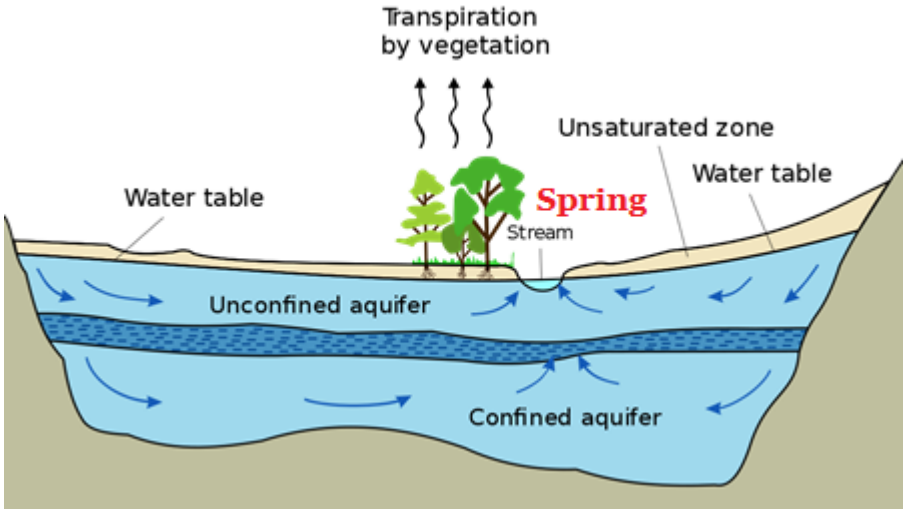
Reduction of springs in Himalayas

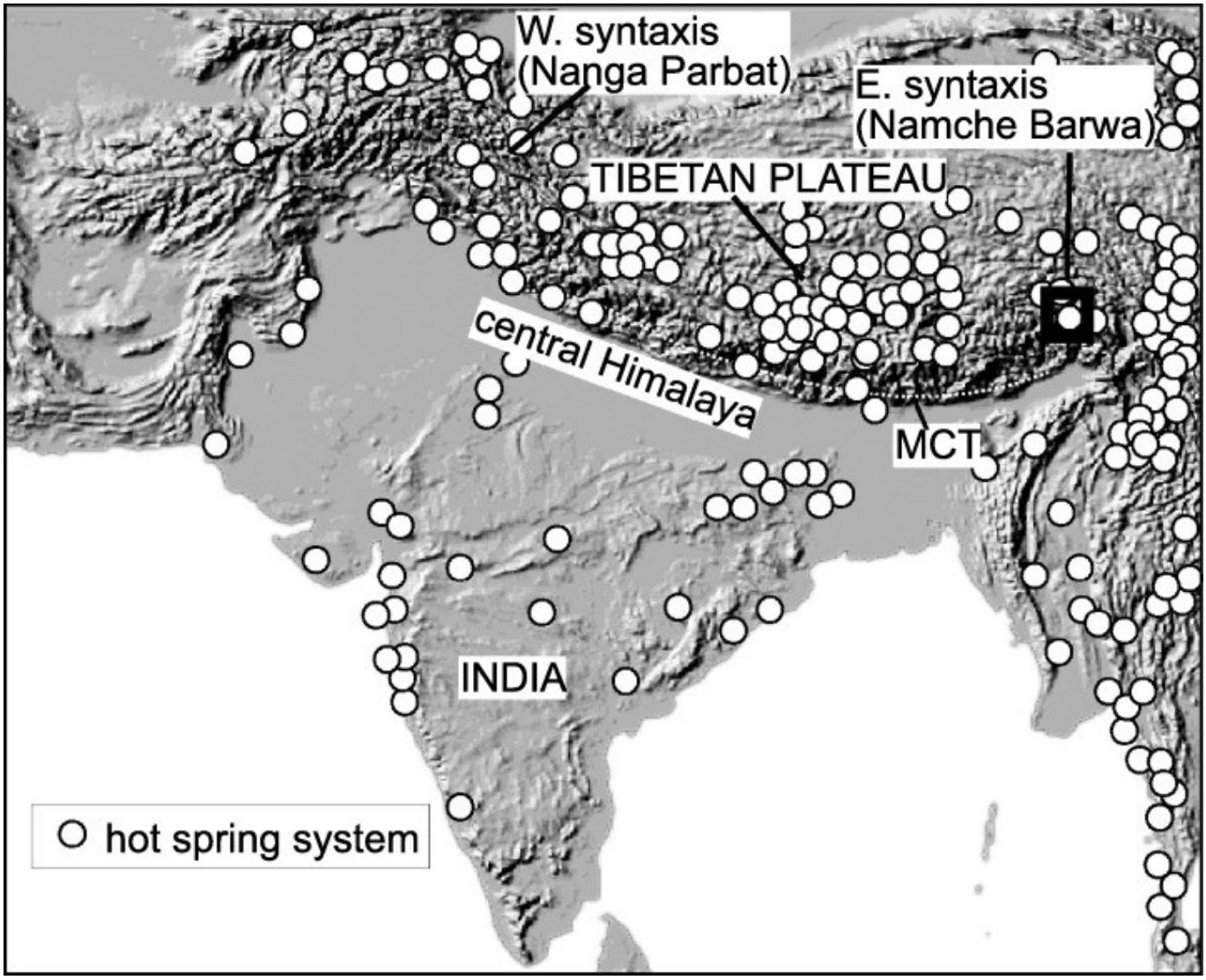
Why in news?

A Recent study showed that the spring system in Himalayan region, especially in Himachal Pradesh sees drop due to climate change

- **Springs –** It occurs when *water pressure causes a natural flow of groundwater* onto the earth's surface.
- **Mechanism** – As rainwater enters or "recharges" the aquifer, pressure is placed on the water already present.



- This *pressure moves water through the cracks and tunnels* within the aquifer, and this water flows out naturally to the surface at places called springs.
- **Hot springs** Spring with *water at temperatures substantially higher than the air temperature* of the surrounding region.
- **Causes of heating**
  - **Volcanic activity** – By shallow intrusion of magma
  - **Convective circulation** – Percolation of groundwater deep reaching hotter rocks
- **Hot springs of the Himalaya** – They are located in the ***zones of deep faults*** that define tectonic boundaries
  - **Indus Tsangpo Suture** – Between the Himalayan province and mainland Asia
  - **Main Central Thrust** – Between the Great Himalaya and Lesser Himalaya
  - **Main Boundary Thrust** – Between the Siwalik domain and the Lesser Himalaya



In the Eastern Himalayas Meghalaya has the most villages with springs, while Sikkim with the highest density. In the Western Himalayas, Jammu & Kashmir leads in both the number of villages and spring density.

- **Importance of springs** – Natural springs acts as a source of water for both *drinking and irrigation*.
  - **In Himalayan region** – It serves 64% of the cultivable land for irrigation.
- **Reduction in springs** – In the western Himalayas, over ***45% have completely dried up*** in the past 4 decades.
- Over ***26% have become semi-active***, transitioning from perennial springs which depend on the monsoon.
- **Cause of decline of Spring**
  - Rising temperatures
  - Altered precipitation patterns
  - Decreasing snowfall and rainfall
- **Impacts** – The rural communities will face shortages in drinking water, agriculture, and daily household needs.

Reference

[The New Indian express| Climatic Impacts on spring in the Himalayas]

