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

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