

A Climate Resilience Pathway between India and China

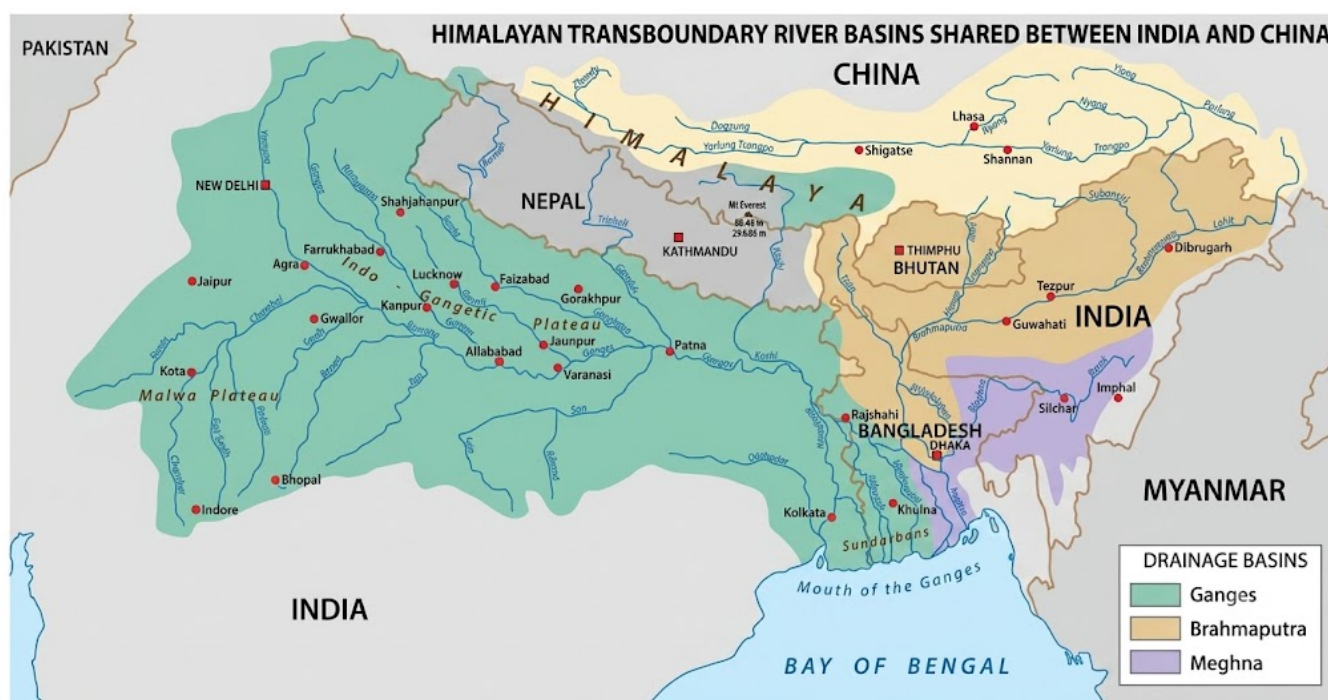
Mains: GS Paper II | Bilateral Relations | India and its Neighbourhood Relations.

Why in News?

Both India and China are facing extreme weather events that threaten economic growth, food security, and public well-being in the two most populous countries.

What are the drivers of shared climate vulnerability?

- **The Third Pole Crisis** - The Hindu Kush Himalaya (HKH) region contains the **largest ice mass outside the polar regions**.
- It feeds 10 major Asian river systems (including the Brahmaputra/Yarlung Tsangpo, Indus, and Mekong/Lancang).



- Glacial retreat in the Himalayas is accelerating at unprecedented rates, increasing the incidence of
 - Glacial Lake Outburst Floods (GLOFs),
 - Landslips, and
 - Erratic seasonal runoff.
- It disrupts downstream agriculture and hydropower infrastructure in both countries.
- **Monsoonal Disruptions** - Shifts in sea surface temperatures and regional warming patterns have rendered monsoon dynamics unpredictable.
- **Extreme Hydrological Events** - Both nations face a dual threat-compressed, ultra-intense rain events causing urban flooding, followed by extended dry spells threatening food and water

security.

- **Rapid Urban Adaptation Demands** - Megacities in both nations face severe infrastructure deficits against extreme weather.
- Managing urban runoff, heat island effects, and coastal/riverine flood protection are common administrative priorities.

What are the main areas for India-China climate collaboration?

Transboundary River Governance

- **Hydrological Data-sharing** - Expand hydrological data-sharing agreements on the Brahmaputra (Yarlung Tsangpo) and Sutlej (Langgen Zangbo) beyond flood seasons to round-the-year data, improving baseline flow models.
- **Joint GLOF Monitoring** - Establish joint scientific task forces to map high-risk glacial lakes across Tibet and the Indian Himalayan region, deploying real-time automated telemetry.
- **Disaster Risk Reduction (DRR)** - Bilateral institutional mechanisms for joint disaster response, early warning integration, and hazard mapping under the framework of the *Sendai Framework for Disaster Risk Reduction (2015-2030)*.

Clean Energy Transition

- **Supply Chain Synergies** - China is the global leader in solar PV component manufacturing, battery cell production, and EV supply chains.
- India possesses massive scaling capacity and demand under its National Green Hydrogen Mission and renewable energy targets.
- **Global South Leadership** - As key members of **BASIC** (Brazil, South Africa, India, and China) and **BRICS**, joint bargaining strengthens the Global South's position on climate finance (NCQG) and Loss & Damage mechanisms at UNFCCC COPs.
- **Urban Adaptation** - Cross-learning between China's *Sponge Cities Initiative* (permeable infrastructure, urban wetland restoration) and India's *AMRUT / Smart Cities Mission* to counter urban flash flooding.

What are the strategic challenges?

- **Geopolitical & Border Friction** - Strategic distrust along the Line of Actual Control (LAC) frequently leaks into functional cooperation, causing environmental data to be securitised rather than shared openly.
- **Asymmetry in Water Data Transparency** - China's upstream position creates anxieties in lower riparian India regarding dam construction (e.g., proposed super-dam at Medog on the Brahmaputra bend) and selective data transparency.
- **Trade Barriers** - Rising tariff/non-tariff barriers on Chinese clean-tech imports in India due to economic de-risking goals complicate technology transfer.
- **Competing Global South Ambitions** - Rivalry for regional influence in South Asia and Africa often overshadows opportunities for joint climate leadership.

What is the way forward?

- To build climate resilience, India and China must insulate scientific and ecological collaboration in the Hindu Kush Himalayas from border disputes using a Track 1.5 technocratic approach.
- Reviving bilateral joint working groups on environment and water is essential to institutionalise automated, protocol-driven data sharing.
- Utilise forums like the SCO, BRICS, and ICIMOD to secure broader regional consensus and backing for Himalayan ecological protection.
- Jointly define standards for green technologies, adaptation frameworks, and carbon credit

mechanisms to strengthen collective leadership for developing economies.

Reference

[The Hindu | Climate resilience pathway between India and China](#)

