

## Glacier Melting in Ladakh

### Why in news?

Ladakhi innovator Sonam Wangchuk completed his 5 day climate fast in order to draw the attention of Indian leaders to the region's fragile ecology and to secure its protection under the Sixth Schedule of the Constitution.

### What is the issue?

- A glacier is a persistent body of dense ice that is constantly moving under its own weight and it forms where the accumulation of snow exceeds its ablation over many years, often centuries.
- **Significance** - Ladakh and the Himalayas form the '**third pole**' of the world and are among its few frozen freshwater sources.
- The Himalayas, along with all glaciers and river basins, are also called the "**water tower of Asia**".
- **Issue** - Ladakh is a cold desert and extremely sensitive to climate change.
- According to a study published in 2021, glaciers in the Pangong region retreated around 6.7% between 1990 and 2019.
- Glaciers in the **Drass region** of the western Himalayas are melting at a significant rate and thinned by 1.27 metres between 2000 and 2020
- **Reasons** - Growing emissions of black carbon and greenhouse gases



### What is Sixth Schedule?

- The Sixth Schedule under **Article 244** of the Constitution protects the autonomy of tribal populations through creation of autonomous development councils.
- The Council can frame laws on land, public health and agriculture.

- As of now **10 autonomous councils** exist in Assam, Meghalaya, Tripura and Mizoram.
- Ladakh was previously protected under Article 370, but the Indian government's revocation of Jammu and Kashmir's special status removed the provisions for Ladakh and became a Union Territory.

*The Parliamentary Standing Committee on Home Affairs recommended including of Ladakh in the Sixth Schedule because its tribal communities account for 79.61% of its total population.*

### **What is the impact of glaciers melt in Ladakh?**

- **Dry out conditions** - People of the region depend on glaciers to fulfil their water needs and losing the potable water affect their cultural heritage and force them to migrate.
- **Agriculture practices** - An increase in temperature has a direct impact on precipitation in an area which changes agriculture practices that eventually affects food security.
- **Sustainable practices** - Practices that support life in the region like surviving on a minimal quantity of water are slowly eroded.
- **Ecological balance** - The flora and fauna of Ladakh are highly evolved to survive in harsh climatic conditions and will be threatened due to changes in the local ecosystems.
- **Ecosystem loss** - The slightest disturbances in an ecosystem as fragile as Ladakh can lead to the collapse of the whole ecosystem.
- **Prone to flood** - Faster snow/glacier melt caused by global warming might witness higher flows and that may cause more flood damages.
- **Land subsidence** - It can also lead to land subsidence like the recently witnessed Joshimath crisis since Ladakh is even more fragile than Chamoli district.

### **What can be done?**

- **Ice stupas** - They are artificial glaciers built to store winter water for use in the arid months of late spring and early summer, when meltwater is scarce it is a more practical solution.
- **The tower of ice** - It was invented by engineer Sonam Wangchuk in Ladakh with the goal of preserving to feed the fields as it melts until the real glacial meltwaters start flowing again in summer.
- It is a low-cost, simple technology that may be used in any place with similar geo-climatic and topographical conditions and been implanted in the Kashmir valleys.
- **Proper utilization** - Water drained into rivers and gets wasted so we have to divert that at a higher altitude with a broad slope to flow in small volumes down the ridge through a proper structures.

### **References**

1. [The Hindu | Ladakh's fragile ecology and the Sixth Schedule](#)
2. [The Indian times | What Is The Retreat Of Glaciers In Ladakh](#)

