ICIMOD Report on Hindu-Kush Mountains

Why in news?

The report 'Water, ice, society, and ecosystems in the Hindu Kush Himalaya' was released by he International Centre for Integrated Mountain Development (ICIMOD).

What is the geographic extent of the Hindu-Kush Mountains?

- The Hindu Kush Himalaya (HKH) region extends 3,500 km over 8 countries from Afghanistan in the west to Myanmar in the east.
- **Range Countries -** Afghanistan, Pakistan, India, Nepal, Bhutan, China, Bangladesh and Myanmar.
- The HKH region, harbours the highest mountain ranges in the world.
- It also contains the largest volume of ice on earth outside of the polar areas and is called ***'Third Pole'***.
- The range is also the source of major Asian river system and called as ***'Water tower of Asia'***.

HKM in India - The entire territory of 11 mountain states & Darjeeling district of West Bengal state are included in the HKH region.
The 11 states are Assam, Uttarakhand, Himachal Pradesh, Manipur, Jammu & Kashmir, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, and Arunachal Pradesh.

What is the significance of HKM?

- The glaciers of the Hindu Kush Himalaya are a major component of the Earth system.
- Ice and snow in the HKH are an important source of water for *12 rivers* that flow through *16 countries* in Asia.
- The basins of these rivers provide freshwater and other vital ecosystem services to *1.9 billion people*, a fourth of the world's population.
- **Buffer -** Glaciers act like a 'buffer' in the hydrological cycle.
- As more snow reaches the top, it is stored as ice for decades and centuries, which will be eventually released as meltwater in the dry months.

What are the consequences of loss of HKH?

- **Climate change -** Climate change is driving unprecedented and irreversible changes in glaciers, snow and permafrost of the Hindu Kush Himalayas.
- **River system -** As a consequence, major rivers in the Himalayas including those in eastern and north-eastern India are set to suffer.

- Water availability in the Ganges, Indus and other river basins in the Hindu Kush region is set to increase in the short term and decrease in the long term.
- **Disasters -** Natural hazards like floods and landslides are projected to increase over the coming decades and cascade the impacts on the ecosystem.
- **Invisible Impacts -** The benefits that the lowlands or the economic hotspots get from the mountains is not quantifiably known.

Himalayan glaciers disappeared 65% faster in the 2010s than in previous decade.

What are the issues in adaptation measures?

- **State support -** Governments have played a limited role in helping mountain communities of the HKH adapt to climate change.
- **Adaptation fund -** The adaptation in the mountains is expensive, but the investment has been low.
- **Geopolitics -** The HKH countries are not as organised as Small Island Developing States.
- **Database -** Adaptation in one place might end up being maladaptation in another.
- Hence, data sharing is very important and the HKH range countries should come up with regional adaptation mechanism.

What does the ICIMOD report say?

- The ICIMOD's report ***'Water, ice, society, and ecosystems in the Hindu Kush Himalaya'*** highlights the changes and consequence of loss of snow in HKH.
- Hindu Kush Himalayan *glaciers* could lose up to 80% of their current volume by 2100 in a business-as-usual scenario.
- The average *temperature* in the region has increased by 0.28°C per decade between 1951 and 2020.
- Contribution of *water from glaciers* to Ganges, Brahmaputra and Indus will increase through 2050, then decrease by 2100.
- *Rivers* in the Eastern Himalayas get less water from glacial melt. Still, the perennial nature of several rivers could be lost.
- *Biodiversity* in Hindu Kush Himalayas will suffer even if the global temperature rise is maintained at 1.5 $^{\circ}$C.

Quick Facts

International Centre for Integrated Mountain Development (ICIMOD)
• ICIMOD is an intergovernmental institution leading the global effort to protect the Hind-Kush Mountains.
• ICIMOD is based in Kathmandu, Nepal.
• It has 8 regional member countries - Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan.

References

1. DTE - ICIMOD report paints bleak picture for Hindu Kush-Himalayas
2. ICIMOD - HI-WISE

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