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## India-China on Brahmaputra

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### Why in News

The construction of several dams along the **Brahmaputra river** (known as **Yarlung in China**) on the Chinese side has become a repeated cause of concern for India.

As **India and China** continue to grow demographically as well as economically amid increased consumption among its citizenry, **both nations face water constraints** and in a race to develop new projects in order to overcome them.



### Key Points

- **Brahmaputra:**
  - It originates under the name of **Siang or Dihang**, from the **Chemayungdung glacier of the Kailash range near the Mansarovar lake**. It enters India west of Sadiya town in Arunachal Pradesh.
    - Tributaries:** Dibang, Lohit, Siang, Burhi Dihing, Tista, and Dhansari.
  - It is a **perennial river** and has **several peculiar characteristics due to its geography and prevailing climatic conditions**.
  - It is **flooded twice annually**. One flood is caused by the **melting of the Himalayan snow in summer** and the **other due to the monsoon flows**.
    - The **frequency** of these floods have increased and are devastating due to climate change and its impact on high and low flows.
    - These **pose a concern for the population and food security in the lower riparian states of India and Bangladesh**.
  - The river is in itself **dynamic as frequent landslides and geological activity force it to change course** very often.
- **Chinese Perspective:**
  - China is home to close to **20% of the world's population** and has **only 7% of its water resources**, which also faces severe pollution caused by rapid industrialisation.
  - China's **southern regions are water-rich in comparison to the water-stressed northern part** and to solve that, it **plans to link the major rivers** in these regions through canals, aqueducts and other linking projects to ensure water security.
  - For that, China has been **blocking rivers like the Mekong and its tributaries**, affecting Southeast Asian countries like Thailand, Vietnam, Laos and Cambodia.
    - China, being an **upper riparian state in Asia**, sees these projects as a continuation of its **historic tributary system**.
    - The **smaller states have no means of effectively resisting** or even have **significant leverage** in negotiations.
  - In the **Himalayas**, there are **multiple operational dams in the Yarlung Tsangpo basin** with more dams commissioned and under construction.

- **Indian Perspective:**

- India has **17% of the world's population** and **4% of water**.
- It is **severely water-stressed** and in summer, a vast majority of urban areas face water shortage.
- A majority of India's population reside in the **Gangetic plains which enjoy water throughout the year** but the **southern and western regions experience harsh and dry summer** and the **rainfall is scarce and erratic in the eastern coast**.
- An ambitious **north-south river-linking project has been proposed in India** as well. However, it has come under criticism for **potentially disturbing fragile ecosystems**.

- **Concerns Raised:**

- **Degradation of the Basin:**

Massive amounts of silt carried by the river would get blocked by dams leading to a **fall in the quality of soil** and eventual **reduction in agricultural productivity**.

- **Threats to Flora and Fauna:**

- Brahmaputra basin is **one of the world's most ecologically sensitive zones** and is identified as **one of the world's 34 biological hotspots**.
- This region has several species of **flora and fauna which are endemic to only this part** of the world.
  - The **Kaziranga National Park** houses 35 mammalian species out of which 15 are listed as threatened in the **IUCN Red List**.
  - The river itself is home to the **Gangetic river dolphin**, which is listed as **critically endangered**.

- **Unfavourable Location:**

- The location of the dams also poses a risk as the **Himalayas are one of the most vulnerable to earthquakes and seismic activity**.
- **Landslides** resulting from earthquakes pose a significant threat. For example, the 2015 Nepal earthquake and the resultant landslides wiped out several dams and other facilities.

- **Risk to Inhabitants:**

- Damming this perennial river would **result in water security in an era of unprecedented shifting climate patterns**.
- The **sheer size of the infrastructure projects** undertaken by China and increasingly by India, poses a significant threat to the populations living downstream.

Close to a million people live in the Brahmaputra basin in India and tens of millions further downstream in Bangladesh.

- **Strategic Implications:**

- There is the potential to **significantly change the flow rate** during times of standoffs and high tensions.
- During the **2018 Doklam border standoff** between India and China, China stopped communication of water flow levels from its dams, effectively rendering India blind to floods during the standoff.

## Way Forward

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- With **India-China relations hitting its lowest point** since the 1962 war, border infrastructure has come under intense scrutiny. Alternative solutions to solving the water crisis which have to be adopted in order to neutralise this ticking water bomb.

- Both nations must cease new constructions on the river and commit to potentially less destructive solutions like building a decentralised network of check dams, rain-capturing lakes and using traditional means of water capture.
- These measures have shown effective results in restoring the ecological balance while supporting the populations of the regions in a sustainable manner.
- India and China do not have a water-sharing agreement and they should work upon it. Both nations share hydrological data so it becomes important to share genuine data and have a continuous dialogue on issues like a warning of droughts, floods and high water discharges.

**Source: IE**