



# Hindu Kush Himalayan Mountains

## Why in News

According to [UNDP \(United Nations Development Programme\)](#), the Hindu Kush Himalayan (HKH) mountain ranges could lose up to two-third of its ice by 2100.

- About **2 billion people** may face food, water shortages by 2100.

## Key Points

- **About HKH Region:**
  - It is often referred to as the **'Third Pole'**, on earth, is spread over **3,500 square kms** across **eight countries** including India, Nepal and China.
  - It contains the world's **third-largest storage** of frozen water after Antarctica and the Arctic.
  - Over **240 million people live in the region's mountains**. **1.7 billion live in the river basins downstream**, while food grown in these basins reaches three billion people.
  - The glaciers **feed at least 10 major river systems**, which have bearings on agricultural activities, drinking water and hydroelectricity production in the region.



- **Challenges:**

- According to **ICIMOD's (International Centre for Integrated Mountain Development) 2019 assessment**, the HKH region will **continue to warm through the 21<sup>st</sup> century** even if the world is able to limit global warming at the agreed 1.5 degrees Celsius.
  - The **Paris agreement** aims to substantially reduce global greenhouse gas emissions in an effort to limit the global temperature increase in this century to 2 degrees Celsius above pre industrial levels, while pursuing the means to limit the increase to 1.5 degrees.
- In the future, even if global warming is kept to 1.5 degrees C above the pre-industrialisation levels, **warming in the HKH region is likely to be at least 0.3 degrees C higher, and in the northwest Himalaya and Karakoram at least 0.7 degrees C higher.**

▪ **Threat:**

- High Mountain Asia (the Asian mountain ranges surrounding the Tibetan Plateau) **will lose a substantial part of its cryosphere** in the next decades and thus a substantial part of its water storage abilities. This will lead to **increased water stress** in high mountain areas.

- A **cryosphere** comprises portions of Earth's surface where **water is in solid form**, including sea ice, lake ice, river ice, snow cover, glaciers, ice caps, ice sheets, etc.

▪ **Causes for the Melting of Glaciers:**

- The melting is driven by larger **anthropogenic modifications** (i.e. influenced by humans) of the atmosphere.
- The HKH region lies **downwind** from some of the most **heavily polluted places** on Earth. This threatens agriculture, climate as well as monsoon patterns.

▪ **Recommendations:**

- It is recommended to **shift away from** fossil fuel use in energy, transport, and other sectors, while changing diets and agricultural practices to move to net-zero emissions of greenhouse gases.
- The countries in the region **need to reduce emissions** of **black carbon** and other air pollutants as well.

▪ **Suggested Policies and Actions to Mitigate the Problem:**

- Farmers will need support **to design and invest in locally-appropriate water storage solutions**, or to shift to agricultural practices that consume less water.
- **Designs of new hydropower plants and grids** will need to take into account the changing climate and water availability.
- **Data and information, capacity-building and early warning systems and infrastructure design** will need to be improved. This calls for sufficient funding and large-scale coordination.

▪ **Related Initiative Taken by India:**

- **National Mission on Sustaining Himalayan Ecosystem (NMSHE)** is one of the eight missions under the **National Action Plan on Climate Change (NAPCC)**.
- The mandate is to evolve measures to sustain and safeguard the Himalayan glaciers, mountain ecosystems, biodiversity and wildlife conservation & protection.

## **The International Centre for Integrated Mountain Development**

- ICIMOD is **an intergovernmental knowledge and learning centre** working for the people of the Hindu Kush Himalaya (HKH).
- It is **based in Kathmandu, Nepal** and works in and for **eight regional member countries** - Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan.

