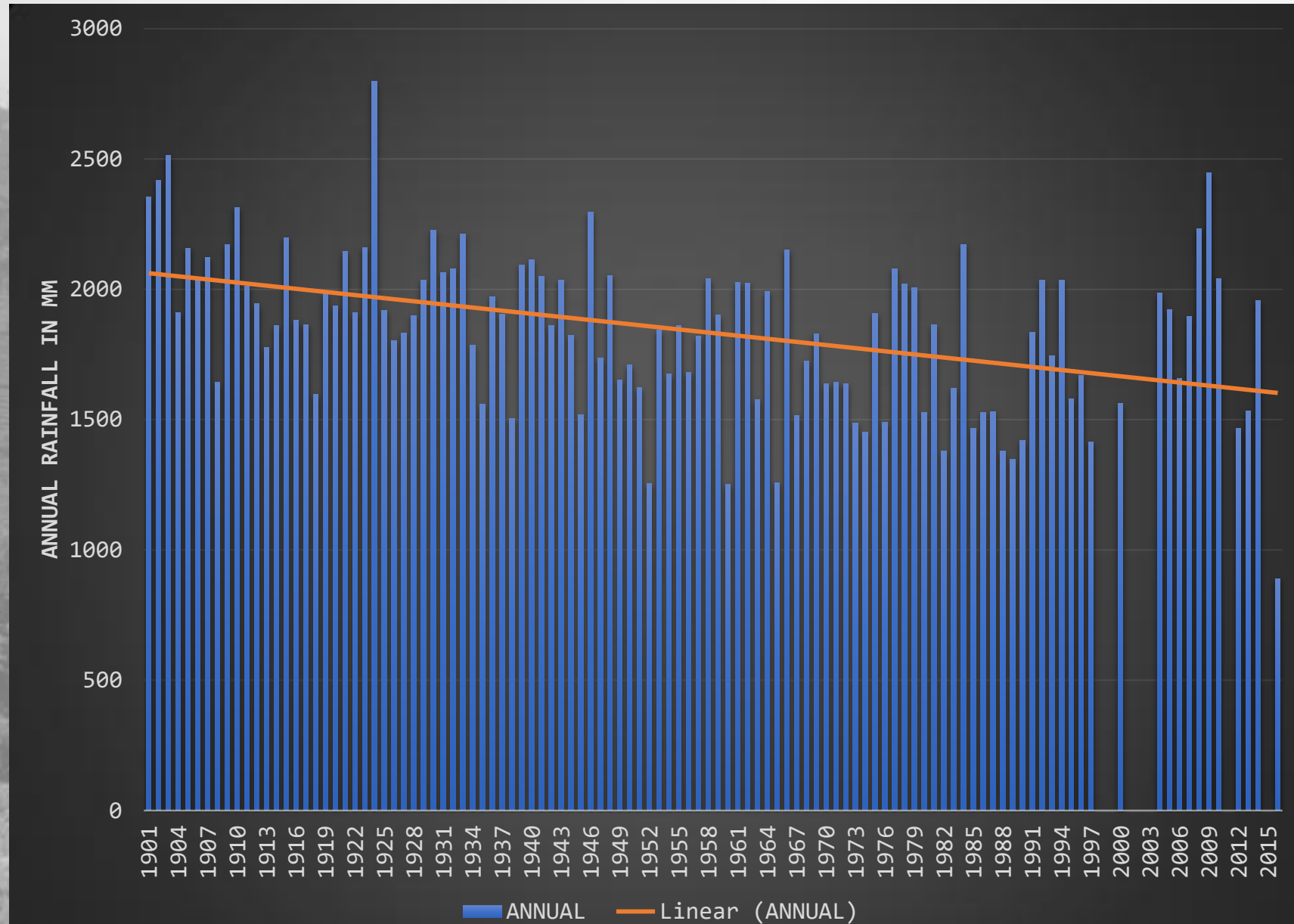


## Spring discharge: reports reduction





# Rainfall in The Nilgiris district over 110 years



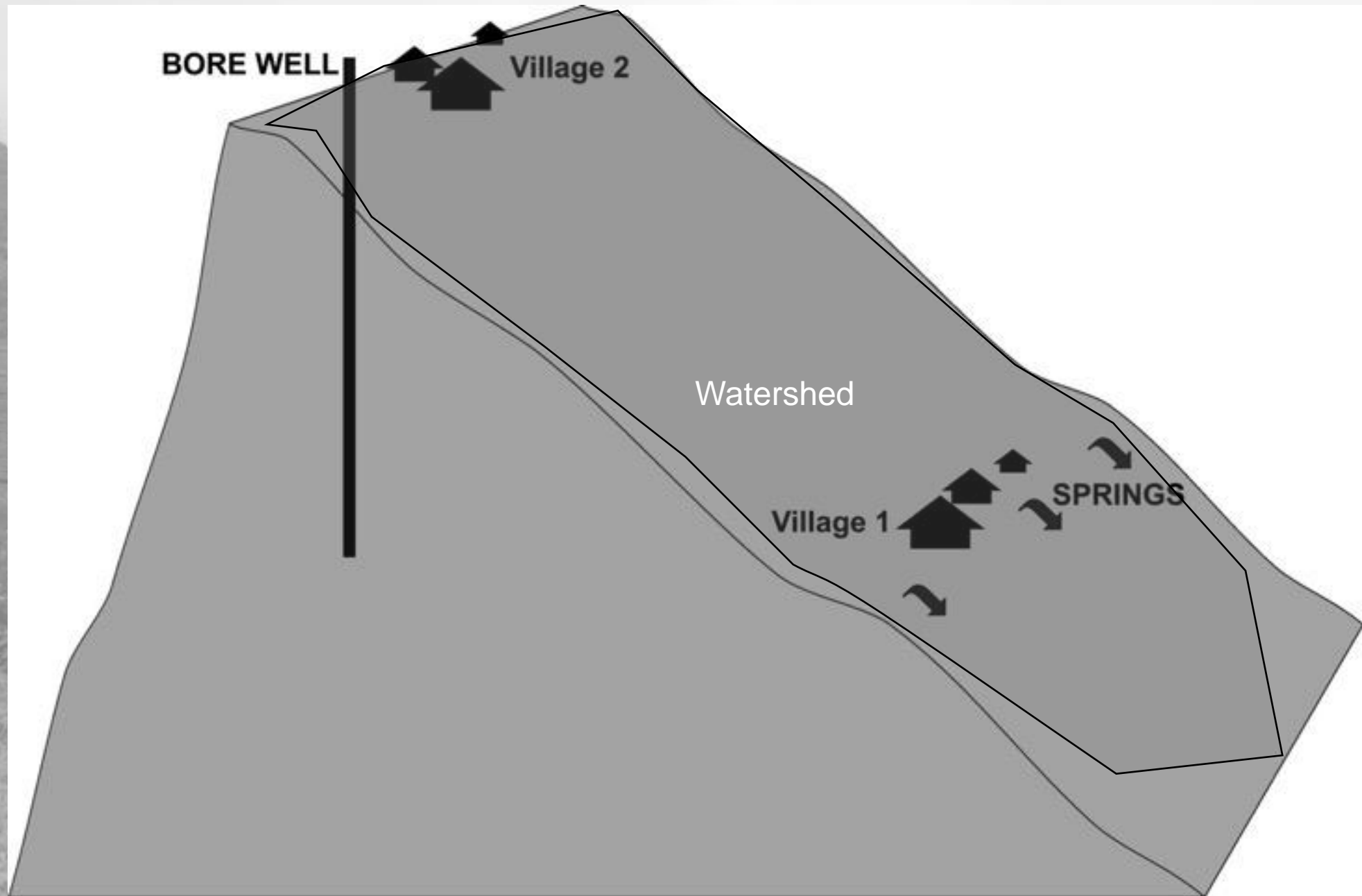
Source – IMD, 2012



A photograph of a lush, green forested hillside. The foreground is filled with dense, tangled branches and green foliage. The middle ground shows a thick canopy of trees covering the slope. In the background, the top of the hill is shrouded in a thick layer of white mist or fog. A large, blue, cloud-like thought bubble is positioned in the upper right corner, containing white text. A small blue circle is located just below the main bubble.

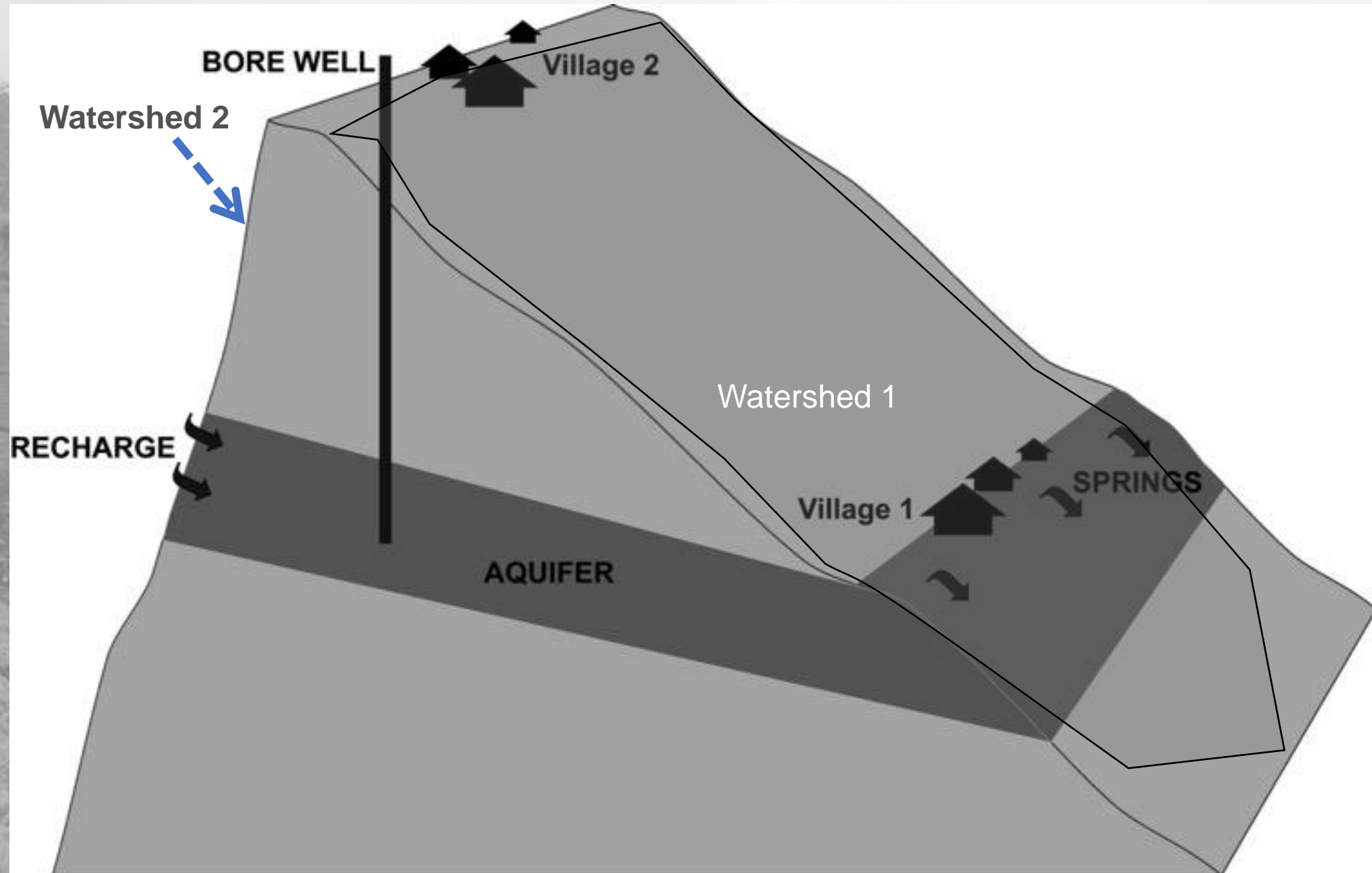
*Changes in the  
land use and  
land cover*





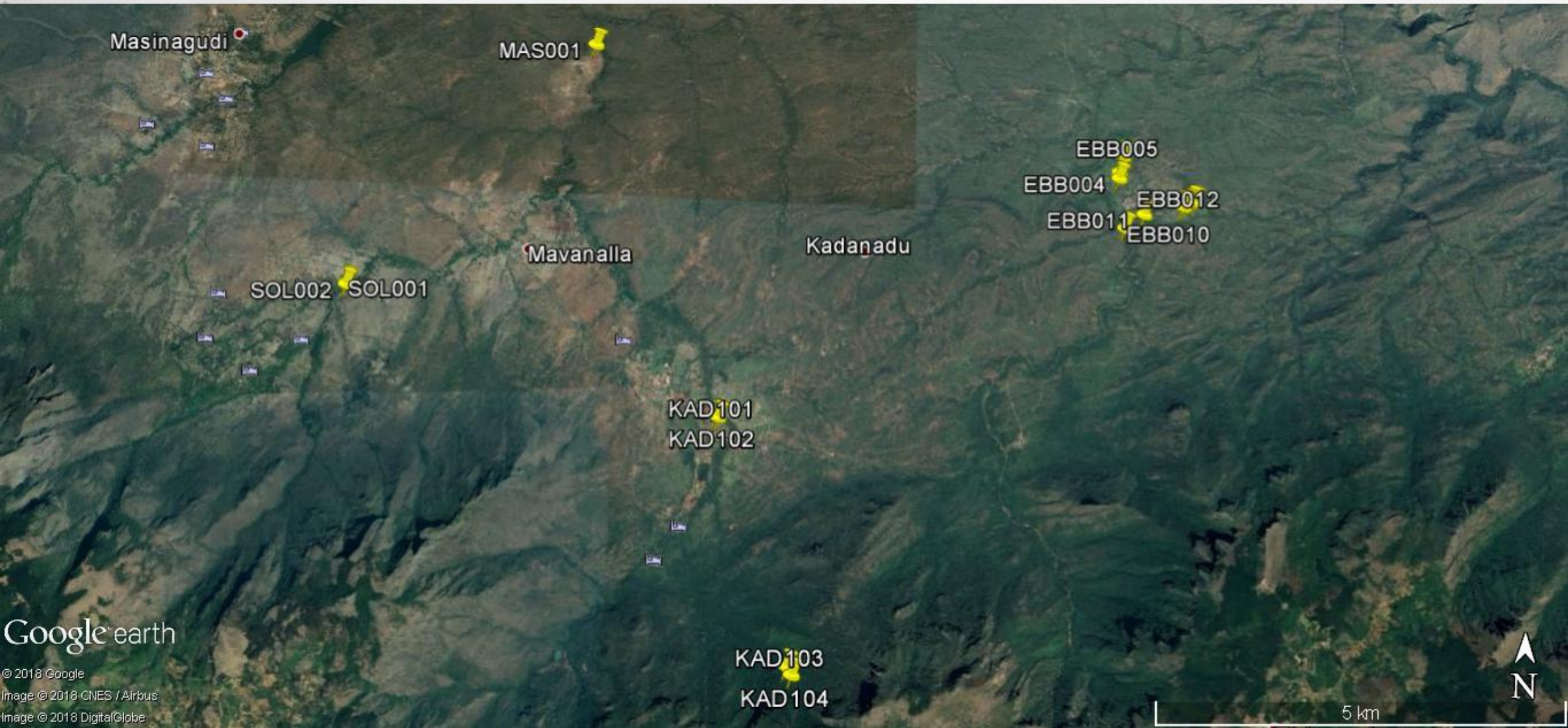


# Moving from sources to resources

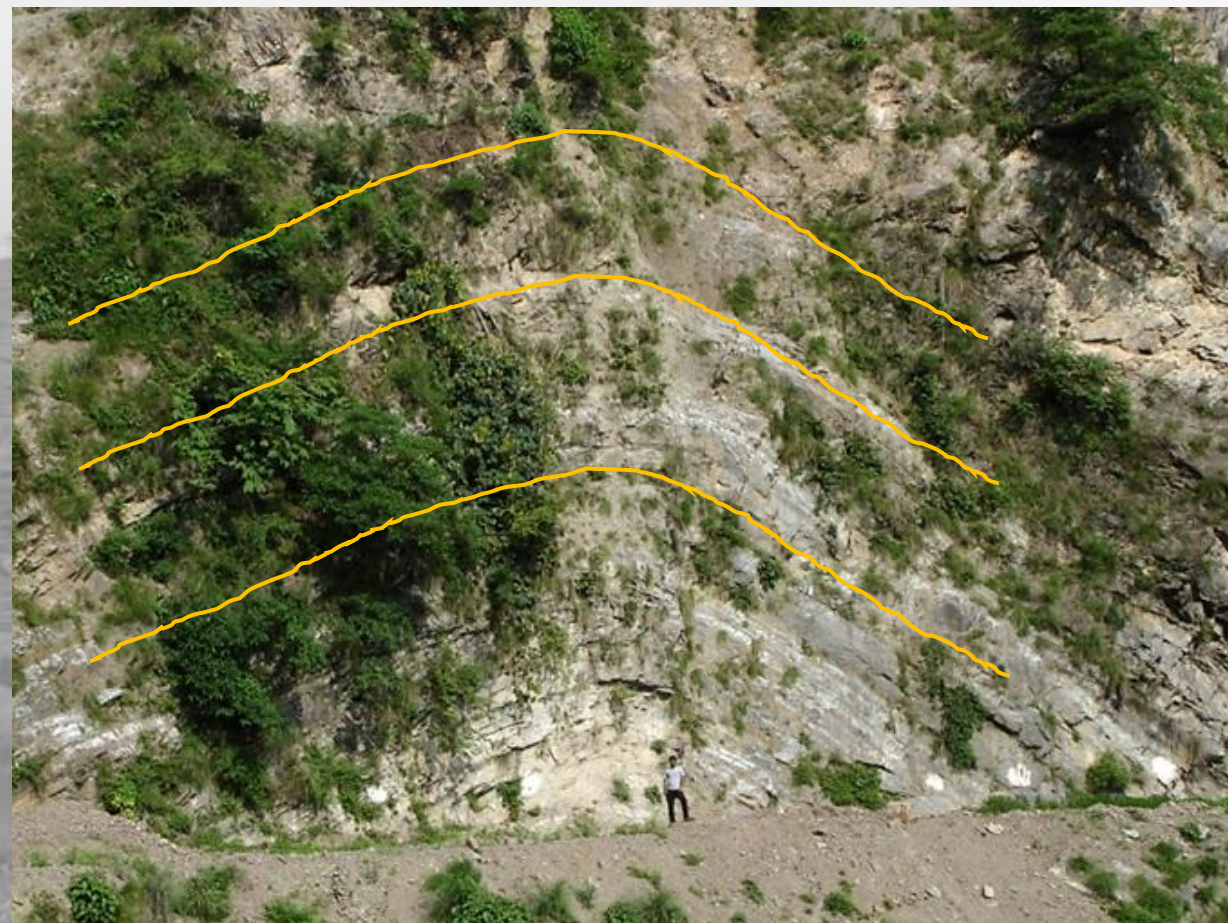




# Spring inventory











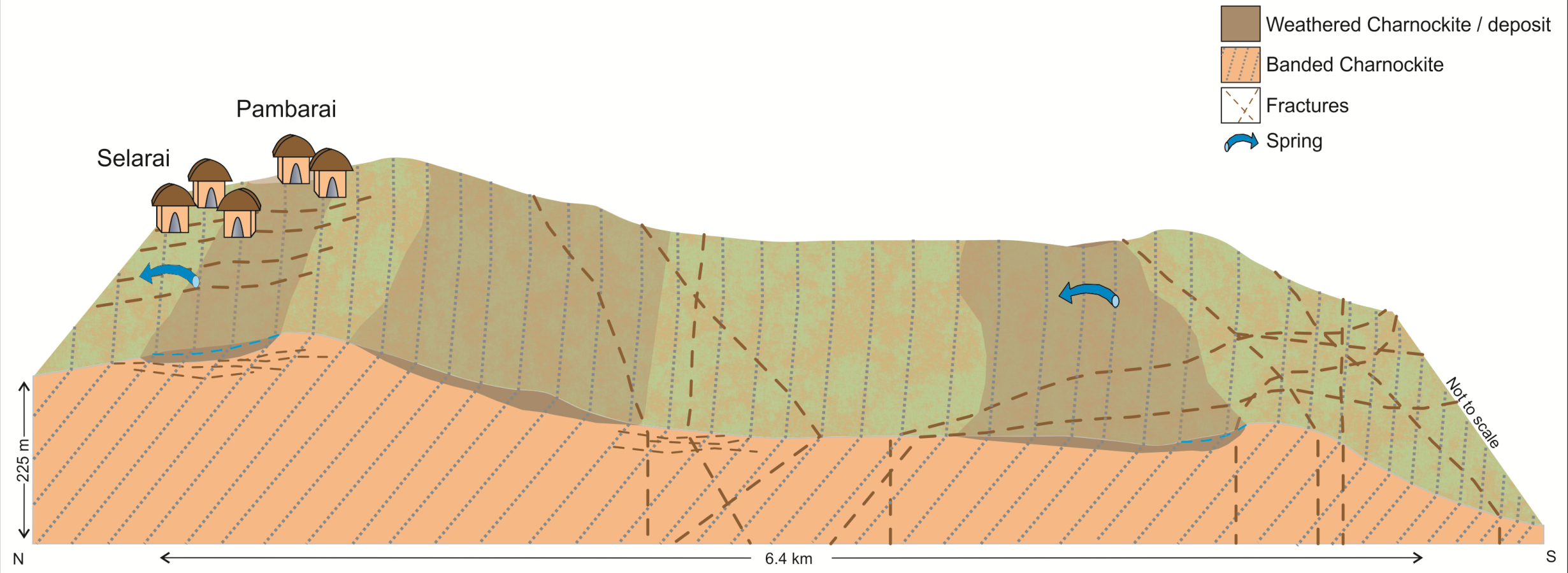


# Understanding *hydrogeology* is the first step towards spring management



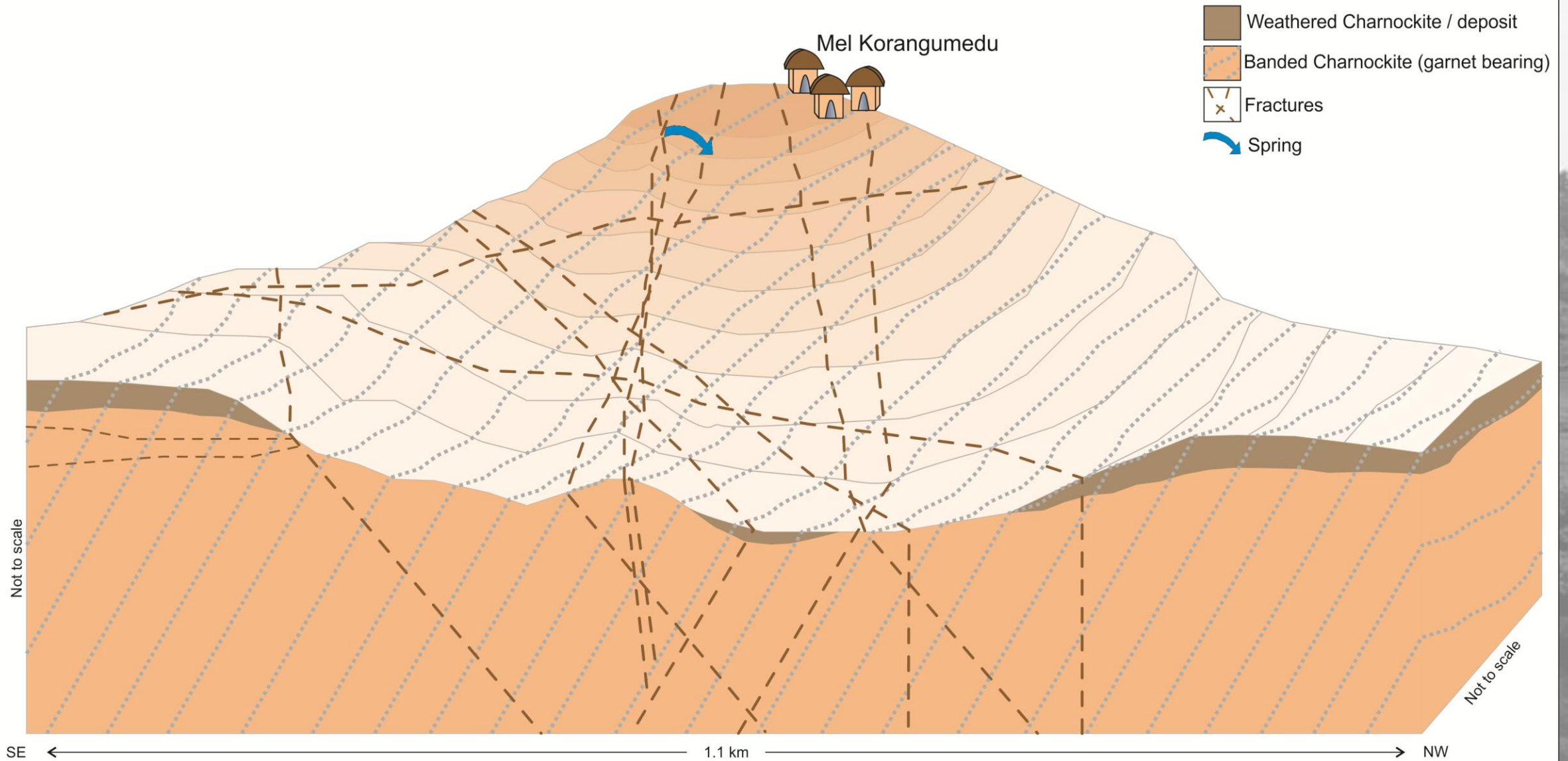


## Conceptual layout of Aracode region



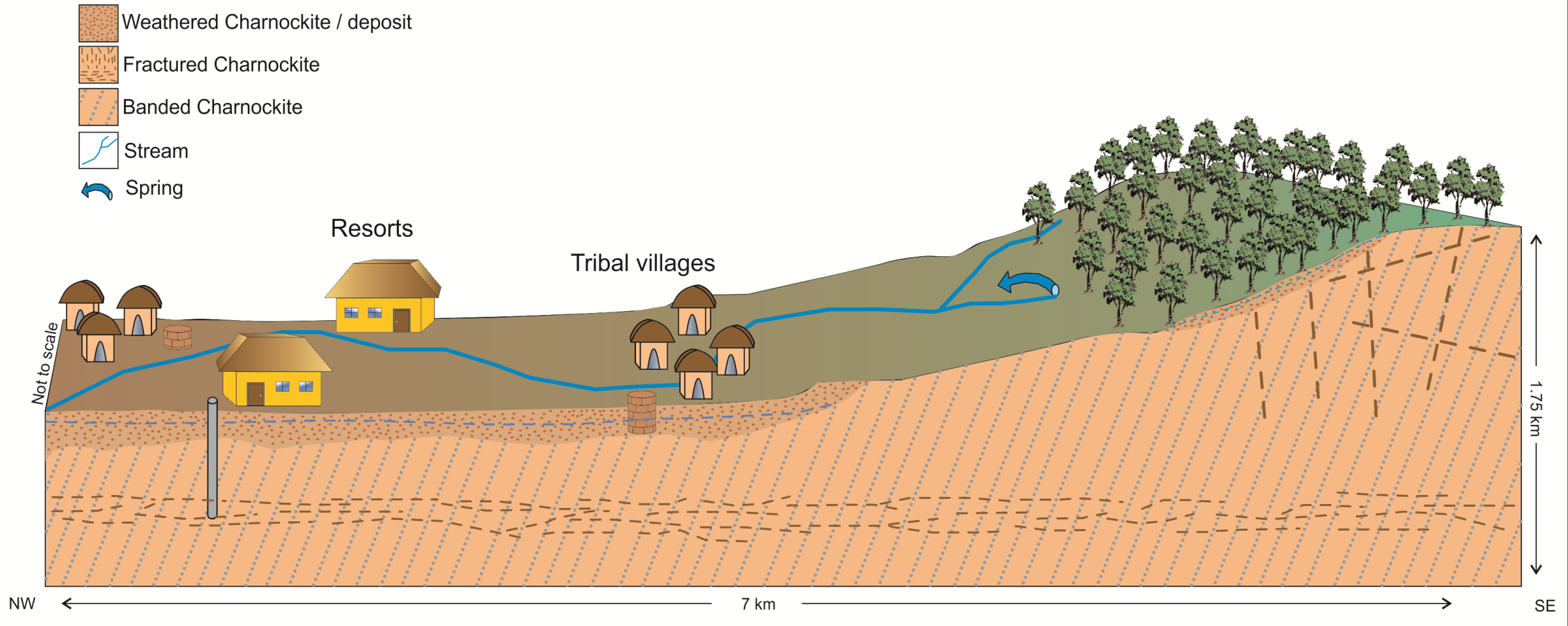


# Conceptual layout of Coonoor region

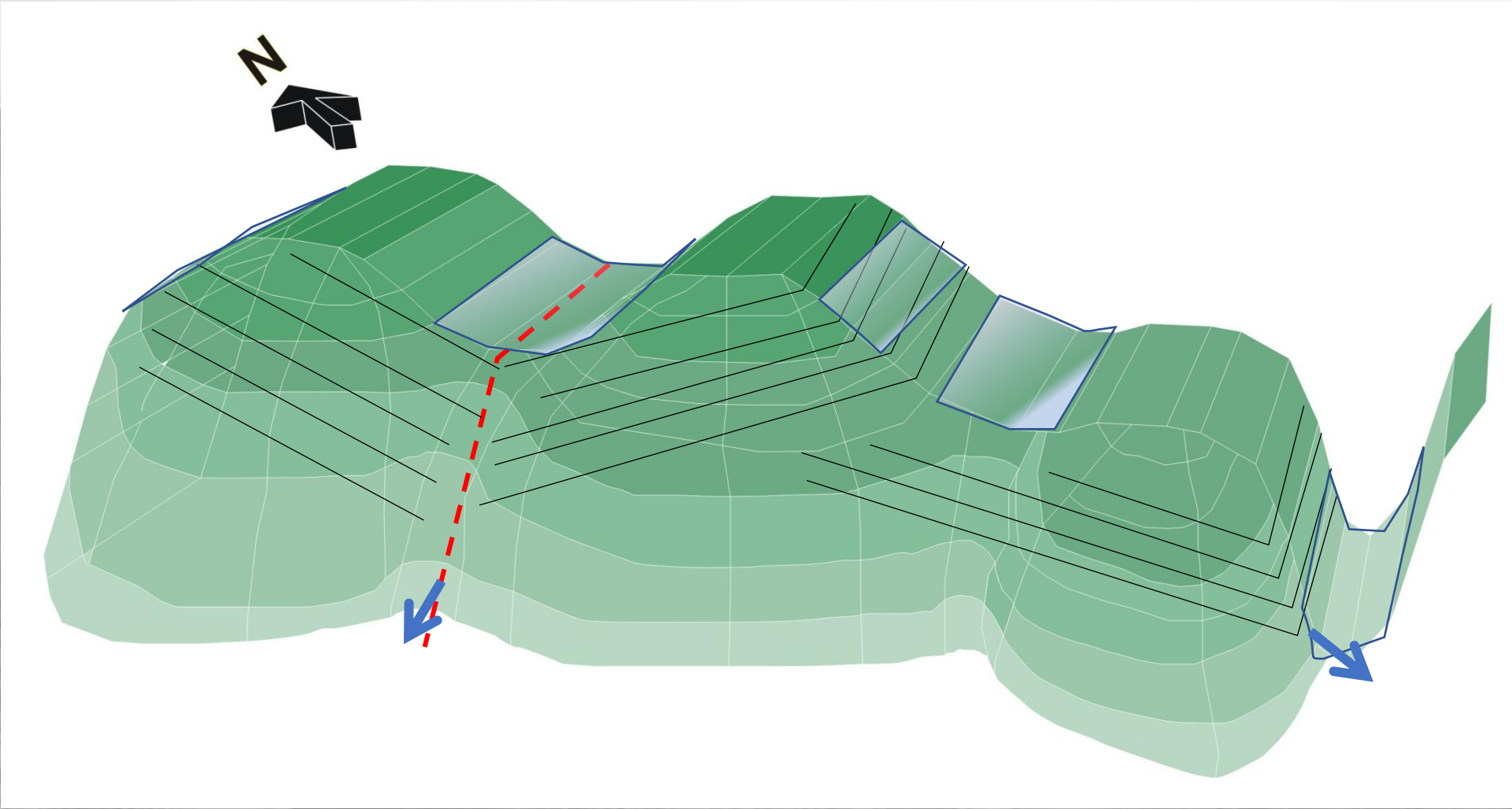




## Conceptual layout of Sigur region

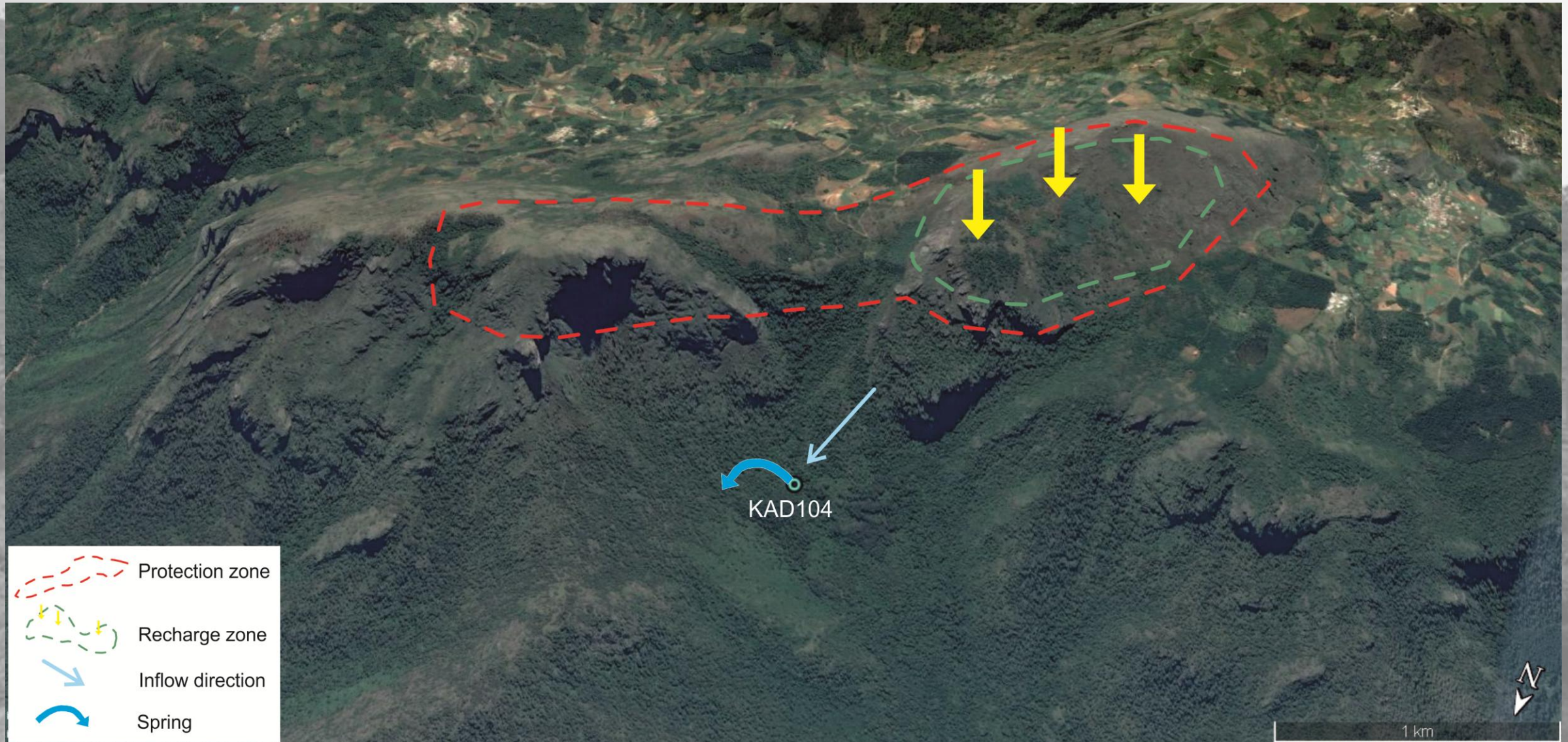




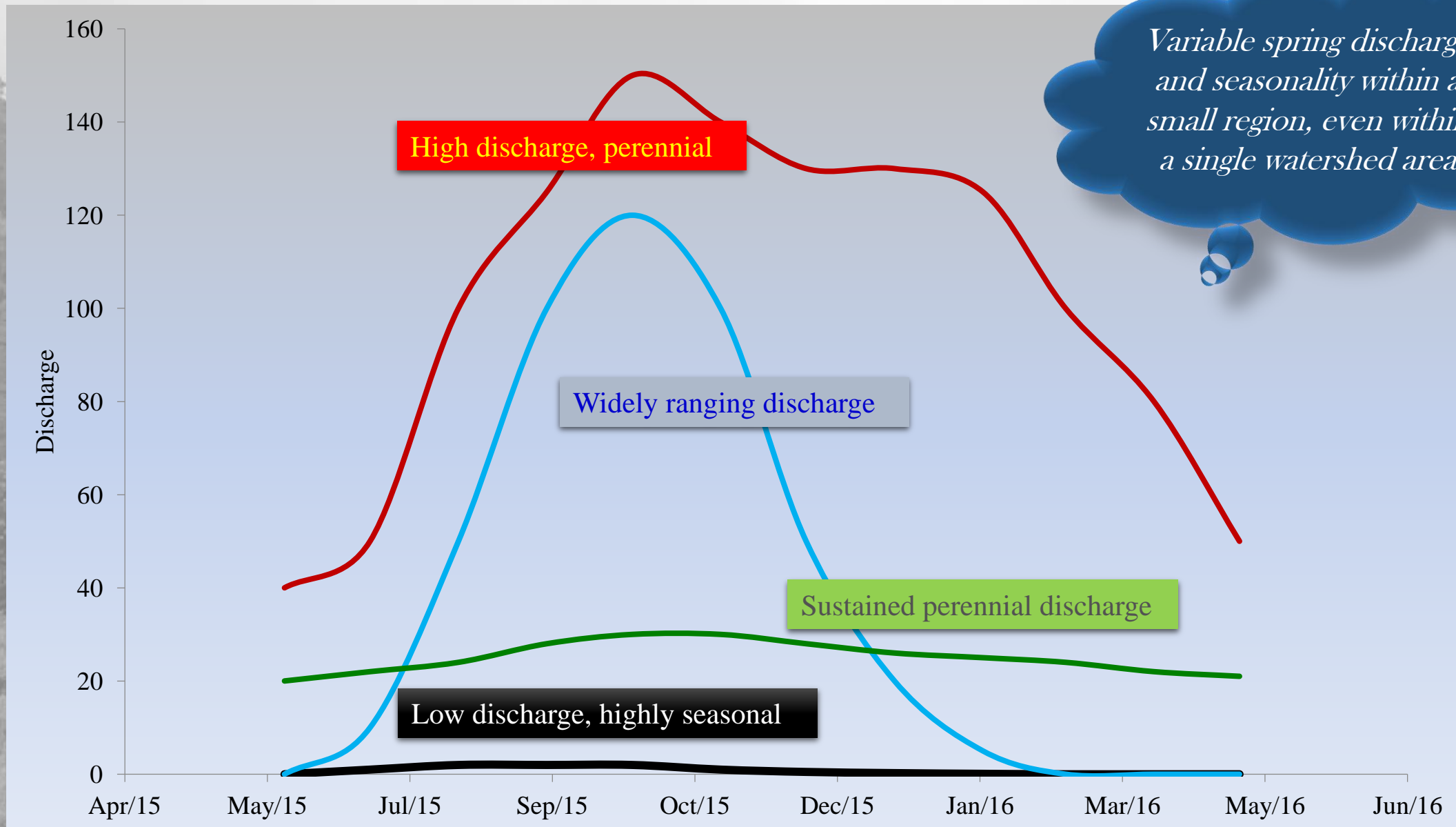




# Hydrogeology helps identify recharge areas



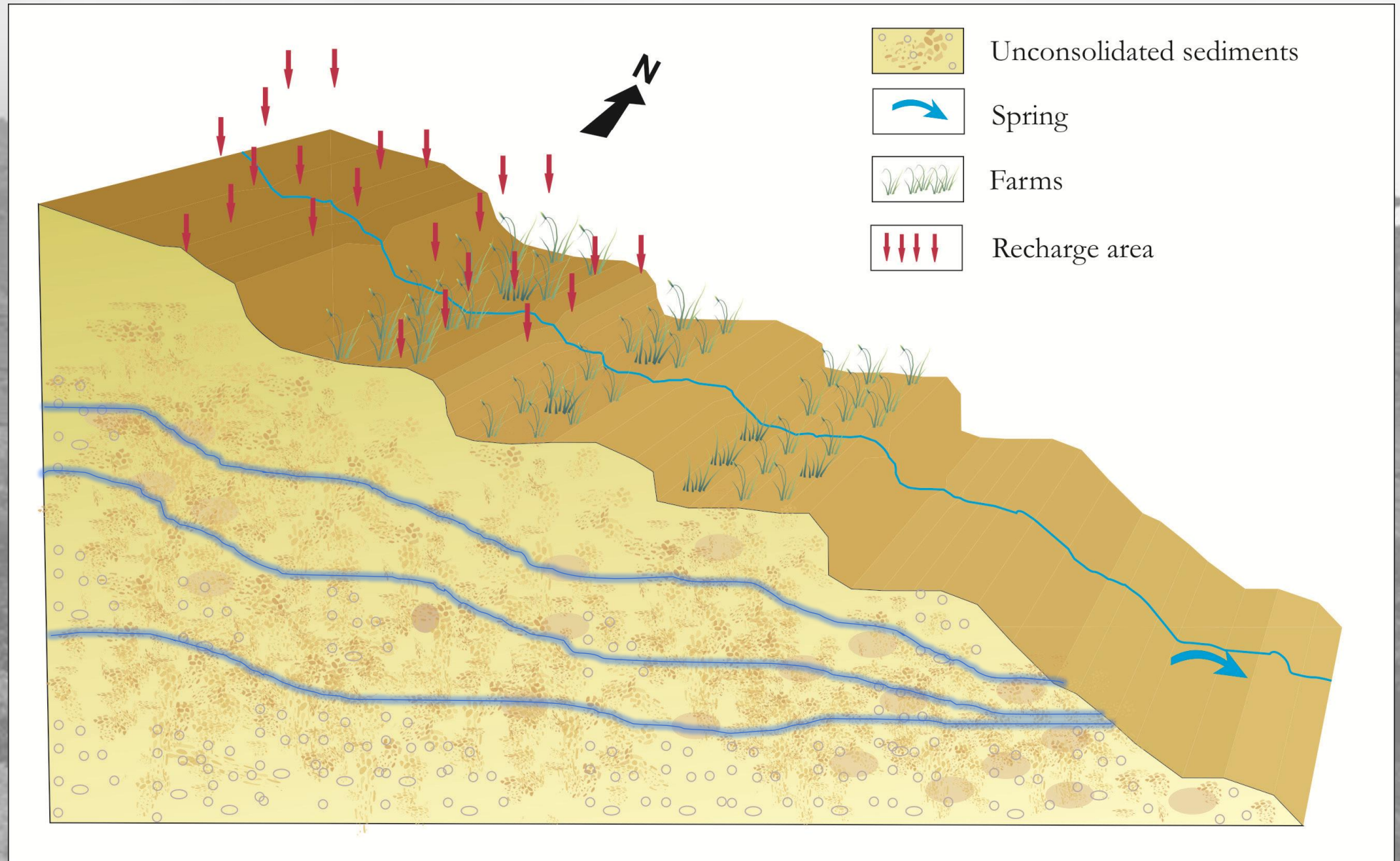




*Variable spring discharge and seasonality within a small region, even within a single watershed area*

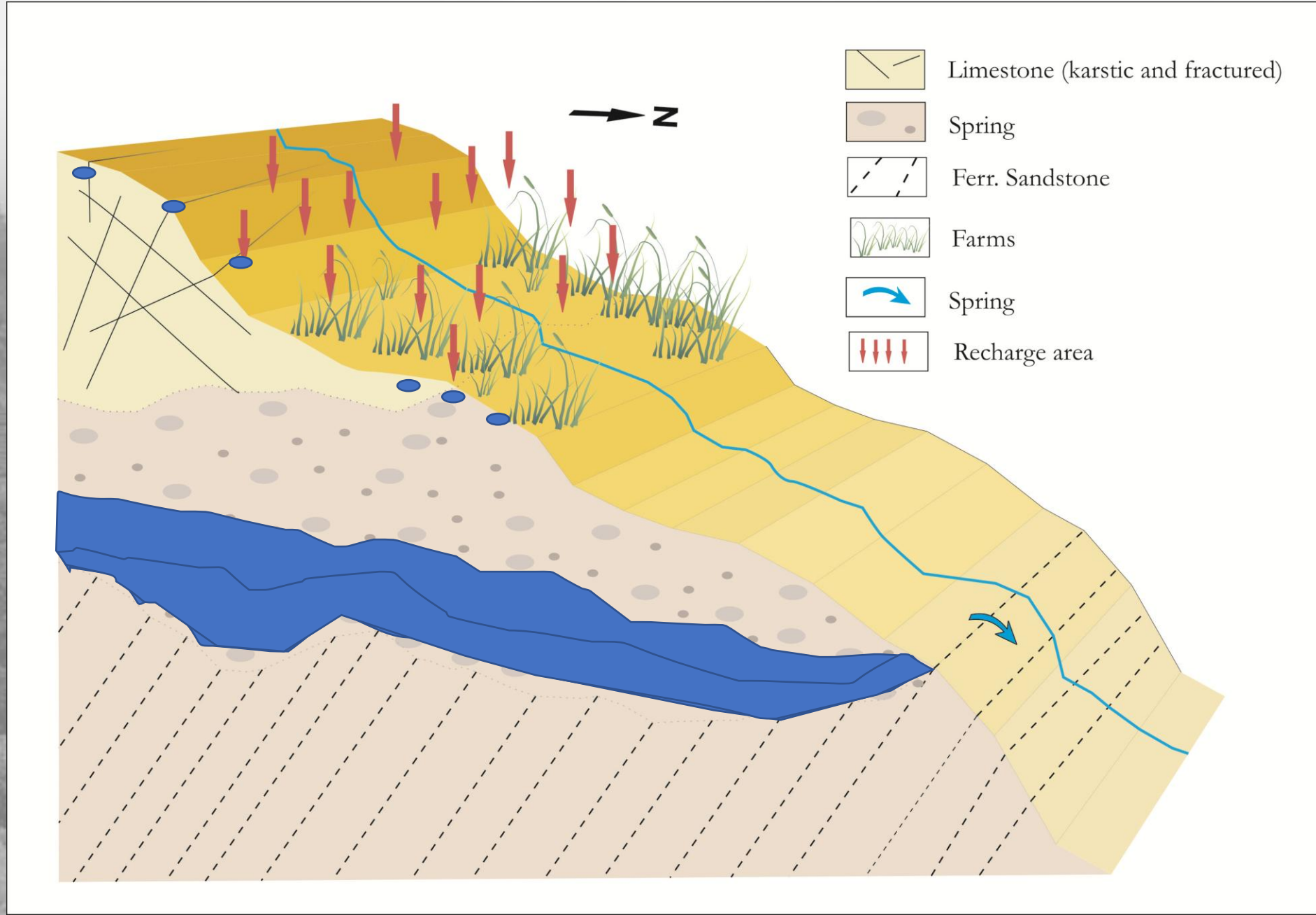


# Depression Spring



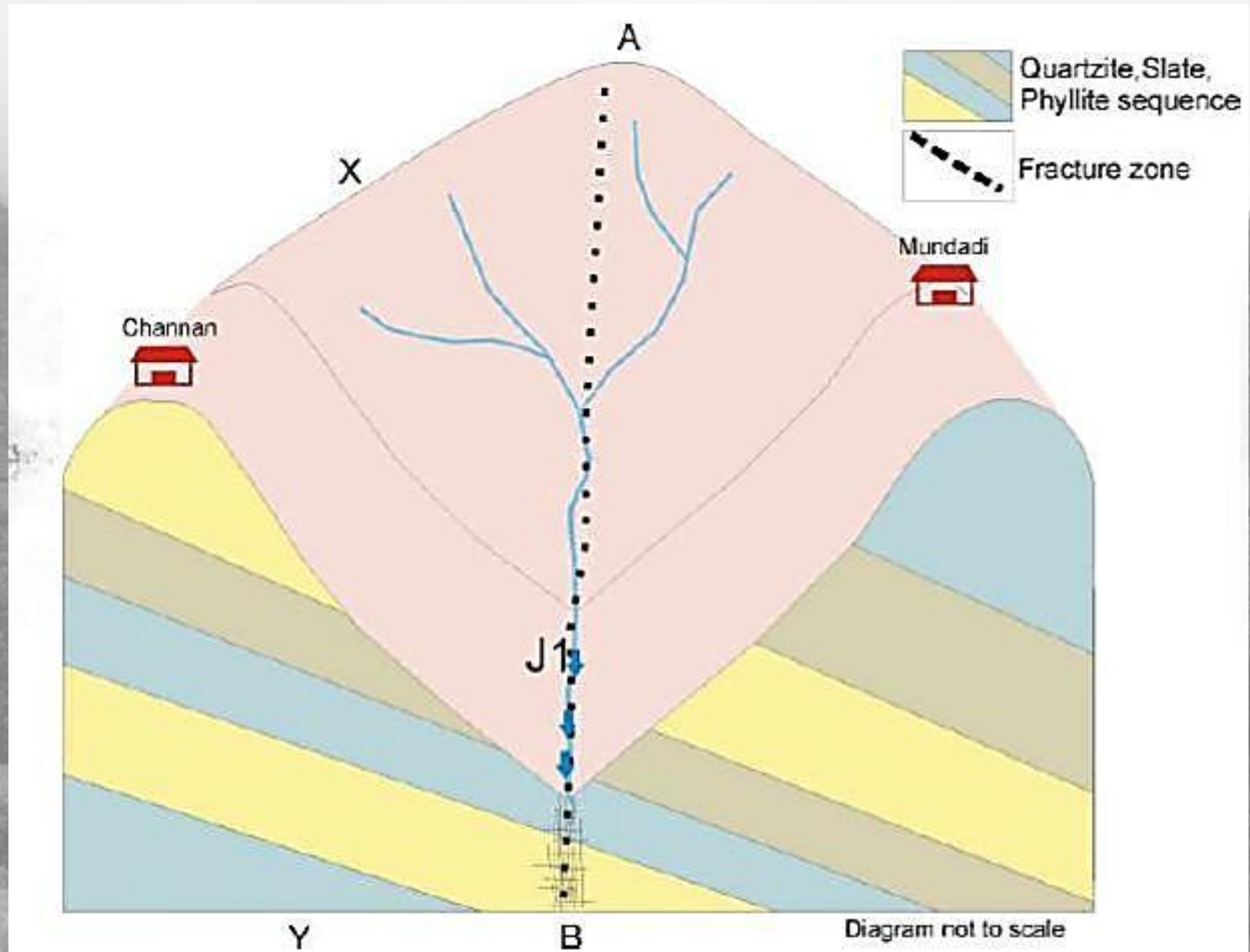


# Contact Spring





# Fracture Spring







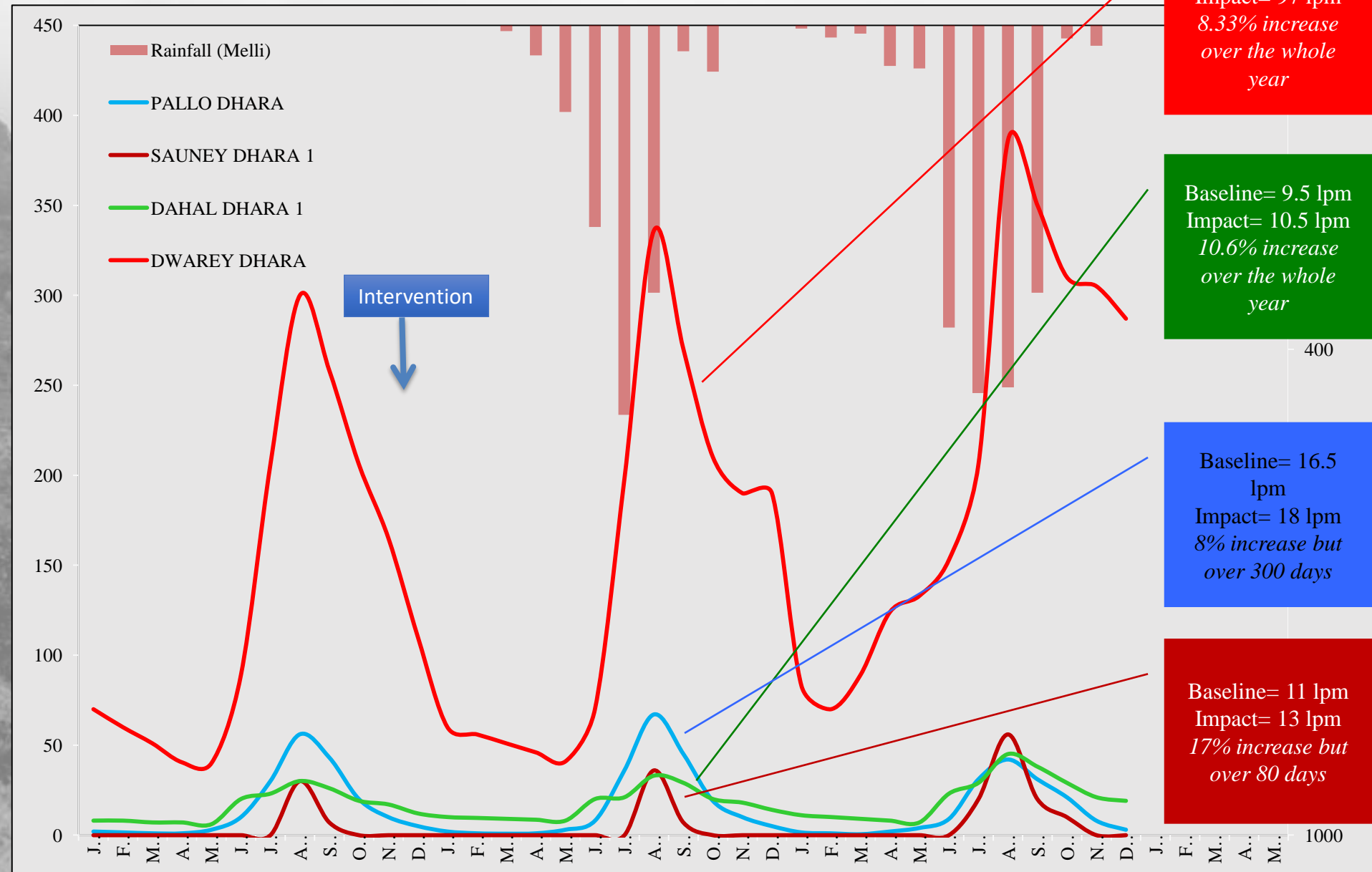


# Monitoring different sources



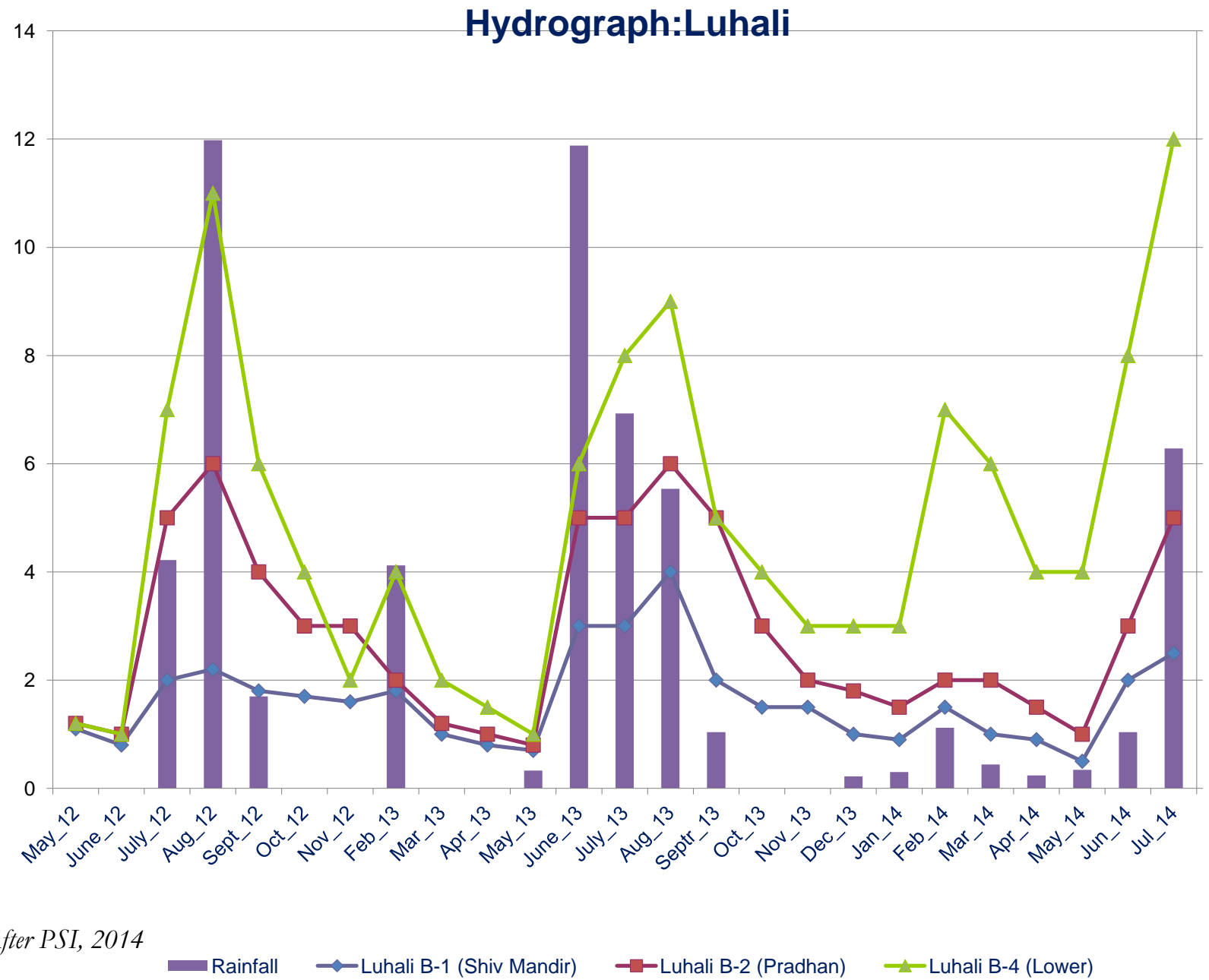


# Impact assessment and management of spring water



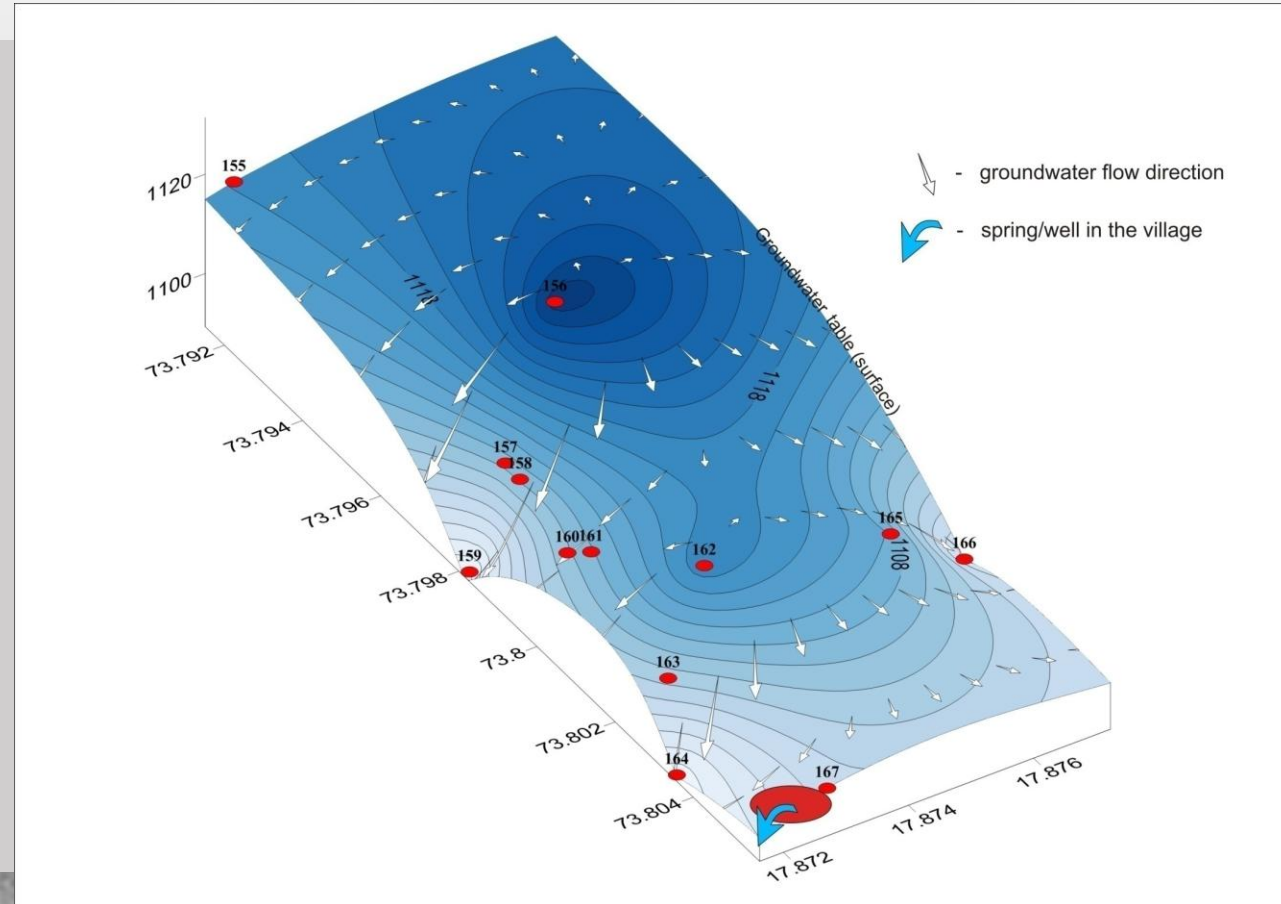
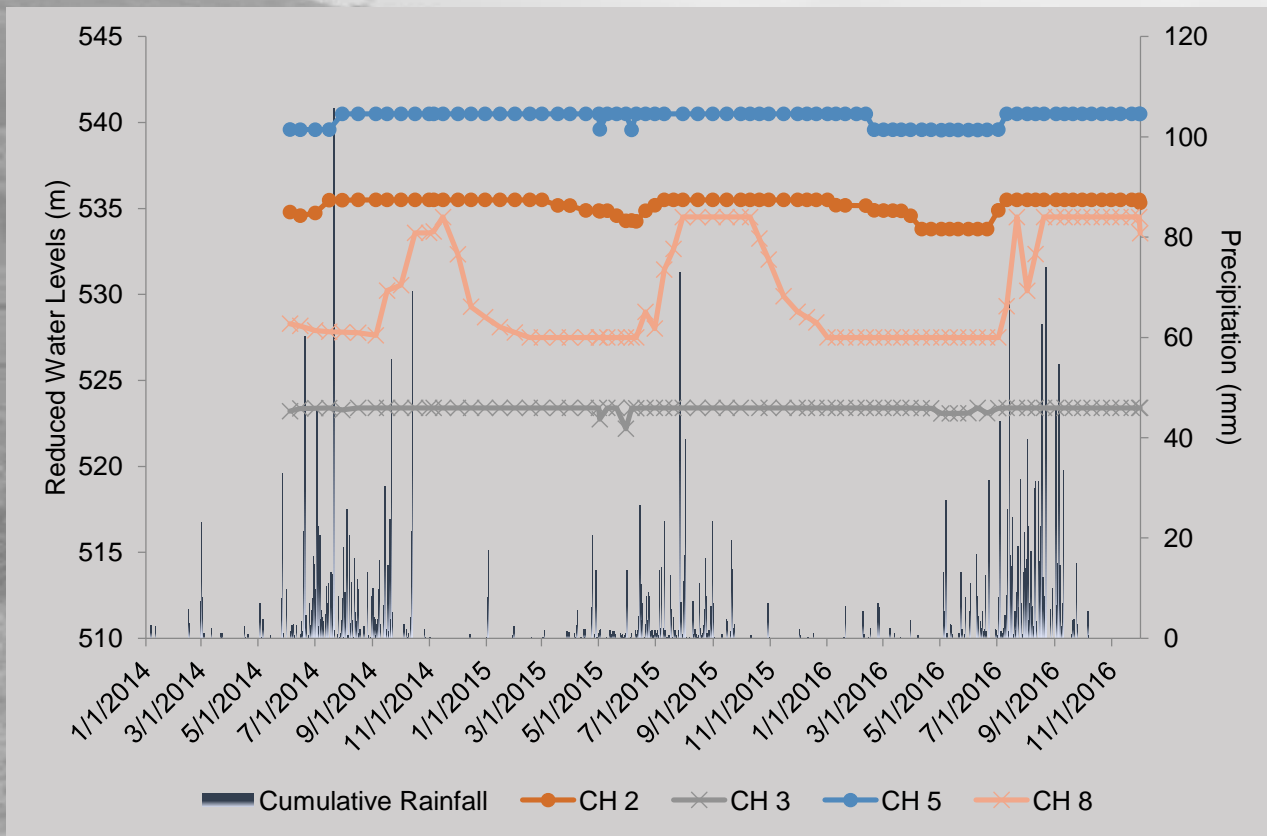


# Spring hydrographs



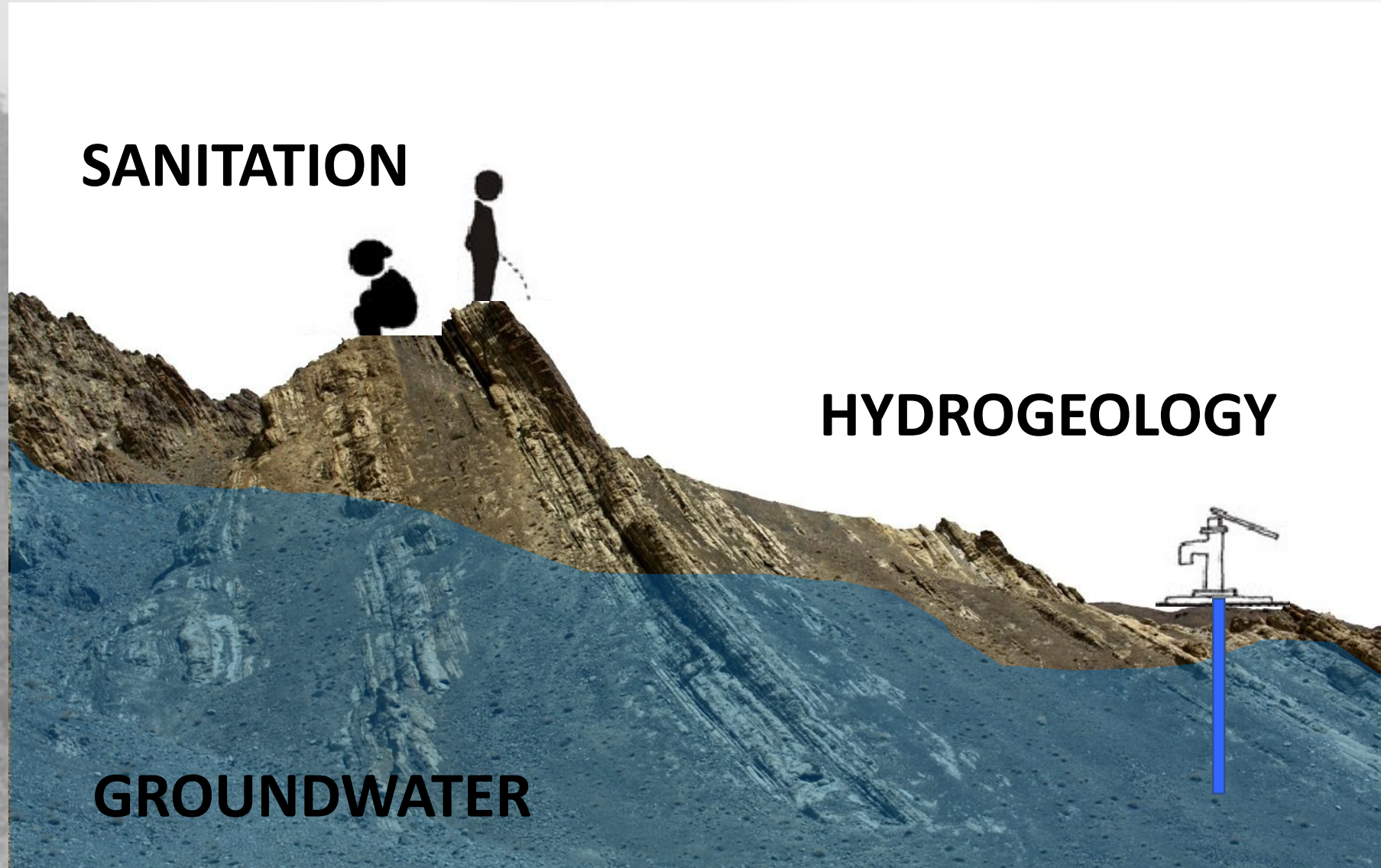


# Well hydrographs



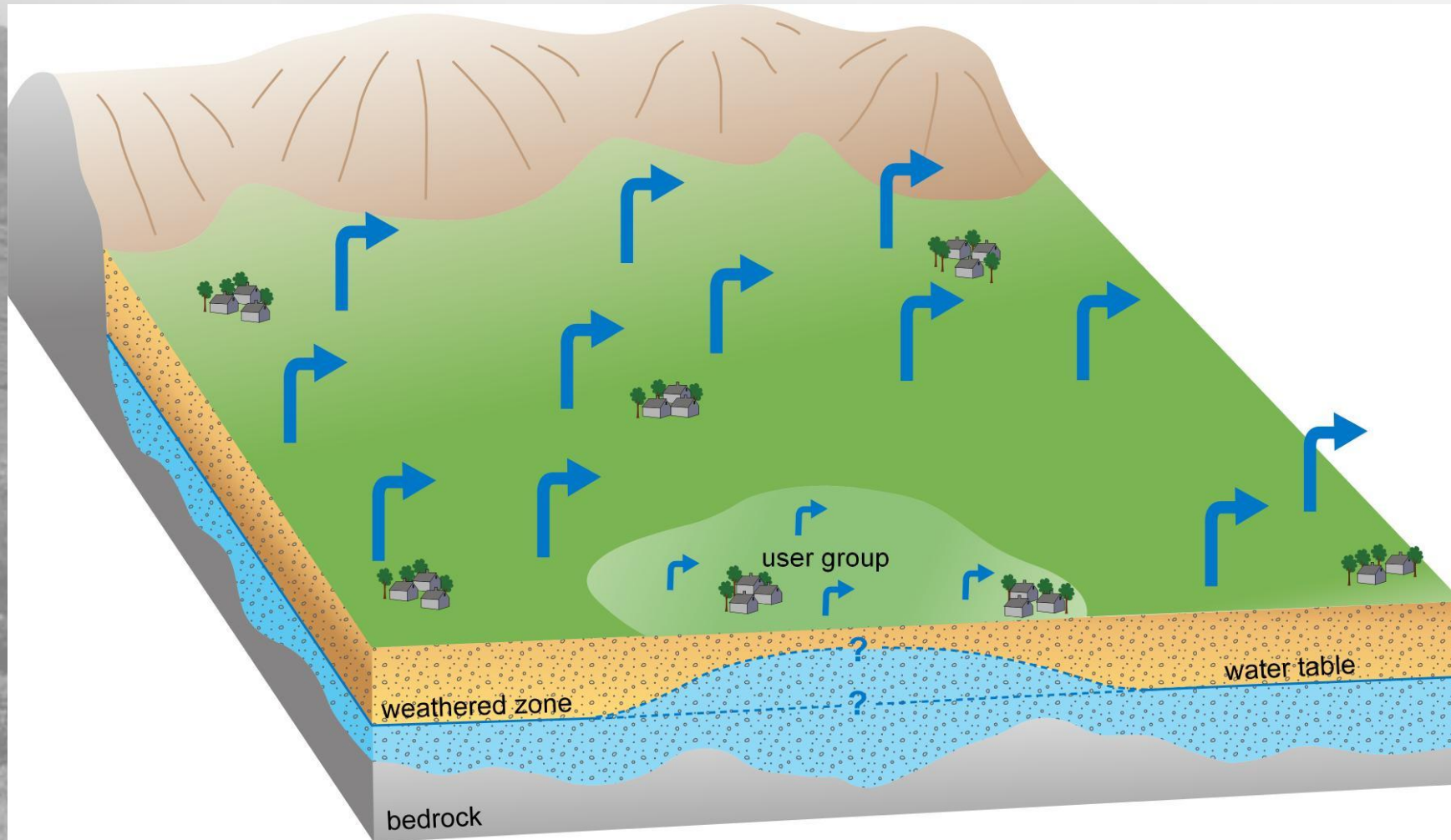


# Water quality





# Socio-hydrogeology





# Springshed management





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