

Yarlung Tsangpo Hydropower Project

Posted at: 04/01/2025

Yarlung Tsangpo Hydropower Project: A Strategic and Ecological Challenge

Context

China has approved the construction of the **world's largest hydropower project** on the **Yarlung Tsangpo River in Tibet**, with a capacity of **60,000 MW**, which is three times that of the **Three Gorges Dam**. This massive project, located at the river's "Great Bend" in Medog County, aims to harness the steep descent of the river for electricity generation.

The Yarlung Tsangpo flows into Arunachal Pradesh as the **Siang**, becomes the **Brahmaputra in Assam**, and enters Bangladesh before draining into the Bay of Bengal. The project's scale and strategic location raise **serious concerns for downstream countries**, including India and Bangladesh, as it could significantly impact **water flow, ecology, and millions of livelihoods**.

Key Highlights of the Project

About the Project

- **Capacity:** 60,000 MW, making it the **largest hydropower project in the world**.
- **Location:** The "Great Bend" of Yarlung Tsangpo in Medog County, Tibet, where the river turns sharply before entering India.
- **Plan Period:** Part of China's **14th Five-Year Plan (2021-2025)** to enhance renewable energy production.

China's Goals

- Achieving **net carbon neutrality by 2060** by reducing reliance on conventional energy sources.
- Utilizing the river's **steep descent** for optimal hydroelectricity generation.

Impacts on Downstream Regions

1. Water Flow Disruptions

- The Brahmaputra system relies heavily on water from Tibet.
- **Altered flow could disrupt agriculture and water availability** in India and Bangladesh.

2. Silt and Biodiversity Loss

- Dams block the natural flow of **silt**, essential for **fertile soil** in agricultural regions.
- Changes in river morphology can harm **biodiversity and local ecosystems**.

3. Fragile and Earthquake-Prone Region

- Tibet is one of the world's most **seismically active zones**.
 - A large dam in such a region increases the risks of **catastrophic failures**.
 - **Example:** The 2004 Parechu Lake landslide in Tibet caused a lake burst in 2005, despite mitigation efforts.
-

India's Concerns

1. Lack of Transparency

- China has shown **reluctance in sharing hydrological data** consistently.
- Data interruptions were noted during events like the **2017 Doklam standoff** and the **2020 Ladakh crisis**.

2. Disrupted Agreements

- The **Brahmaputra MoU** (for data sharing) lapsed in **2023**, and renewal is pending.
- The **Sutlej MoU**, established after the Parechu Lake incident, also needs renewal.

3. Questionable Claims

- China asserts that the project is "**run-of-the-river**", implying minimal water storage.
 - However, India views this claim with **skepticism**, given the scale of the project and potential impacts.
-

Strategic Options for India

1. Strengthen Coordination Mechanisms

- **Renew existing MoUs** and push for comprehensive data-sharing agreements.
- Advocate for adherence to **international principles** like equitable water use.

2. Public Diplomacy and Awareness

- Actively counter China's narrative that the dam will have **no downstream impacts**.
- Highlight potential risks to **ecology and livelihoods** at global platforms.

3. Elevate Water Issues in Bilateral Talks

- Make water concerns a **priority** in India-China relations.
- Clearly convey that **disregarding India's interests** could harm bilateral ties.

4. Regional Collaboration

- Collaborate with **Bangladesh** and other affected nations to form a unified strategy.
 - Work with international bodies to emphasize the risks posed by such large-scale projects.
-

Conclusion

The Yarlung Tsangpo hydropower project represents both a technological achievement and a significant ecological challenge. For India, **proactive engagement, robust agreements, and strong public diplomacy** are essential to address the risks posed by this project. Ensuring **regional cooperation and environmental sustainability** must remain at the forefront of India's strategy.



AKKA IAS ACADEMY
www.akkaias.com