

INDIA NAD IT'S NEIGHBOUR

❖ **India's call to modify the Indus Waters Treaty**

➤ **CONTEXT:** In a notice to Pakistan recently, India said that it has been compelled to call for the 'modification' of the 63-year-old Indus Waters Treaty owing to Pakistan's persistent objections regarding India's Kishenganga (KHEP) and Ratle hydropower projects in Kashmir.

➤ **What is the Indus Waters Treaty?**

- In 1947, the line of partition, aside from delineating geographical boundaries for India and Pakistan, also cut the Indus river system into two.
- Both sides were dependent on water from the Indus river basin to keep their irrigation infrastructure functional and therefore, equitable distribution was needed.
- In 1951, when both the countries applied to the World Bank for funding their respective irrigation projects on Indus and its tributaries, the World Bank offered to mediate the conflict.
- Finally in 1960, an agreement was reached between the two countries, and the Indus Waters Treaty (IWT) was signed by former Prime Minister Jawaharlal Nehru and then President of Pakistan, Ayub Khan. The former Vice President of the World Bank, W. A. B. Iliff, also signed it.

➤ **What are some of its key provisions?**

- The Indus river basin has six rivers (Indus, Jhelum, Chenab, Ravi, Beas and Sutlej) originating from Tibet and flowing through the Himalayan ranges to enter Pakistan, ending in the south of Karachi.
- The treaty prescribed how water from the six rivers would be shared between India and Pakistan.
- It allocated the three western rivers (Indus, Chenab and Jhelum) to Pakistan for unrestricted use, barring certain non-consumptive, agricultural and domestic uses by India. Similarly, the three Eastern Rivers (Ravi, Beas and Sutlej) were allocated to India for unrestricted usage.
- It also required both the countries to establish a Permanent Indus Commission constituted by permanent commissioners from both sides.

✓ The functions of the commission include serving as a forum for exchange of information on the rivers and as a first step for the resolution of conflicts.

- Annexure D of the IWT allows India to build 'run of the river' hydropower projects (projects which do not require live storage of water).
- The treaty also allows Pakistan to raise objections over such projects being built, if it does not find them to be compliant with the rules.

➤ **What are Pakistan's objections over the Kishenganga and Ratle projects?**

- Kishenganga, a tributary of the Jhelum river, originates in J&K and joins the river in Pakistan occupied Kashmir.
- The work for KHEP started in 2007, with a proposal to build a dam on the Kishenganga, diverting its water for a 330 MW hydropower plant in Kashmir's Bandipora and sending it back.
- The work for the project was supposed to be completed by 2016, but before the construction started, Pakistan had raised objections regarding the height of the dam, fearing it would mean increased water storage for India.

✓ Consequently, India agreed to alter the design by lowering its height from 97 metres to 37 metres.

- In 2010, Pakistan took the matter to the International Court of Arbitration at the Hague, this time, objecting to the diversion of water from Kishanganga.

✓ The Court gave India a green signal for the project (subject to conditions) in its final ruling in 2013.

- The conflict however, did not end here, with Pakistan approaching the World Bank three years later in 2016 and again in 2018, objecting to the design. It also tried to stop the construction of the dam in 2016 by firing shells near the dam site.

- The project was however, finally inaugurated in 2018. As for India's 850 megawatt Ratle hydroelectric power project on the Chenab river, Islamabad has repeatedly raised concerns over its design, insisting that India would use the project's reservoir to create deliberate and artificial water shortage or cause flooding in Pakistan.

- India's new call for modification of the Treaty comes from what it describes as Pakistani "intransigence" over its implementation.

- India says that the dispute over the two projects has been brewing since 2015, when Pakistan asked for the appointment of a Neutral Expert (NE) to look into its objections to the Ratle and Kishenganga projects. Later in 2016, Pakistan changed its request and requested that the Arbitration Court should examine the issue. India followed this up by sending its own request to appoint an NE.

- India now alleges that by unilaterally changing its request from one dispute resolution mechanism to another, Islamabad has violated the IWT. Besides, the World Bank recently moved to act on both requests.

According to Indian sources “such parallel considerations on the same issues” were not covered under any provision of the IWT.

- To resolve the long-standing dispute, India has called for the Treaty’s modification so that Pakistan is provided an opportunity to initiate “intergovernmental negotiations” within 90 days regarding the differences that the Indian side has described as a “material breach”.

PRELIMS

1. How do cows and sheep contribute to climate change?

➤ **CONTEXT: Microsoft co-founder Bill Gates has invested in an Australian climate technology start-up that aims to curtail the methane emissions of cow burps.**

- The start-up, Rumin8, has received funding worth \$12 million from Breakthrough Energy Ventures, which Gates created in 2015. Amazon chief executive Jeff Bezos, and Chinese entrepreneur and Alibaba co-founder Jack Ma have also backed the Breakthrough fund.

- Rumin8 is developing a variety of dietary supplements to feed to cows in a bid to reduce the amount of methane they emit into the atmosphere. The supplement includes red seaweed, which is believed to drastically cut methane output in cows.

➤ **How do cows and other animals produce methane?**

- Ruminant species are hooved grazing or browsing herbivores that chew cud. Ruminants such as cows, sheep, goats, and buffaloes have a special type of digestive system that allows them to break down and digest food that non-ruminant species would be unable to digest.

- Stomachs of ruminant animals have four compartments, one of which, the rumen, helps them to store partially digested food and let it ferment. This partially digested and fermented food is regurgitated by the animals who chew through it again and finish the digestive process.

- However, as grass and other vegetation ferments in the rumen, it generates methane, a potent greenhouse gas. Ruminant animals such as cows and sheep release this methane mainly through burping.

- Given the very large numbers of cattle and sheep on farms in dairy-producing countries, these emissions add up to a significant volume. It is estimated that the ruminant digestive system is responsible for 27 per cent of all methane emissions from human activity.

➤ **And why is methane such a big problem?**

- According to a report by the United Nations Environment Programme methane is one of the main drivers of climate change, responsible for 30 per cent of the warming since preindustrial times, second only to carbon dioxide. Over a 20-year period, methane is 80 times more potent at warming than carbon dioxide.

- It’s also the primary contributor to the formation of ground-level ozone, a colourless and highly irritating gas that forms just above the Earth’s surface. According to a 2022 report, exposure to ground-level ozone could be contributing to 1 million premature deaths every year.

- Several studies have shown that in recent years, the amount of methane in the atmosphere has dramatically shot up. In 2022, the US National Oceanic and Atmospheric Administration (NOAA) said that the atmospheric levels of methane jumped 17 parts per billion in 2021, beating the previous record set in 2020.

- While carbon dioxide remains in the atmosphere for much longer than methane, methane is roughly 25 times more powerful at trapping heat in the atmosphere, and has an important short-term influence on the rate of climate change.

➤ **How are researchers trying to mitigate methane emissions?**

- Rumin8 isn’t the first one to find a dietary solution to curb methane emissions from ruminant species. Scientists have been working on it for quite some time now, as they are looking to make these animals more sustainable and less gassy.

- A 2021 study, published in the journal PLUS ONE, found that adding seaweed to cow feed can reduce methane formation in their guts by more than 80 per cent.

- Apart from this, researchers are also trying to find gene-modifying techniques to curtail methane emissions in these animals. In 2022, scientists in New Zealand announced they had started the world’s first genetic programme to address the challenge of climate change by breeding sheep that emit lower amounts of methane.

- ✓ New Zealand is also one of the first nations to come up with policy-related solutions to this problem.

- In October 2022, it New Zealand proposed taxing the greenhouse gases that farm animals produce from burping and urinating. That the money raised from taxes would be used to “finance new technologies, research and incentive payments for farmers”.

2. Grievances Appellate Committees

➤ **CONTEXT: The Centre has notified the formation of three grievance appellate committees that will address users’ complaints against social media and other internet-based platforms, including being empowered to oversee and revoke content moderation-related decisions taken by these platforms.**

➤ **Three GACs and their composition**

- According to the notification, issued recently, each of the three grievances appellate committees (GACs) will have a chairperson, two whole-time members from different government entities, and retired senior executives from the industry for a term of three years from the date of assumption of office.
- **The first panel** will be chaired by the chief executive officer of the Indian Cyber Crime Coordination Centre under the Ministry of Home Affairs.
 - ✓ Retired Indian Police Service (IPS) officer Ashutosh Shukla, and Punjab National Bank's (PNB) former chief general manager and chief information officer Sunil Soni have been appointed as the whole-time members of the panel.
- **The second panel** will be chaired by the joint secretary in charge of the Policy and Administration Division in the Ministry of Information and Broadcasting.
 - ✓ Indian Navy's retired Commodore Sunil Kumar Gupta, and Kavindra Sharma, the former vice-president (consulting) of L&T Infotech, have been appointed as the whole-time members of this panel.
- **The third panel** will be chaired by Kavita Bhatia, a senior scientist at the Ministry of Electronics and IT.
 - ✓ Former traffic service officer of the Indian Railways Sanjay Goel, and former managing director and chief executive officer of IDBI Intech Krishnagiri Ragothamarao have been appointed whole-time members of the third panel.

➤ **The role of the panels**

- In October 2022, the government notified that it will start the process of selecting GACs amid criticism from civil society activists, who had raised concerns about the government's involvement in the appeals process. The government had initially said that it would be open to social media companies setting up a self regulatory body provided that it found the body's functioning satisfactory.
- What the changes essentially mean is that in case a user is not satisfied with the content moderation decision taken by a social company's grievance officer, they can appeal that decision before the proposed government-appointed appeals committee. The government's initial proposal had stemmed from users' complaints about being deplatformed, or being removed from a social media sites, without companies giving them an adequate avenue of hearing.
- GACs can also seek assistance from people who may have adequate expertise and experience in a subject matter while dealing with users' appeals.
- The GACs will adopt an "online dispute resolution mechanism" where the entire appeal process, from its filing to the final decision, will be done online. Social media companies will also have to compile every order passed by the GACs and report them on their respective websites.
- Any person aggrieved by a decision of the grievance officer of a social media intermediary will be allowed to file an appeal to the GAC within a period of 30 days. The GAC will have to deal with the appeal and resolve it within a month of the receipt of the appeal.
- Keeping in view the transition period required for the intermediaries as per their requests and technical requirement, the GACs' online platform will be operational from March 1, 2023.

3. Polar Vortex

➤ **CONTEXT: Scientists say Asia's extreme cold is largely the result of the so-called 'polar vortex', the same weather phenomenon that brought exceptionally cold weather to the United States recently.**

- The term refers to an expanse of cold air that generally circles the Arctic but occasionally
- Shifts south from the North Pole. The phenomenon itself has always been present, even if the expression polar vortex has become popular only in recent years.
- The polar vortex is held in place by the Earth's rotation and temperature differences between the Arctic and mid latitudes.
- When those variations in temperatures grow, the polar vortex can shift south. This month, the polar vortex brought
- Arctic air to Central Asia before slowly moving eastward. Its south ward bulge is accompanied by a shift in the jet stream, a ring of strong wind that blows from west to east along the vortex's edges.
- The larger the amplitude of the rails, the larger the area of the polar vortex and the farther south the Arctic air extends.

➤ **Climate change?**

- Scientists aren't sure what role, if any, climate change plays in the process of southward shift of the polar vortex. This happens naturally, but some scientists think that as the planet warms, shifts in the polar vortex are likely to become more frequent and pronounced. But there is no consensus on whether the number of extreme freezes will increase as warming continues.
- It's likely that recent droughts in Asia made the region even more susceptible to temperature extremes

- There has been a general decrease in the frequency and intensity of cold extremes across much of the world since the 1950s, the Intergovernmental Panel on Climate Change noted in a report in 2022.
- According to the vice chair of an IPCC working group, the trend is an average that doesn't account for local variations. What's happening in parts of the world is that we're getting more cold weather and more extreme weather.

4. Amrit Udyan

- **CONTEXT:** The iconic Mughal Gardens at the Rashtrapati Bhavan (President's House) in Delhi have been renamed. "The collective identity of all the gardens at Rashtrapati Bhavan will be 'Amrit Udyan'. Earlier there were descriptive identities, now a new identity has been given to the gardens.
- History of Mughal Gardens in India
 - This style was influenced by the Persian gardens particularly the Charbagh structure.
 - It is intended to create a representation of an earthly utopia in which humans co-exist in perfect harmony with all elements of nature
 - In Babur Nama, Babur says that his favourite kind of garden is the Persian charbagh style (literally, four gardens).
 - From the gardens surrounding Humayun's Tomb in Delhi to the Nishat Bagh in Srinagar, all are built in this style – giving them the moniker of Mughal Gardens.
- Features:
 - Use of waterways, often to demarcate the various quadrants of the garden.
 - These were not only crucial to maintain the flora of the garden, they also were an important part of its aesthetic.
 - Fountains were often built, symbolising the "cycle of life."

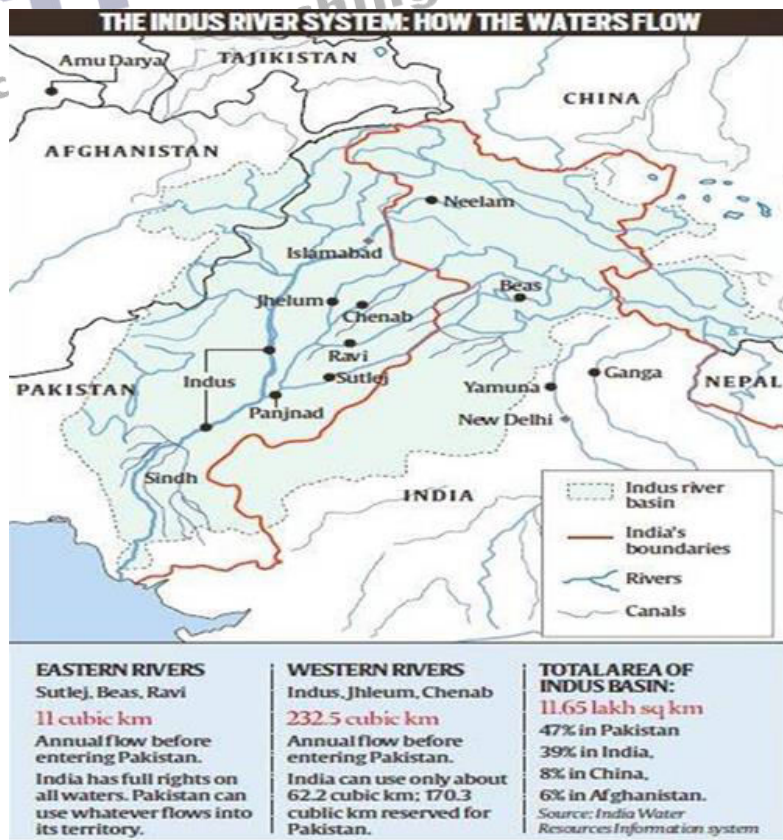
ANSWER WRITING

Q. Recently, India has issued notice to Pakistan seeking modification of the six-decade-old Indus Water treaty. Discuss the provisions of the Indus Water Treaty and also highlight the main points of contention between India and Pakistan over the treaty.

The Indus River basin has six rivers Indus, Jhelum, Chenab, Ravi, Beas and Sutlej, flowing through the Himalayan-ranges to enter Pakistan. The Indus Water Treaty signed in 1960 and mediated by the World Bank prescribed how water from the six rivers would be shared between India and Pakistan.

Key provisions of the Indus Water Treaty (IWT):

- The treaty allocated the three western rivers Indus, Chenab and Jhelum to Pakistan for unrestricted use. The three Eastern rivers Ravi, Beas and Sutlej were allocated to India for unrestricted usage.
- This meant that 80% of the share of water or about 135 Million Acre Feet (MAF) went to Pakistan, leaving the rest 33 MAF or 20% of water for use by India.
- The treaty also required the countries to establish a Permanent Indus Commission constituted by permanent commissioners on both sides. The functions of the commission include serving as a forum for the exchange of information on the rivers, for continued cooperation and as a first step for the resolution of conflicts.
- While Pakistan has rights over the waters of Jhelum,



Chenab and Indus, Annexure C of the IWT allows India certain agricultural uses, and Annexure D allows it to build 'run of the river' hydropower projects, meaning projects not requiring live storage of water. It also provides certain design specifications which India has to follow while developing such projects.

- The treaty provides for a graded 3-level mechanism for dispute resolution.
 - Either side can approach World Bank for the appointment of a Neutral Expert (NE) if the above mechanism fails.
 - Also, as per the mechanism whenever India plans to start a project, under the Indus Water Treaty, it has to inform Pakistan that it is planning to build a project.

Contention between India and Pakistan over the treaty:

- Observers from both sides have criticised the treaty as outdated and for being an obstruction to the effective exploitation of the Indus River's resources, as it limits possibilities for storage.
- The treaty has become a source of dissatisfaction between the two countries with the growing demand for water, the extensively technical nature of the document rooted in its annexures and the fact that the western rivers flow through the conflicted region of Jammu and Kashmir.
- Pakistan has raised multiple objections under the treaty, over India's hydropower and dam projects on the western rivers. For example, Kishanganga Hydro Electricity Project (KHEP) on the Kishanganga river a tributary of Jhelum, and Ratle hydroelectric power project on the Chenab River.
- The IWT also does not promote the collaborative development of the Indus Basin between the two states and considers neither the effect of climate change on overall water availability nor regional distribution beyond the national level.

The treaty provides for unequal water sharing as 80% of water is allocated to Pakistan. Further, it also prevents India from building any storage system on the western rivers. Therefore, in order to resolve the long-standing dispute India has called for the Treaty's modification. This process would update IWT to incorporate the lessons learned over the last 62 years.

MCQs

1. With reference to the "Indus Water Treaty" consider the following statements
 1. As per the Indus Water Treaty between India and Pakistan, on Ravi, Beas and Sutlej water India does have an absolute claim.
 2. The treaty established a Permanent Indus Commission for resolving any disputes that may arise in water sharing.
 3. Under the treaty, India has also been given the right to generate hydroelectricity through Run of the River (RoR) projects..

Which of the statements given above are correct?

 - a) 1 and 2 only
 - b) 2 and 3 only
 - c) 1 and 3 only
 - d) 1,2 and 3**
2. Ratle Hydroelectric Plant recently seen in news, currently under construction on which of the following river?
 - a) Chenab River**
 - b) Ravi River
 - c) Beas River
 - d) Sutlej River
3. Consider the following statements
 1. Livestock emissions from both manure and gastroenteric releases account for roughly around 32 per cent of human-caused methane emissions.
 2. Agricultural methane only comes from Livestock farming.

Which of the above statement/s is/are not correct?

 - a) 1 only
 - b) 2 only**
 - c) Both 1 and 2
 - d) Neither 1 nor 2
4. Consider the following statements:
 1. Polar vortex is a large area of low pressure and cold air surrounding both poles of the earth.
 2. In northern hemisphere Polar Vortex rotates in clockwise direction and helps divert the colder air away from the poles.
 3. Global warming is resulting in 'strengthening' of the vortex

Which of the statements given above is/are correct?

- 1 and 2 only
 - 2 and 3 only
 - 1 and 3 only**
 - 1,2 and 3
5. All India Survey on Higher Education (AISHE) is released recently by which of the following?
- Ministry of Education**
 - NITI Ayog
 - CBSE
 - NCERT
6. With respect to the Mughal gardens, consider the following statements:
- These represents humans co-exist in perfect harmony with all elements of nature.
 - Some of the typical features include pools, fountains and canals inside the gardens.
 - The Aram Bagh of Agra is thought to have been the first charbagh in South Asia.

Which of the statements given above is/are correct?

- 1 and 2 only
 - 2 and 3 only
 - 1 and 3 only
 - 1,2 and 3**
7. Which of the following welfare schemes of the government are related to minority sections?
- Seekho aur Kamao
 - USTTAD
 - Nai Manzil
 - Nai Roshni

Select the correct answer using the code given below:

- 1 and 2 only
 - 2 and 3 only
 - 3 and 4 only
 - 1,2,3 and 4**
8. Terms like “chaturanga, pachisi, bhatukali, baghchal” often mentioned in news are related to which of the following?
- Medieval Handloom paintings
 - Traditional Stories of India
 - Traditional Poems related to Purans
 - Traditional Toys of India**
9. Consider the following statements
- Despite cigarettes accounting for only 15% of tobacco users, they generate 80% or more of tobacco taxes.
 - A National Calamity Contingent Duty (NCCD) is imposed on pan masala, chewing tobacco and cigarettes

Which of the above statement/s is are correct?

- 1 only
 - 2 only
 - Both 1 and 2**
 - Neither 1 nor 2
10. Soliga community often mentioned in news are mostly found in which of the following state?
- Karnataka**
 - Rajasthan
 - Odisha
 - Madhya Pradesh