Drying of Himalayan springs

***Mains**: GS III - Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment.*

Why in news?

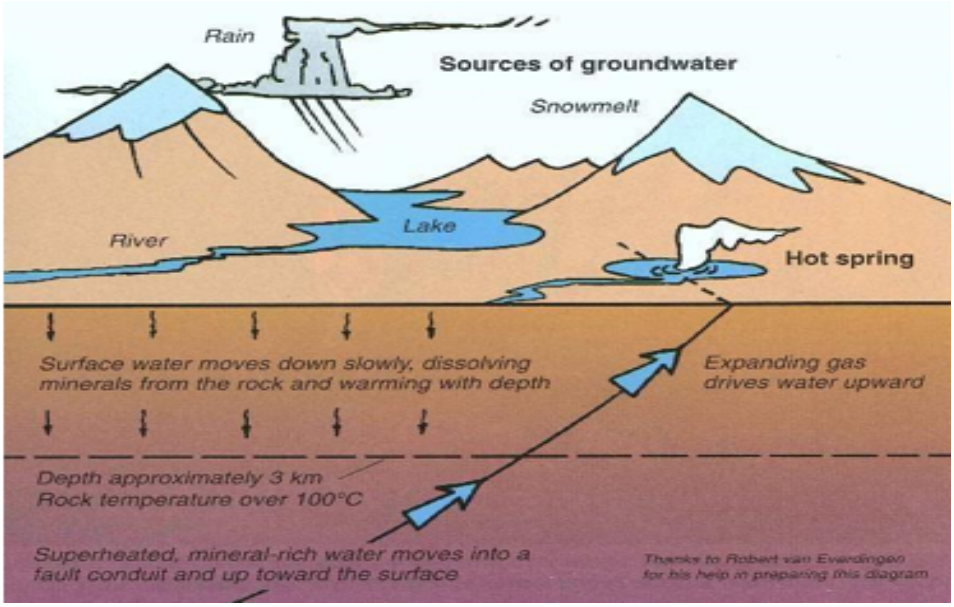
Recently, the findings in Himalayan regions have revealed the shrinking of Himalayan springs.

What is the importance of Himalayan springs?

***Springs** occur when water pressure causes a natural flow of groundwater onto the earth's surface.*

- **Water tower of South Asia** - The Indian Himalayan Region (IHR) is the source of major river systems, including the *Indus, Ganges, and Brahmaputra*, fed by glaciers and numerous springs
- **Ecological stability** - These springs, critical groundwater sources, are vital for local communities and ensure the ecological and hydrological stability of downstream regions.
- **Sustaining Livelihood** – Himalayan springs stretches approximately 2,500 km and supports the livelihood of over 50 million people.
- **National security** – The military infrastructure relies on the local water systems.
- Ensuring water availability vital not only for sustaining livelihoods but also for maintaining national stability.

*These springs are known as **dhara, mool, kuan** in the central and eastern Himalayas and **chashmaand naulain** the western Himalayas.*



What is the current issue?

- **Drying of spring** - According to a 2018 report by NITI Aayog, *nearly 50 % of springs* in the IHR are either drying up or have already dried up.
- **Water scarcity** - What was once a region abundant in freshwater is now marked by growing scarcity.
- **Ecological crisis** - This slow but steady disappearance of springs is not merely a rural inconvenience but it indicates a deepening ecological crisis with significant human security implications.
- Across India, approximately 200 million people rely on spring water, particularly in ecologically fragile mountain systems such as the Himalayas, Western and Eastern Ghats, and the Aravalli's.
- **social conflicts** - Reports from villages highlight rising disputes over water access often turning into verbal and physical clashes.
- **Trust deficits** - This erosion of a shared resource is weakening trust and cooperation in rural Himalayan communities, posing both ecological and socio-political challenges.
- **Implementation hurdles of schemes** - Flagship initiatives like Jal Jeevan Mission (JJM), aiming to provide functional household tap connections to all rural households by 2026, face significant implementation hurdles.

What are the causes for drying of Himalayan springs?

- **Changing rainfall pattern -** Reduction in the long-term rainfall in the region.
- **land cover and land use - ** Change in land cover and land use.
- **Landslide -** It causes the enormous loss of springs and other shallow water bodies.
- **Flood**s - It can also result in destruction of springs in the nearby regions.
- **Lack of dedicated policy -** Absence of clear and lack of dedicated policy puts the region in more vulnerable situation.

What are the steps taken?

- **NITI Aayog Report** - It was only in 2018 that NITI Aayog released its first report on the Inventory and Revival of Springs in the Himalayas for Water Security

- **National Mission on Himalayan Studies (NMHS) – This mission** has supported several pilot initiatives focused on spring revival. Yet, these efforts remain fragmented and insufficient in scale.

Sikkim's Dhara Vikas initiative
• **Launched in** – 2008. • **Objective** – To evolve a sustainable innovation in addressing water scarcity. • **Techniques** - By employing hydro-geological techniques like contour trenches and percolation pits, • **Mapping** – It has mapped nearly 2,000 springs, reviving approximately 200 springs and six lakes across 1,000 hectares. • **Results** - This effort recharges over 1.7 million litres of groundwater annually, enhancing water access, sanitation, and crop yields for rural communities, demonstrating a scalable model for sustainable water management.

What lies ahead?

- **A national framework** - The vulnerable Himalayan region needs a dedicated national framework for spring-shed management, especially in
- **Integrating with schemes** like Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), Integrated Watershed Management Programme (IWMP), Finance Commission grants, state initiatives, and
- **Integrating with funds** - Discretionary funds such as Members of Parliament Local Area Development Division (MPLADS), Member of Legislative Assembly Local Area Development Scheme (MLALADS), and CSR allocations
- **Place-based strategy** - A tailored and place-based approach recognises the ecological complexity, cultural nuances, and hydro-geological distinctiveness of the Himalayan region.

Quick Facts
• **Fresh water availability** - Though 70 % of Earth's surface is covered by water, only 2.5 % is freshwater, and less than 0.3 % is usable. • **Water dependency** - India, home to 18 % of the world's population and 15 % of its livestock, depends on just 4 % of global freshwater resources. • **Per-capita water availability** - According to Central Water Commission, India's per capita water availability has significantly decreased from 5,177 cubic meters in 1951 to 1,486 in 2021 and is projected to decline further to 1,367 cubic meters by 2031. • **Less attention** - The *national water policies of 1987 and 2012*, which constitute the most comprehensive water policies of India to date, made no mention of springs. • While urban water crises gain attention, remote Himalayan villages bear the brunt of this scarcity, often overlooked.

Reference

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