# China dam on Brahmaputra river

December 8, 2020
The Brahmaputra River System is one of the longest rivers of the world. As it is shared by India, Tibet and Bangladesh it has strategic importance. For UPSC one has to study the geographic as well as geopolitical aspects of the river.

**In news:** China hydropower company has planned first downstream dam on Brahmaputra.
**Placing it in syllabus:** Geography- rivers
**Static dimensions**

1. Course of Brahmaputra river
2. Significance of the river to India
3. Law of non navigational use of international water courses, 1997

**Current dimensions**

1. Chinese plans of constructing a dam on Brahmaputra

## Content:

### Chinese plans of constructing a dam on Brahmaputra:

- A Chinese hydropower company is set to construct the first downstream dam on the lower reaches of the Brahmaputra river.
- Chinese **State-owned hydropower company Powerchina** had last month signed **"a strategic cooperation agreement" with the Tibet Autonomous Region (TAR)** government to "implement hydropower exploitation in the downstream of the Yarlung Zangbo River" as part of the new Five-Year Plan (2021-2025).

- China in 2015 operationalised its **first hydropower project at Zangmu in Tibet,** while **three other dams at Dagu, Jiexu and Jiacha** are being developed, all on the upper and middle reaches of the river.
- This will be the first time the downstream sections of the river will be tapped.
- The **location of planned downstream project is "Great Bend" of the Brahmaputra** and at the Yarlung Zangbo Grand Canyon in Medog county, where the river falls spectacularly over a 2,000 metre-drop and turns sharply to flow across the border into Arunachal Pradesh.
- The 60-million kWh hydropower exploitation at the downstream of the river could **provide 300 billion kWh of clean, renewable and zero-carbon electricity annually.**

## Course of Brahmaputra river:

- Its **origin is in the Manasarovar Lake region, near the Mount Kailash,** located on the northern side of the Himalayas in Burang County of Tibet.

- The upper reaches of the Brahmaputra River originates on the **Angsi Glacier, near Mount Kailash.**
- From its source, the river runs for nearly 1,100 km in a generally easterly direction between the main range of the Himalayas to the south and the Kailash Range to the north.
- In Tibet, the **Yarlung Tsangpo** receives a number of

tributaries.

- After passing Pi in Tibet, the river turns suddenly to the north and northeast and cuts a course through a succession of great narrow gorges between the **mountainous massifs of Gyala Peri and Namcha Barwa** in a series of rapids and cascades.
- After this the river enters northern Arunachal Pradesh state in northeastern India, where it is known as the **Dihang (or Siang)** River, and turns more southerly.
- It flows for about 35 km southward after which it is joined by the Dibang River and the Lohit River at the head of the Assam Valley.
- Below the Lohit, the river is called **Brahmaputra which then enters the state of Assam.**
- Just west of the town of Sadiya, the river again turns to the southwest and is joined by two mountain streams, the Lohit, and the Dibang.
- As the river follows its braided 700 km course through the valley, it receives several rapidly flowing Himalayan streams, including the **Subansiri, Kameng, Bhareli, Dhansiri, Manas, Champamati, and Sankosh rivers.**
- The main tributaries from the hills and from the plateau to the south are the Burhi Dihing, the Disang, the Dikhu, and the Kopili.
- The **Brahmaputra enters the plains of Bangladesh after turning south around the Garo Hills below Dhubri, India.**
- After flowing past Chilmari, Bangladesh, it is joined on its right bank by the Tista River and then follows a 240 km course due south as the Jamuna River.
- The Jamuna joins with the Ganga north of Goalundo Ghat, below which, as the Padma, their combined waters flow to the southeast
- Later the main body of the Padma reaches its confluence with the Meghna river near Chandpur and then enters the Bay of Bengal through the Meghna estuary.

## Significance of the river to India:

- River Brahmaputra and its tributaries carry more than 30 per cent of the total water resources potential of the country.
- River Brahmaputra helps people of Assam for meeting their livelihood in the form of wading of cattle, fishing, and cultivation of different types of crops, irrigation and riverine transport.
- The river helps in the inland water transport system of men, material and animals.
- Operation of ferry services has given rise to creation of employment in the region.
- 46 dams are identified in the Brahmaputra basin in Assam of which three of them are in various stages of operation and are expected to produce more than 2000 MW of power.
- Majuli, the world's largest inhabited freshwater island formed by Brahmaputra is the nerve centre of Neo-Vaishnavite cultural heritage of Assam.
- There are important tourist hot spots situated on the banks of river Brahmaputra.
- Cruise tourism has emerged as an important adventure and pleasure tourism across the river.
- There is considerable scope for increasing fish production in Brahmaputra and its tributaries.

## *Negative Impacts and Concerns:*

- River bank erosion, denudation, siltation and sand casting etc. have both directly and indirectly affected the livelihood of the people of the bordering states in the form of displacement, loss of livelihood, land and jobs.
- There is an element of geographical instability primarily caused by the erosion, silting, and inundation due to floods and change of the course of the river Brahmaputra.

- There has been internal displacement and migration to urban areas because of loss of land due to river flooding.

## Law of non navigational use of international watercourses, 1997:

Over 85 percent of the Indian territory lies within its major and medium interstate rivers. All the laws pertaining to the conflict resolution among the riparian States have a certain underlying philosophy which falls under one of five paradigms:

### Principle of Absolute Territorial Sovereignty (or Harmon Doctrine):

- This theory propounds that each State is a sovereign entity in itself and hence is entitled to utilise the rivers and other natural resources falling within its territories in whatever way it desires, irrespective of the consequences of such use on neighbouring States.
- This principle is also known as the Harmon Doctrine as it was applied for the first time in 1895 by US Attorney General Harmon to the dispute over pollution of the Rio Grande river between the US and Mexico.
- But this is a very parochial and myopic view of looking at things and can never bring reconciliation between riparian States.
- Hence, this doctrine is not a favoured one and is no longer in use.

### Principle of Absolute Territorial Integrity:

- In contrast to the Harmon doctrine, this principle states that downstream riparians have an absolute right to an uninterrupted flow of water from the river, no matter what the ground conditions may be.
- Hence, it prohibits upstream riparians to develop any part of the shared watercourse if it causes any harm to downstream States.

**Principle of Prior Appropriation:**

- This principle favours neither the upstream nor the downstream riparian States.
- It states that the status quo should be maintained, i.e. it favours the State that puts the water to use first, thereby protecting the uses which exist prior in time.
- Hence, each State along a watercourse may be able to establish prior rights to use a certain amount of water depending on the date upon which that water use began.

**Principle of No Significant Harm:**

- This principle gives each and every watercourse State a free hand to utilize the watercourse in whatever way it wants, provided that any such use does not cause any harm to the interests of other watercourse States.
- This doctrine has been recognized internationally.

**Principle of Equitable Apportionment:**

- This is a highly progressive principle and its uniqueness lies in the fact that it can take care of the requirements of economists, environmentalists, hydrologists and other scientists at the same time.
- It states that the waters of an international watercourse should be shared by all the member States in a reasonable and equitable manner.
- To determine the reasonable and equitable share of each watercourse state, a list of relevant factors may be taken from the **UN Convention on the Law of Non Navigational Uses of International Watercourses (1997)**:

Geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character;

The social and economic needs of the watercourse States concerned;

The population dependent on the watercourse in each

watercourse State;

The effects of the use or uses of the watercourses in one watercourse State on other watercourse states;

Existing and potential uses of the watercourse;

Conservation, protection, development and economy of use of the water resources of the watercourse and the costs of measures taken to that effect;

The availability of alternatives, of comparable value, to a particular planned or existing use.

**Mould your thought:**

1. River Brahmaputra is considered the lifeline of Assam. Comment.

***Approach to the answer:***

- Write how River Brahmaputra enters Assam.
- Explain its significance
- Write its ill effects on the life of people of Assam.
- Conclusion