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Opportunities and issues between India and China and sharing of Brahmaputra water and possible impact in India

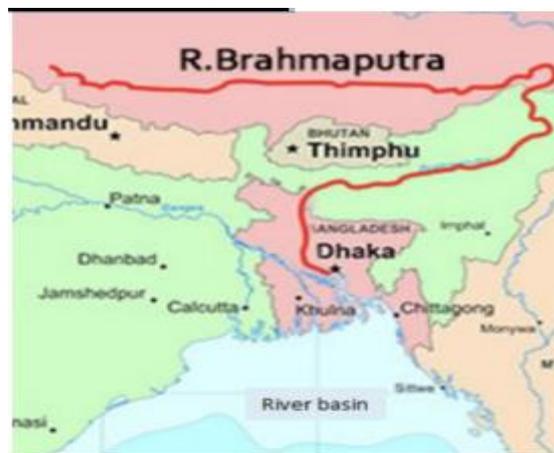
- Water has the potential to be one of the great challenges of the twenty-first century. According to United Nations estimates, more than half the global population will live in water-stressed or water-scarce countries by 2025. The vast majority of these people will be in China and India.

China - A water hegemon:

- By controlling Tibet, China controls the Brahmaputra, along with the source of the other major Himalayan-origin river systems.
- As long as Tibet remains a part of the People's Republic of China (PRC), China's regional hydrological hegemony is assured.
- Any understanding of Tibet's importance to China must include an understanding of the related water issues. It also presents India a potential option for leverage.

The Brahmaputra River

- The Brahmaputra begins from its source in the Kailas range of the Himalayas and flows 2,300 miles before emptying into the Bay of Bengal in Bangladesh.
- Its course takes it through China, India, and Bangladesh, and its watershed also falls within parts of Nepal, Bhutan, and Burma.
- Reflecting the diversity of people and geography along its course, the river goes by many names, including the Yarlung Tsangpo in Tibet, the Brahmaputra in India, and the Jamuna in Bangladesh.



Issues in Brahma Putra water sharing between India and China:

China's dam frenzy

- Brahma Chellaney, one of the foremost strategic thinkers of India, described the Chinese design of taking control over Brahmaputra water as "most dangerous".
 - The growing water demand in Tibet and the option available in principle to China of building water storage and transfer projects on the Yarlung may lead to drying up of the Brahmaputra.
 - China has come up with three large hydropower projects in very close proximity to each other, within the span of 24 kms- the Zangmo dam, which is already in commission; the Gyatsa dam, which has been constructed and is waiting to be commissioned; and finally, the Dagu dam, which has been in construction since 2017 and is the largest of the three.
 - There is speculation that Beijing's prime aim behind the projects is to control the flow of the river, besides exporting electricity from Tibet to mainland China. In the next decade, there are more dams being planned on the river-Bayu, Jiexi, Langta, Dakpa, Nang, Demo and Namcha.
 - Chinese plans to build a 1,000-km-long tunnel to divert water from the Brahmaputra River in Tibet to the parched Xinjiang region.
 - This hypothesis of perceived fear is termed as the "Brahma hypothesis".



Ecological issues

- According to Mark Christopher, China is the world's most aggressive dam builder, and Chinese water projects have already been accused of causing environmental damage and forced displacement of people in neighboring downstream countries.
 - In countries like Thailand, Vietnam, Laos, and Cambodia dams on the Chinese portion of the Mekong River are seen to disrupt river flows and cause environmental damage. Similar situation may arise in Indian downstream context of Brahmaputra also.

Economic Security

- According to Brahma Chellaney, "China and India together account for 52.8 percent of the world's rice production, 30.1 percent of the wheat, 21 percent of the corn, and 28.5 percent of the total grain.
 - China's ability to control the river's flow through damming and large-scale infrastructure projects such as the South-North Water Diversion Project and West-East Power Transfer Project threaten to divert or choke off these rivers.
 - China could sabotage transboundary rivers by polluting them, rendering them unfit for use. The Siang river, which joins the Lohit and the Dibang downstream to form the Brahmaputra, turned muddy and "blackened" in 2017 raising concerns about China's upstream activities.

Disaster Management

- According to Christopher Jaffrelot, inhabitants along the river have to deal with two floods annually, one caused by the melting of the Himalayan snow in summer and the other due to the monsoon flows.
 - The frequency of these floods has 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.
- China has access to valuable data that can help manage floods and fluctuations downstream. India and China have established Expert Level Mechanism (ELM) in 2006 to discuss various issues related to trans-border rivers and have signed two pacts since 2008 on data sharing for the Sutlej and Brahmaputra in order to better manage the shared watercourses.
- China decided to withhold hydrological data from India in 2017, undermining the efficacy of India's flood early-warning systems, especially in North East India.
- Worryingly, in 2004, a lake began to form on the Parechu river, a tributary of the Sutlej which originates in the Tibetan Himalayas, threatening to cause floods lower down in India's Sutlej valley- China's 'liquid bomb'. These concerns were raised in June 2020, when a rise of 12 to 14 metres was observed in the river.

Resource Nationalism

- Ameya Pratap Singh and Urvi Tembey write how China has claimed express ownership over Tibet's waters, making it an upstream controller of seven of South Asia's mightiest rivers – the Indus, Ganges, Brahmaputra, Irrawaddy, Salween, Yangtze and Mekong.
- According to Brahma Chellany, Asia has less fresh water per capita than any other continent, and it is already facing a water crisis that, according to an MIT study, will continue to intensify, with severe water shortages expected by 2050.
 - At a time of widespread geopolitical discord, competition over freshwater resources could emerge as a serious threat to long-term peace and stability in Asia.

River basin management

- According to Christophy Jeffrelot, there are now multiple operational dams in the Yarlung Tsangpo basin with more dams commissioned and under construction. These constructions present a unique challenge for Indian planners.
 - They will eventually lead to degradation of the entire 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.
 - The Brahmaputra basin is one of the world's most ecologically sensitive zones. It is identified as one of the world's 34 biological hotspots.
 - Seismologists consider the Himalayas as most vulnerable to earthquakes and seismic activity. Landslides resulting from earthquakes pose a significant threat — the 2015 Nepal earthquake.

Climate refugees and food security

- According to Brahma Chellaney, the Brahmaputra is the single largest freshwater source. Intensifying pressure on its water supply will likely trigger an exodus of refugees to India, already home to millions of illegally settled Bangladeshis.

Planning for Dejure control

- According to Mark Christopher, overall, customary international water law sets forth an allowable water usage framework, taking into effect multiple factors including historic use, volume of water contributed by each country's territorial rivers, population size, and future needs.
 - Of particular significance here is the legal preference given to the first state to "use" water by building dams, diversion projects, irrigation, or other engineered works.
 - De jure control over a river is enhanced by investments in dams or other construction. Through its expanding dam building campaign on the Brahmaputra, China seems increasingly likely to obtain strong de jure standing to accompany its de facto control.

Opportunities and way forward

- According to Brahma Chellaney, China must accept institutionalized cooperation on transnational riparian flows, including measures to protect ecologically fragile zones and agreement not to dam relatively free-flowing rivers.
 - This would require China to rein in its dam frenzy, be transparent about its projects, accept multilateral dispute-settlement mechanisms, and negotiate water-sharing treaties with neighbors.
- On the other hand, scholars like Nilanjan Ghosh, Sayanangshu Modak are critical of the "Brahma hypothesis" or the myth spread in the media as it does not stand the test posed by scientific data and knowledge. That the precipitation levels in the north aspect of the Himalayan Arc in the Chinese (Tibetan Plateau) area are marginal,

resulting in relatively low flows in the upper reaches of Brahmaputra.

- According to Christopher Jaffrelot, for both India and China, the Brahmaputra presents a geopolitical opportunity as damming this perennial river would result in water security in an era of unprecedented shifting climate patterns.
 - There are alternate solutions to solving the water crisis. Both sides must cease new constructions on the river and commit to potentially less destructive solutions.
 - Building a decentralised network of check dams, rain-capturing lakes and using traditional means of water capture have shown effective results in restoring the ecological balance while supporting the populations of the regions in a sustainable manner.
- Due to the lack of a mutually agreed dispute-settlement mechanism on water sharing for the transboundary rivers, Ameya Pratap Singh and Urvi Tembey suggest an India led counter-coalition of countries that share transboundary rivers, and forge a common institutional set-up for better transboundary management of shared rivers. They can also promote a “Southern Asian water information grid”, and aggregate best practices for water management.