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GS I: History

PM greets dignitaries against backdrop of iconic T.N. temple

Prime Minister Narendra Modi on Saturday welcomed BRICS leaders against a backdrop featuring Tamil Nadu's iconic Ramanathaswamy temple, one of the Char Dham shrines where Lord Rama is believed to have performed puja after his victory over the demon king Ravana. At Bharat Mandapam, where the 18th BRICS Summit is under way, the Prime Minister received the leaders of BRICS nations, including Russian President Vladimir Putin, Chinese President Xi Jinping, and Iranian President Masoud Pezeshkian. The leaders shook hands and posed for pictures against the backdrop featuring the iconic temple. Welcoming Mr. Xi, Mr. Modi also explained to him the significance of the temple. The Ramanathaswamy temple is the only one dedicated to Lord Shiva among the Char (four) Dham shrines. PTI

13S9. PM greets dignitaries against backdrop of iconic T.N. temple

प्रधानमंत्री ने प्रतिष्ठित तमिलनाडु मंदिर की पृष्ठभूमि में गणमान्य व्यक्तियों का अभिवादन किया

• Prime Minister Narendra Modi on Saturday welcomed BRICS leaders against a backdrop featuring Tamil Nadu's iconic Ramanathaswamy temple, one of the Char Dham shrines where Lord Rama is believed to have performed puja after his victory over the demon king Ravana.

प्रधानमंत्री नरेंद्र मोदी ने शनिवार को तमिलनाडु के प्रतिष्ठित रामनाथस्वामी मंदिर की पृष्ठभूमि में BRICS नेताओं का स्वागत किया, जो चार धाम तीर्थस्थलों में से एक है और जहाँ माना जाता है कि राक्षस राजा रावण पर विजय प्राप्त करने के बाद भगवान राम ने पूजा की थी।

• At Bharat Mandapam, where the 18th BRICS Summit is under way, the Prime Minister received the leaders of BRICS nations, including Russian President Vladimir Putin, Chinese President Xi Jinping, and Iranian President Masoud Pezeshkian.

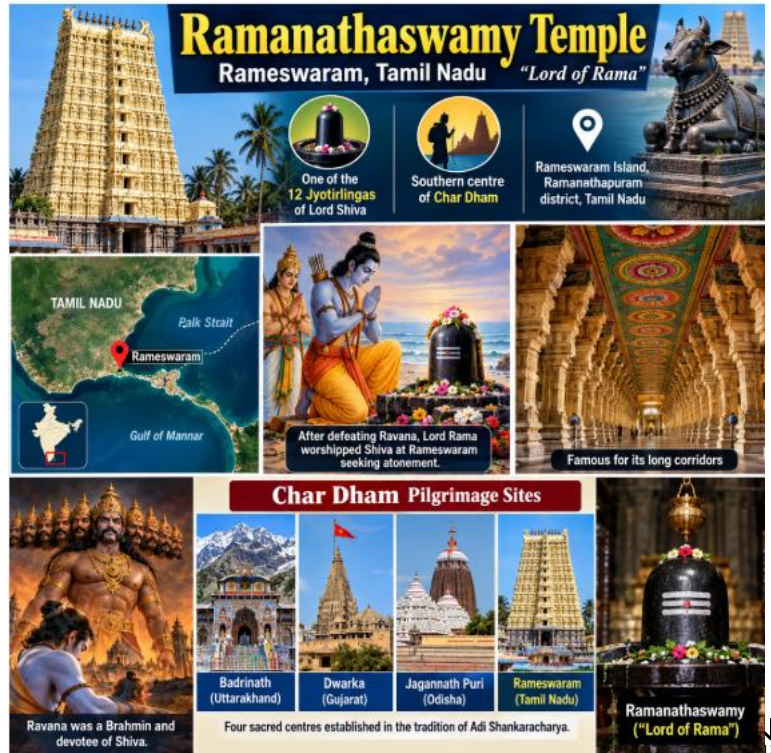
भारत मंडपम में, जहाँ 18वाँ BRICS शिखर सम्मेलन चल रहा है, प्रधानमंत्री ने BRICS देशों के नेताओं का स्वागत किया, जिनमें रूस के राष्ट्रपति व्लादिमीर पुतिन, चीन के राष्ट्रपति शी जिनपिंग और ईरान के राष्ट्रपति मसूद पेज़ेशकियन शामिल थे।

- The leaders shook hands and posed for pictures against the backdrop featuring the iconic temple.
- नेताओं ने हाथ मिलाया और प्रतिष्ठित मंदिर वाली पृष्ठभूमि के सामने तस्वीरें खिंचवाईं।
- Welcoming Mr. Xi, Mr. Modi also explained to him the significance of the temple.
- श्री शी का स्वागत करते हुए श्री मोदी ने उन्हें मंदिर के महत्व के बारे में भी बताया।
- The Ramanathaswamy temple is the only one dedicated to Lord Shiva among the Char (four) Dham shrines.

रामनाथस्वामी मंदिर चार धाम तीर्थस्थलों में भगवान शिव को समर्पित एकमात्र मंदिर है।

Ramanathaswamy Temple, Rameswaram

- Ramanathaswamy Temple is a celebrated Hindu temple located on Rameswaram Island in Ramanathapuram district, Tamil Nadu, near the Palk Strait and Gulf of Mannar.
- The temple is dedicated to Lord Shiva and is especially significant because it connects Shaivism with the Ramayana tradition.





- **Why is it associated with Lord Rama?**
- According to Hindu tradition, after defeating **Ravana, the king of Lanka**, Lord Rama worshipped **Shiva at Rameswaram**.
- Ravana was a Brahmin as well as a devotee of Shiva; therefore, Rama is traditionally believed to have performed worship seeking atonement after killing him.
- The temple's principal deity is worshipped as **Ramanathaswamy**, meaning broadly “**Lord of Rama**.”
- **Jyotirlinga + Char Dham — very important distinction**
- Rameswaram has **two major religious associations**:
- **Ramanathaswamy → one of the 12 Jyotirlingas of Lord Shiva.**
- A **Jyotirlinga** is a particularly sacred manifestation of Shiva, traditionally represented through a Shiva Linga.
- **Rameswaram → one of the four Char Dham pilgrimage sites** traditionally associated with **Adi Shankaracharya**.
- Remember the four:
- **Badrinath — Uttarakhand (North)**
Dwarka — Gujarat (West)
Jagannath Puri — Odisha (East)
Rameswaram — Tamil Nadu (South)
- Thus, saying simply that the temple is a “Char Dham shrine” is shorthand; more precisely, **Rameswaram is the southern Char Dham pilgrimage centre, with Ramanathaswamy Temple as its principal sacred temple.**
- **Architecture**
- The temple is an outstanding example of **Dravidian temple architecture**, characterised by monumental **gopurams**, pillared corridors and large temple enclosures. It is particularly famous for its extraordinarily long **pillared corridors**.



'Sacred' demands

BAPS

The Eiffel Tower management's move to replace all women staff with their male colleagues for the visit of a delegation from the religious sect has sparked a backlash in France

GS I: History
G. Sampath

Visitors to Paris's iconic Eiffel Tower last Monday had to turn back in disappointment. The monument was closed following a protest against the management's move to replace all women staff with their male colleagues for the visit of a 100-strong delegation from the Hindu religious sect, Bochasanwasi Akshar Purushottam Swaminarayan Sanstha (BAPS).

The local trade union condemned "workplace instructions that led to female employees being sidelined, replaced and rendered invisible on the basis of gender". A union spokeswoman told the media that it was "a humiliating experience for the women, to be made invisible in a public space."

BAPS is known for adopting strict gender segregation. But the attempted imposition of its belief system in a country that takes pride in its progressive culture and gender norms sparked a swift backlash. Terming the incident "totally shocking and unacceptable", Ariel Weil, the president of the company that runs the Eiffel Tower, announced an internal investigation to fix accountability and ensure it "never happens again".

The incident also had sections of the Indian dias-



pora worried about an anti-immigrant backlash, with one prominent group, the India Alliance Paris (IAP), posting on social media, "The Eiffel Tower story must not become fodder for more racism. BAPS is a regressive sect, politically connected to India's far-right. It should be treated like the sexist, casteist, backward sect it is. BAPS does not represent all Hindus and it certainly does not represent India."

BAPS, in a statement on X, clarified that the visit was "arranged in conjunction with the Eiffel Tower team" and apologised "for any pain or inconvenience caused".

'Cultural relations'

The visit from the BAPS delegation coincided with the inauguration of a massive Swaminarayan temple in Bussy-Saint-Georges, a Paris suburb. The event was attended by India's Ambassador to France, and the temple was virtually inaugurated by Prime Minister

Narendra Modi. In his video address, Mr. Modi termed the inauguration "a new milestone in the cultural relations between India and France".

BAPS, which gets its name from Bochasan village in Gujarat, was formed as a distinct denomination within the Swaminarayan Sampradaya, or tradition, in 1905. Its followers are predominantly from Gujarat. Mr. Modi had attended the funeral of Pramukh Swami Maharaj, the spiritual head of BAPS, in August 2016. Apart from Mr. Modi, Home Minister Amit Shah and Adani Group Chairman Gautam Adani are other prominent Gujaratis who have been seen attending and speaking at BAPS functions.

The abundantly funded religious group, according to its website, has over 1,300 temples across the world and a presence in more than 50 countries. BAPS, however, is no stranger to controversy. It hit global headlines in 2021

following a lawsuit filed in a federal court in New Jersey that accused it of exploiting Indian workers brought to the U.S. on religious-worker (R-1) visas. An R-1 visa is meant for volunteers or devotees engaged in religious work. But the lawsuit claimed that BAPS made them do manual labour, including cutting, grinding, polishing, carving and installing stone, and other heavy construction work.

The litigants claimed that BAPS "intentionally recruited workers from the Scheduled Caste" and subjected them to "forced labour..." A criminal investigation, which began in May 2021 under the Biden administration, was abruptly closed in mid-2025 by Department of Justice officials under the second Trump administration. The civil cases against BAPS, however, remain open.

While every religious sect may be entitled to its customary practices, including some that may not sit well with modern progressive norms, critics have questioned the propriety of the Prime Minister of a constitutionally secular republic not only publicly platforming a particular religious sect but also projecting it as an integral element of India's diplomatic outreach and "special partnership" with another country.

13S9. 'Sacred' demands 'पवित्र' मांगें

- The monument was closed following a protest against the management's move to replace all women staff with their male colleagues for the visit of a 100-strong delegation from the Hindu religious sect, **Bochasanwasi Akshar Purushottam Swaminarayan Sanstha (BAPS)**.
हिंदू धार्मिक संप्रदाय **बोचासनवासी अक्षर पुरुषोत्तम स्वामीनारायण संस्था (BAPS)** के 100 सदस्यीय प्रतिनिधिमंडल के दौरे के लिए प्रबंधन द्वारा सभी महिला कर्मचारियों को उनके पुरुष सहकर्मियों से बदलने के निर्णय के विरोध में हुए प्रदर्शन के बाद इस स्मारक को बंद कर दिया गया।
- The local trade union condemned "workplace instructions that led to female employees being sidelined, replaced and rendered invisible on the basis of gender".

स्थानीय ट्रेड यूनियन ने “कार्यस्थल के ऐसे निर्देशों” की निंदा की, जिनके कारण महिला कर्मचारियों को “लिंग के आधार पर किनारे कर दिया गया, उनका स्थान ले लिया गया और उन्हें अदृश्य बना दिया गया।”

- A union spokeswoman told the media that it was “a humiliating experience for the women, to be made invisible in a public space.”
एक यूनियन प्रवक्ता ने मीडिया से कहा कि “सार्वजनिक स्थान पर महिलाओं को अदृश्य बना दिया जाना उनके लिए अपमानजनक अनुभव था।”
- BAPS is known for adopting **strict gender segregation**.
BAPS कड़े लैंगिक पृथक्करण को अपनाने के लिए जाना जाता है।
- Terming the incident “totally shocking and unacceptable”, Ariel Weil, the president of the company that runs the Eiffel Tower, announced an internal investigation to fix accountability and ensure it “never happens again”.
एफिल टावर का संचालन करने वाली कंपनी के अध्यक्ष एरियल वील ने इस घटना को “पूरी तरह चौंकाने वाली और अस्वीकार्य” बताते हुए जवाबदेही तय करने और यह सुनिश्चित करने के लिए आंतरिक जांच की घोषणा की कि “ऐसा दोबारा कभी न हो।”

‘Cultural relations’

‘सांस्कृतिक संबंध’

- The visit from the BAPS delegation coincided with the inauguration of a massive Swaminarayan temple in Bussy-Saint-Georges, a Paris suburb.
BAPS प्रतिनिधिमंडल का दौरा पेरिस के एक उपनगर बुसी-सेंट-जॉर्जेस में एक विशाल स्वामीनारायण मंदिर के उद्घाटन के साथ हुआ।
- The event was attended by India's Ambassador to France, and the temple was virtually inaugurated by Prime Minister Narendra Modi.
इस कार्यक्रम में फ्रांस में भारत के राजदूत ने भाग लिया और प्रधानमंत्री नरेंद्र मोदी ने मंदिर का वर्चुअल उद्घाटन किया।
- In his video address, Mr. Modi termed the inauguration “a new milestone in the cultural relations between India and France”.
अपने वीडियो संबोधन में श्री मोदी ने उद्घाटन को “भारत और फ्रांस के बीच सांस्कृतिक संबंधों में एक नया मील का पत्थर” बताया।
- BAPS, which gets its name from Bochasan village in Gujarat, was formed as a distinct denomination within the Swaminarayan Sampradaya, or tradition, in 1905.
BAPS, जिसका नाम गुजरात के बोचासन गांव से लिया गया है, का गठन 1905 में स्वामीनारायण संप्रदाय या परंपरा के भीतर एक विशिष्ट धार्मिक संप्रदाय के रूप में हुआ था।
- The abundantly funded religious group, according to its website, has over 1,300 temples across the world and a presence in more than 50 countries.
इस धार्मिक समूह की वेबसाइट के अनुसार, पर्याप्त वित्त पोषण प्राप्त इस संगठन के विश्वभर में 1,300 से अधिक मंदिर हैं और 50 से अधिक देशों में इसकी उपस्थिति है।
- BAPS, however, is no stranger to controversy.
हालांकि, BAPS विवादों से अपरिचित नहीं है।
- It hit global headlines in 2021 following a lawsuit filed in a federal court in New Jersey that accused it of exploiting Indian workers brought to the U.S. on religious-worker (R-1) visas.
2021 में न्यू जर्सी की एक संघीय अदालत में दायर एक मुकदमे के बाद यह वैश्विक सुर्खियों में आया, जिसमें उस पर धार्मिक-कर्म (R-1) वीजा पर अमेरिका लाए गए भारतीय श्रमिकों का शोषण करने का आरोप लगाया गया था।
- An R-1 visa is meant for volunteers or devotees engaged in religious work.
R-1 वीजा धार्मिक कार्यों में संलग्न स्वयंसेवकों या श्रद्धालुओं के लिए होता है।

- But the lawsuit claimed that BAPS made them do manual labour, including cutting, grinding, polishing, carving and installing stone, and other heavy construction work.
लेकिन मुकदमे में दावा किया गया कि BAPS ने उनसे पत्थर काटने, घिसने, पॉलिश करने, तराशने और स्थापित करने सहित अन्य भारी निर्माण कार्यों से जुड़े शारीरिक श्रम करवाए।
- The litigants claimed that BAPS “intentionally recruited workers from the Scheduled Caste” and subjected them to “forced labour...”
वादियों ने दावा किया कि BAPS ने “जानबूझकर अनुसूचित जाति से श्रमिकों की भर्ती की” और उन्हें “बलात् श्रम” के अधीन किया।

A unified Ireland would be ‘fantastic’, says U.S. President

GS I: History

Associated Press
DUBLIN

U.S. President Donald Trump said on Saturday that a unified Ireland would be “fantastic” as he waded into a complex and politically charged subject during a weekend visit to a tournament at his Irish golf course.

At a meeting with Irish Prime Minister Micheal Martin in Dublin, Mr. Trump said he would love to see the reunification of the Republic of Ireland with the United Kingdom’s Northern Ireland.

“I don’t want to cause any problems but I’d love to see it unified,” Mr. Trump told a pressperson who sought his opinion on the issue. “It’s going to happen eventually. It may as well happen now.”

“I think it would be a fantastic thing,” the Repu-



Donald Trump

blican President said, adding that “the U.K. will have something to say about it, obviously”.

‘No good answer’

At his next stop, Mr. Trump acknowledged there is “no good answer” to the reunification question as he addressed business leaders from both countries gathered at the U.S. Ambassador’s residence.

Competing visions of Northern Ireland – whether Irish or British – drove

decades of violence in the six-county region that has a Protestant majority and has remained part of the United Kingdom.

Previous American Presidents, including Democrat Joe Biden, who has strong emotional ties to Ireland, have avoided commenting directly on the subject.

Ireland, long dominated by its bigger neighbour Britain, became a self-governing Catholic-majority country a century ago.

Northern Ireland was split between two main communities: nationalists, most of them Catholic, who desired union with the rest of Ireland, and largely Protestant unionists, who wanted to stay British. Tensions eventually exploded in the Troubles involving paramilitary groups on both sides and British troops.

13S9. A unified Ireland would be ‘fantastic’, says U.S. President अमेरिकी राष्ट्रपति ने कहा, एकीकृत आयरलैंड ‘शानदार’ होगा

- At a meeting with Irish Prime Minister **Micheal Martin** in Dublin, Mr. Trump said he would love to see the reunification of the Republic of Ireland with the United Kingdom’s Northern Ireland.
डबलिन में आयरलैंड के प्रधानमंत्री **Micheal Martin** के साथ बैठक में श्री Trump ने कहा कि वे आयरलैंड गणराज्य और यूनाइटेड किंगडम के Northern Ireland के पुनर्एकीकरण को देखना पसंद करेंगे।



Ireland

- A **unified or united Ireland** means that **Northern Ireland** would cease to be part of the **United Kingdom (UK)** and join the **Republic of Ireland**, creating one political entity on the island of Ireland.
- Northern Ireland's constitutional status has historically generated deep conflict.

Why are Ireland and Northern Ireland separate?

- Ireland was historically under British rule. Following the **Irish independence struggle**, the island was **partitioned in 1921**.
- Most of Ireland eventually became today's independent **Republic of Ireland**, while **six counties in the northeast remained within the United Kingdom as Northern Ireland**.
- Therefore, today:
- **Republic of Ireland** → independent sovereign country; **capital: Dublin**
- **Northern Ireland** → part of the **United Kingdom**; **capital: Belfast**
- The UK consists of **England + Scotland + Wales + Northern Ireland**.

Why has Northern Ireland been controversial?

- Historically, two broad political identities competed:
- **Nationalists/Republicans** — traditionally largely Catholic; generally favour Northern Ireland joining the Republic of Ireland.
- **Unionists/Loyalists** — traditionally largely Protestant; generally favour Northern Ireland remaining within the UK.
- This division contributed to approximately three decades of violent conflict known as **“The Troubles” (late 1960s–1998)**, involving republican and loyalist paramilitary organisations, British security forces and others.



Good Friday Agreement — crucial for UPSC

- The major breakthrough was the **Good Friday (Belfast) Agreement of 1998**, which established a framework for power-sharing and helped largely end the Troubles.



- A crucial principle is **consent**: Northern Ireland's constitutional position should not simply be changed by Britain, Ireland, the U.S., or another outside power.
- Reunification can occur if people democratically support it under the framework established by the agreement.
- **The Republic of Ireland is an EU member, whereas Northern Ireland is constitutionally part of the UK, which left the EU through Brexit.**

GS Paper 1: Society	13 September 2026
TOPICS COVERED	
13S9	Why has the Census been deferred in Manipur? मणिपुर में जनगणना स्थगित क्यों की गई है?

Why has the Census been deferred in Manipur?

Why are many civil society organisations demanding that the State's National Register of Citizens be prepared first? What are the differences between some communities and the Kukis on this issue? How is the NRC demand related to the Manipur ethnic conflict?

GS 1: Society

Rahul Karmakar

The story so far:

In August 31, the Centre deferred the Census operations in Manipur amid demands from several community-based and civil society organisations (CSOs) to first conduct the State's National Register of Citizens (NRC) exercise with 1951 as the base year. The decision followed Union Home Minister Amit Shah's meeting with Manipur Governor Ajay Kumar Bhalla and Chief Minister Yumnam Khemchand Singh in New Delhi. The message conveyed was that Manipur can ill-afford fresh tension amid the ongoing Kuki-Meitei and Kuki-Naga conflicts, with elections to the State's 60-member Assembly less than a year away.

What led to the Census deferment?

The decennial Census operation in poll-bound Manipur was scheduled to start on September 1. Data collection for the exercise began in January. A few months later, several community-based and CSOs began opposing the scheduled headcount, demanding that the State's NRC be prepared first. The Meiteis, who are in the majority in Imphal Valley, opposed the Census 2027 exercise. The Meitei Pangals (Muslims), largely inhabiting the valley, joined the NRC-before-Census bandwagon, as did the Nagas, who dominate at least five of the State's 10 hill districts.

The Kuki community, led by the Kuki-Zo Council, supported the Census operation. Their leaders said an impartial headcount would dispel false claims about Kuki population growth and the perception that they were "illegal migrants", and ensure a fair delimitation process based on verified population numbers. The Kukis also said updating the NRC before the Census was premature and biased, fearing that the community members might face unfair exclusion if 1951 was used as the base year. This is because there remains a perception among some communities that the Kukis are not the

Pro-NRC groups say an NRC is necessary to identify "illegal migrants" who migrated to Manipur from Bangladesh, Burma (Myanmar), and Mizoram to "pose a threat" to the State's "original inhabitants"

"original" inhabitants.

However, the other communities intensified their pro-NRC protests. Shutdowns and boycotts of all the Central and State government offices followed. A citizens' group, Campaign for Just and Fair Delimitation, threatened to intensify its protest. Leaders of 14 CSOs met with the Governor before travelling to New Delhi to meet with the Union Home Secretary, Registrar General of India, and the High-Level Committee on Demographic Change to explain why Manipur needed the NRC to find a permanent solution to the ethnic conflict that has scarred the State since May 3, 2023.

Has the Census been deferred or withheld earlier?

Yes, at least thrice. The exercise was withheld or not conducted in 1981 for Assam, which was in the midst of a mass movement (1979-1985) against undocumented immigration. The agitators feared that conducting a Census amidst unresolved citizenship disputes would legitimise illegal settlers on the voters' list. Normal Census operations were resumed after the Assam Accord was signed in August 1985.

The 1991 Census for Jammu and Kashmir was also not conducted due to the rise of extremist activities and the mass exodus of Kashmiri Hindus (Pandits) from the Kashmir Valley following widespread violence.

The 2021 Census cycle was postponed nationally due to the COVID-19 pandemic and rescheduled to 2026-27.

What is the argument of the pro-NRC groups?

In a memorandum submitted to the Governor on July 1, the 14 CSOs said an NRC was necessary to identify "illegal migrants" who migrated to Manipur from Bangladesh, Burma (Myanmar), and Mizoram to "pose a threat" to the State's "original inhabitants". They claimed that the Inpui, Kabuis, Liangmais, Maos, Marams, Meiteis, Poumais, Rongmeis, Tangkhuls, and Zemes were the original inhabitants. They said the population of Meitei Pangals, descendants of Muslims from present-day Bangladesh who migrated to the State since 1606 and settled by marrying Manipuri women, increased to 2,39,886 (Census 2011) from 4,881 in 1881 with an "unexpected" growth rate of 4,814% over 130 years. The population of the Meiteis and the original tribes increased by 880% and 897%, respectively, during this period, they said.

Claiming large-scale migration into Manipur's hills from Bangladesh, Myanmar, and Mizoram since the 15th century, the CSOs said the total population in the hills jumped to 5,49,599 in 2011 from 25,384 in 1881, recording a growth rate of about 2,165%. They said protecting their ancestral land from "infiltrators" and keeping their socio-cultural environment intact became a "headache" for most original inhabitants, given the demographic scenario.

The CSOs said those who fail to establish a

link between people in the 1951 Census and those in the (demanded) NRC should be declared "non-citizens of Manipur" and duly detected and deported.

How is the NRC demand linked to Manipur's ethnic conflict?

The Manipur government has consistently backed the NRC. Its formal demand gained traction after the Manipur Legislative Assembly adopted a unanimous resolution on August 5, 2022, seeking the establishment of a State Population Commission and the implementation of the NRC. One of the triggers was the military coup in Myanmar in February 2021, following which several hundred people crossed over to Manipur through porous borders. Most of those who took refuge were Kuki-Chin, ethnically related to the Kukis of Manipur and the Mizos of Mizoram. Many in Manipur blame the illegal influx for the ongoing ethnic conflict, first between the Kukis and Mizos and then between the Kukis and Nagas, which has claimed almost 300 lives since May 2023 and displaced more than 62,000 people. Although the State government or any other agency has not conducted any survey of "illegal immigrants", Meiteis and Nagas believe that the Kuki population has jumped exponentially in the hill districts. While non-tribal Meiteis feel the Census could reduce their representation in the Assembly from the current 40 seats, the Nagas believe the scale could tip in favour of the Kukis in the hills. The 20 Assembly seats in the hills are divided equally between the Kukis and the Nagas. The latter, however, say the hill areas should have had at least three more Assembly seats based on the 2011 population.

Is an error-free NRC guaranteed?

The NRC, entailing the transfer of data from Census slips, was born out of independent India's first Census in 1951. Assam compiled the NRC in 1951, although all States were mandated to do so. The intention behind that exercise in Assam was to prepare a village-based inventory of residents in view of the resistance from the State – then undivided – to house post-Partition refugees. The fear of the indigenous people of being outnumbered by "illegal immigrants" during and after the 1971 Bangladesh War led to the Assam Agitation from 1979 to 1985. A demand during the agitation was to eject undocumented foreigners by updating the 1951 NRC. The exercise, supervised by the Supreme Court, began in 2014, and the complete draft was published on August 31, 2019. This draft excluded 19.06 lakh out of the 3.3 crore people who had applied for inclusion. The Assam NRC process, however, remains incomplete because the Registrar General of India has not issued any notification declaring it as final. Organisations such as the All Assam Students' Union claim the NRC 2019 was manipulated to pass a majority of an estimated 41 lakh illegal immigrants as citizens. The BJP-led Assam government remains adamant that the NRC was erroneous, with at least 20% of the enlisted names in districts bordering Bangladesh requiring re-verification. Assam's updated NRC has been in limbo, with cases against it pending in the Supreme Court.



Women hold placards during a sit-in protest demanding the conduct and update of the National Register of Citizens before the Census, in Imphal. ANI



13S9. Why has the Census been deferred in Manipur?

मणिपुर में जनगणना स्थगित क्यों की गई है?

- On August 31, the Centre deferred the Census operations in Manipur amid demands from several community-based and civil society organisations (CSOs) to **first** conduct the State's **National Register of Citizens (NRC) exercise with 1951 as the base year.**
31 अगस्त को, कई समुदाय-आधारित और नागरिक समाज संगठनों (CSOs) की इस मांग के बीच कि राज्य में **राष्ट्रीय नागरिक रजिस्टर (NRC)** की प्रक्रिया पहले 1951 को आधार वर्ष मानकर संचालित की जाए, केंद्र ने मणिपुर में **जनगणना** की प्रक्रिया स्थगित कर दी।
- The **Meitei Pangals (Muslims)**, largely inhabiting the valley, joined the NRC-before-Census bandwagon, as did the Nagas, who dominate at least **five** of the State's 10 hill districts.
मुख्यतः घाटी में रहने वाले मैतेई पांगल (मुस्लिम) भी जनगणना से पहले NRC की मांग करने वाले समूह में शामिल हो गए, जैसा कि नागा भी शामिल हुए, जिनका राज्य के 10 पहाड़ी जिलों में से कम-से-कम पांच पर प्रभुत्व है।
- This is because **there remains a perception among some communities that the Kukis are not the "original" inhabitants.**
ऐसा इसलिए है क्योंकि कुछ समुदायों के बीच अब भी यह धारणा बनी हुई है कि कुकी "मूल" निवासी नहीं हैं।

Has the Census been deferred or withheld earlier?

क्या पहले भी जनगणना स्थगित या रोकी गई है?

- Yes, at least thrice.**
हाँ, कम-से-कम तीन बार।
- The **exercise was withheld or not conducted in 1981 for Assam, which was in the midst of a mass movement (1979-1985) against undocumented immigration.**
1981 में असम के लिए यह प्रक्रिया रोक दी गई थी या आयोजित नहीं की गई थी, क्योंकि उस समय राज्य बिना दस्तावेज वाले आव्रजन के खिलाफ एक जन आंदोलन (1979-1985) के बीच था।
- They claimed that the **Inpuis, Kabuis, Liangmais, Maos, Marams, Meiteis, Poumais, Rongmeis, Tangkhuls, and Zemes** were the original inhabitants.
उन्होंने दावा किया कि इनपुई, काबुई, लियांगमाई, माओ, मराम, मैतेई, पौमाई, रोंगमेई, तांगखुल और ज़ेमे **मूल निवासी** थे।
- Assam compiled the NRC in 1951**, although all States were mandated to do so.
असम ने 1951 में NRC तैयार किया, हालांकि सभी राज्यों को ऐसा करने का निर्देश दिया गया था।
- The **fear of the indigenous people of being outnumbered by "illegal immigrants" during and after the 1971 Bangladesh War led to the Assam Agitation from 1979 to 1985.**
1971 के बांग्लादेश युद्ध के दौरान और उसके बाद "अवैध प्रवासियों" द्वारा संख्या में पीछे छूट जाने के मूल निवासियों के भय ने 1979 से 1985 तक **असम आंदोलन** को जन्म दिया।
- The **exercise, supervised by the Supreme Court, began in 2014, and the complete draft was published on August 31, 2019.**
सर्वोच्च न्यायालय की निगरानी में यह प्रक्रिया 2014 में शुरू हुई और पूर्ण मसौदा 31 अगस्त, 2019 को प्रकाशित किया गया।
- The **Assam NRC process, however, remains incomplete because the Registrar General of India has not issued any notification declaring it as final.**
हालांकि, असम NRC की प्रक्रिया अभी भी अधूरी है, क्योंकि भारत के रजिस्ट्रार जनरल ने इसे **अंतिम** घोषित करने वाली कोई **अधिसूचना** जारी नहीं की है।



TOPICS COVERED

13S9 Why is NCPCR investigating Meta, Instagram?
NCPCR Meta और Instagram की जाँच क्यों कर रहा है?

Why is NCPCR investigating Meta, Instagram?

What did a BBC investigation show? Why is child sexual exploitation and abuse material appearing on Instagram? Under what powers can the National Commission for Protection of Child Rights summon social media platforms and other companies?

CS II: Polity
Aroon Deep

The story so far:

Following an investigation by British public broadcaster BBC, which found that Instagram was running paid advertisements promoting child sexual exploitation and abuse material (CSEAM) in India, the National Commission for Protection of Child Rights (NCPCR) summoned Meta officials for a hearing on September 9. The Ministry of Electronics and Information Technology (MeitY) has also summoned the company on the issue.

What did the BBC investigation show?

In July, BBC created a test account and found that dozens of ads were promoting CSEAM on Instagram. The distribution of CSEAM is a criminal offence in India.

Meta's policy also states that ads must not contain content that sexually exploits children. Meta said in a statement, "Before these cases were brought to our attention, our enforcement

While social media platforms prohibit CSEAM, automatic moderation systems that use some AI to detect unlawful media are not able to catch every violative submission

systems had already identified and disabled several of the violating ads and the accounts behind them." The company said that it automatically removes millions of CSEAM posting accounts each year, but that "no system is perfect and that determined criminals will continue to try to exploit our platform".

This month, the Tech Transparency Project (TTP), a U.S.-based nonprofit, also reported that it found hundreds of CSEAM ads on Facebook and Instagram, including some served to India.

Why are CSEAM ads appearing on Instagram?

While social media platforms prohibit CSEAM, automatic moderation systems that use some AI to detect unlawful media are not able to catch every violative submission. TTP said that Meta's efforts were not enough even within the scope of what it could do. The nonprofit said that, even in cases where Meta did take down CSEAM, it sometimes classified the ads as adult sexual content, potentially "undercounting instances of child sexual abuse".

While Meta revised this information for ads reported by TTP, it "did not fix the flow of child exploitation content in its advertising system" and continued to show CSEAM ads to certain audiences, the nonprofit said. One of the ads appeared to feature an unidentified "underaged European royal," TTP said.

Even when a human reported CSEAM posts, action was not guaranteed, TTP found. "With 57% (73) of the CSEAM ads reported to Meta, the company sent back a message that said, 'We've taken a look and found that this ad doesn't go against our Advertising Standards,'" TTP said.

What was the NCPCR's reaction to the report?

NCPCR issued a notice on July 3, the same day the BBC report came out, demanding an explanation from the company. MeitY also

sought an explanation from Meta.

Shortly after Prime Minister Narendra Modi's July 23 video message to the Indian youth was briefly removed from Facebook due to an "error," MeitY summoned Meta's global public affairs director, Joel Kaplan, to demand an explanation for that removal. The BBC's report was also discussed during that meeting. The government's summons came as it sent a large number of takedown notices over Instagram posts about the Jantar Mantar protests, while footage of the protests and the ensuing police crackdown went viral.

Meta provided written responses to both MeitY and NCPCR. The latter declined a Right to Information request by *The Hindu* for a copy of the company's response, arguing that providing this information would impede its investigation.

After the written response, Meta officials were summoned by NCPCR this month. Neither side provided a description of the meeting.

What powers does NCPCR have to conduct an inquiry like this?

Like the National Human Rights Commission (NHRC), the NCPCR's founding law, the Commissions for Protection of Child Rights Act, 2005, gives the body the powers of a civil court under the Criminal Procedure Code (replaced by the Bharatiya Nagarik Suraksha Sanhita, 2023). As such, it has the statutory power to demand explanations on issues of child safety from private organisations and can demand reports from law enforcement. NCPCR's remit includes "matters relating to children in need of special care and protection, including children in distress, marginalised and disadvantaged children, children in conflict with law, juveniles, children without family, and children of prisoners, and recommend appropriate remedial measures," and to "[i]nquire into complaints [relating to] non-implementation of laws providing for protection and development of children," the commission said.

NCPCR has in the past issued notices to companies such as Netflix in response to the show *Bombay Begums*, and to Bournvita maker Mondelez over sugar content in their malt powder.



The new Instagram logo. REUTERS

13S9. Why is NCPCR investigating Meta, Instagram?

NCPCR Meta और Instagram की जाँच क्यों कर रहा है?

- Following an investigation by British public broadcaster BBC, which found that Instagram was running paid advertisements promoting **child sexual exploitation and abuse material (CSEAM)** in India, the **National Commission for Protection of Child Rights (NCPCR)** summoned Meta officials for a hearing on September 9.

ब्रिटिश सार्वजनिक प्रसारक **BBC** की एक जाँच में यह पाया गया कि Instagram भारत में **बाल यौन शोषण और दुरु्यवहार सामग्री (CSEAM)** को बढ़ावा देने वाले सशुल्क विज्ञापन चला रहा था, जिसके बाद **राष्ट्रीय बाल अधिकार संरक्षण आयोग (NCPCR)** ने 9 सितंबर को सुनवाई के लिए Meta के अधिकारियों को तलब किया।

- The **Ministry of Electronics and Information Technology (MeitY)** has also summoned the company on the issue.

इलेक्ट्रॉनिक्स और सूचना प्रौद्योगिकी मंत्रालय (MeitY) ने भी इस मुद्दे पर कंपनी को तलब किया है।

What did the BBC investigation show?

BBC की जाँच में क्या सामने आया?



- In July, BBC created a test account and found that dozens of ads were promoting **CSEAM** on Instagram.
जुलाई में BBC ने एक परीक्षण खाता बनाया और पाया कि Instagram पर दर्जनों विज्ञापन **CSEAM** को बढ़ावा दे रहे थे।

What powers does NCPCR have to conduct an inquiry like this?

इस प्रकार की जाँच करने के लिए NCPCR के पास क्या शक्तियाँ हैं?

- Like the **National Human Rights Commission (NHRC)**, the NCPCR's founding law, the **Commissions for Protection of Child Rights Act, 2005**, gives the body the powers of a civil court under the Criminal Procedure Code (replaced by the **Bharatiya Nagarik Suraksha Sanhita, 2023**).

राष्ट्रीय मानवाधिकार आयोग (NHRC) की तरह, NCPCR के संस्थापक कानून **बाल अधिकार संरक्षण आयोग अधिनियम, 2005** के तहत इस निकाय को दंड प्रक्रिया संहिता के अंतर्गत सिविल न्यायालय की शक्तियाँ प्राप्त हैं, जिसे **भारतीय नागरिक सुरक्षा संहिता, 2023** द्वारा प्रतिस्थापित किया गया है।

- As such, it has the statutory power to demand explanations on issues of child safety from private organisations and can demand reports from law enforcement.
इस प्रकार, इसे निजी संगठनों से बाल सुरक्षा से संबंधित मुद्दों पर स्पष्टीकरण माँगने की वैधानिक शक्ति प्राप्त है और यह कानून प्रवर्तन एजेंसियों से रिपोर्ट भी माँग सकता है।
- NCPCR's remit includes "matters relating to children in need of special care and protection, including children in distress, marginalised and disadvantaged children, children in conflict with law, juveniles, children without family, and children of prisoners, and recommend appropriate remedial measures," and to "[i]nquire into complaints [relating to] non-implementation of laws providing for protection and development of children," the commission said.

आयोग ने कहा कि NCPCR के कार्यक्षेत्र में "विशेष देखभाल और संरक्षण की आवश्यकता वाले बच्चों से संबंधित मामले, जिनमें संकटग्रस्त बच्चे, हाशिए पर और वंचित बच्चे, कानून के साथ संघर्ष की स्थिति में बच्चे, किशोर, परिवारविहीन बच्चे और कैदियों के बच्चे शामिल हैं, तथा उचित उपचारात्मक उपायों की सिफारिश करना" और "[बच्चों के संरक्षण और विकास का प्रावधान करने वाले कानूनों के क्रियान्वयन न होने से संबंधित] शिकायतों की जाँच करना" शामिल है।

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13S9	When foreign universities come home जब विदेशी विश्वविद्यालय देश में ही आने लगे	



When foreign universities come home

Foreign universities have taken steps to establish their off-shore campuses with the permission of the University Grants Commission. While one section feels that this is a good development, there are others who argue that Indian students will be better off studying at the parent campus of foreign universities, interacting with foreign students, and having multicultural exchanges. **Jayanth R.** takes a look

SSM Governance

Until recently, some 7 lakh students from India used to go to foreign universities every year. The United States of America, Australia, Canada, England, and Germany were among the key destinations. According to the Ministry of External Affairs data, the number of students going abroad from India has now decreased by about 40%. This year, only 2 lakh to 3 lakh students have gone to foreign universities.

At the same time, an increasing number of foreign universities are pitching their tents in India, opening their off-shore campuses here and offering the "foreign-educated" tag. Bengaluru appears to be one of the key destinations for many of them, with two universities — one each from Australia and the United Kingdom — already opening their campuses and starting academic activities from 2026-27, while more are in the pipeline. Driven by the National Education Policy (NEP-2020), foreign universities have taken steps to establish their off-shore campuses with the permission of the University Grants Commission (UGC).

While one section feels that the arrival of foreign universities will bring in foreign research, increase new innovations, enhance tourism and foster intellectual growth, there are those who argue that Indian students will be better off studying at the parent campus of foreign universities, interacting with foreign students and having multicultural exchanges. There is also a fear that foreign universities will have an impact on local universities.



How rules have changed

Earlier, foreign universities were not allowed to operate directly in India. However, many higher educational institutes are operating in collaboration with foreign universities for research activities, cultural and student exchange and other programmes.

Students who wanted a foreign university degree would go abroad, some on government and university scholarships. Many students used to find placements through educational consultants or agencies at their own expenses.

But in recent years, countries such as the U.S. and Canada have tightened student visa rules, while Australia has increased student visa fees by a huge margin. The number of students going abroad has also fallen significantly owing to higher tuition fees, with the value of the rupee constantly falling against the U.S. dollar and education loans getting more expensive, among other reasons.

At this juncture, NEP-2020, implemented by the Union government from 2022, allowed foreign universities to operate in the country. Since then, around 18 global ranking universities have been approved by the University Grants Commission (UGC) to open campuses in India. Seven of them are from Australia.

Two foreign universities have already started



These universities produce graduates with global-level qualifications. Where they secure employment depends on the individual. Our primary focus is delivering global-quality education for a range of jurisdictions

PHILIP GREEN,
Australia's High Commissioner to India

operations in Bengaluru. Australia's University of New South Wales (UNSW) and the U.K.-based University of Liverpool have established campuses at Mayratta Business Park and the Alembic City complex in Bengaluru.

Four other foreign institutions — Imperial College London, Lancaster University, La Trobe University and Flinders University — are planning to start operations in and around Bengaluru. To apply at these universities, English language proficiency is a must. At UNSW, students have to prove their proficiency, if English is not their first language, and the University of Liverpool demands a minimum 70% in English language at class 12 in any board.

University of Liverpool offers BSc (Hons) and Masters in Accounting and Finance, Biomedical Sciences, Computer Science, Computer Science and Software Development, Game Design, and BA in Business Management. UNSW has started Bachelor's programmes in Business, Computer Science, Data Science and Decisions, Media, Public Relations and Advertising and Masters in Cyber Security.

What it costs

Though not comparable to what it costs to study abroad, degrees here too come with a heavy price tag. Undergraduate (UG) courses at UNSW charge around ₹15 lakh for Indian residents per year and for Masters in Cyber Security, it is around ₹19 lakh for resident Indians and ₹22 lakh for Non Resident Indians.

The annual fee structure at University of Liverpool ranges between ₹11.5 lakh for undergraduate ones. However, the universities offer scholarships for eligible students.

Bengaluru, favourite destination

Many foreign universities are eager to set up their campuses in Bengaluru for many reasons, including the State government's policies that make processes simpler, technology availability, and access to qualified human resources.

Suresh Renkappa, Director of JSS AHER-Wolverhampton Centre for Future Healthcare and Policy Innovation University of Wolverhampton, U.K., said: "The NEP-2020 created an enabling environment for internationalisation, and subsequent regulatory developments have provided clearer routes for foreign universities to establish a presence in India. International universities also see India's demographic scale, demand for higher education, expanding middle class, rapidly growing innovation economy and increasing global importance."

"Bengaluru is particularly attractive because it combines higher education, technology, entrepreneurship, multinational companies, start-ups, health-care, research and a

highly skilled workforce within one ecosystem. For a university, that is extremely important," he said.

"Students can potentially receive an international education and qualification without bearing the full financial and personal cost of studying overseas. This emerging model is already visible in programmes offered in India in areas such as computer science, AI, data science, finance and business. But the benefits should go beyond the degree. A successful international campus should provide students with international curricula, global faculty engagement, industry exposure, research opportunities, and access to international networks," he said.

Australia too is aggressively expanding its higher education footprint in India, shifting from traditional institutional alliances toward major new partnerships and dedicated physical branch campuses.

Australia's High Commissioner to India, Philip Green, said Bengaluru has emerged as one of the primary areas for this expansion, highlighted by UNSW securing formal regulatory clearance to open a campus in the city. "Australia is the first country to establish foreign branch campuses in India. Two Australian universities are already operational in Gujarat's GIFT City. Following them, five more are scheduled to open across the country. Each of these universities has a unique plan regarding student intake, course offerings, and employment pipelines," he noted.

When queried if Indian graduates from these local Australian campuses would secure employment directly in Australia, Philip emphasised what he called "borderless value attached to higher-education and skill sets."

"These universities produce graduates with global-level qualifications. Where they secure employment depends on the individual. Our primary focus is delivering global-quality education for a range of jurisdictions," he said.

To maximise outcomes, the Australian High Commission is linking inbound universities with Australian companies in India. "We are mapping out internships that Australian corporates in India can offer to these students, ultimately building direct pathways to employment," he explained.

Little room for regulation

However, there have also been some concerns over how the State government cannot regulate these entities, be it in terms of fees, reservation of seats for native students or Constitution-based reservations policies.

The Higher Education Department has clarified that foreign universities are autonomous institutions and have received permission directly from the UGC. "We have provided the necessary infrastructure to operate in our State. Otherwise, all administrative decisions, including fees, curriculum, examinations are up to the respective universities," an official said.

While the State government has withdrawn the education from 2025-26 and implemented the recommendations of the State Education Policy (SEP) Commission, foreign universities lie outside its purview.

The State government has decided to provide

space in the KWIN City to foreign universities. To invite foreign universities to Karnataka, M.B. Patil, Minister for Large and Medium Industries, held a roadshow in the U.K. and held a series of strategic meetings, ahead of the Invest Karnataka-2025.

Where do these developments leave private consultants? Shiva Krishna, a study abroad consultant in Bengaluru, said that entities like them continue to play an important role in enrolments. "Many of these universities invite consultants and agencies for campus visits and explain the courses, facilities etc. But there is still confusion over whether the students should be admitted to Indian campuses or sent to foreign campuses," he said.

He emphasised that the quality of education and experience is key. "To get admission in universities abroad, students have to face a separate exam. There is no exam for admission to foreign universities campuses in India. It is important to maintain quality. Also, foreign universities starting campuses in India should not just give degrees to students, but should give them real experience of studying abroad. If Indians are 5% of the students abroad, those from other countries form the 95%. The same kind of environment should be created here too. If 100% of the students are Indian here, the concept of a foreign university will not be fulfilled," he stated.

Career counsellor Ameen-e-Mudassar too believes that with foreign universities opening campuses in India, Indian students would miss out on the chance to immerse themselves in the multiculturalism abroad.

"When students go abroad, they spend money there, eat their food, meet people from different countries and different cultures. For example, Sundar Pichai, CEO of Google, Satya Nadella, CEO of Microsoft and other Indian origin CEOs went abroad, studied there and groomed themselves on the world stage. Therefore, a grooming environment is very important for students. Students may miss out on all these global opportunities here," he said.

Students' take

Students too have mixed opinions. Monica C.G., a student from Bengaluru who intends to pursue her Master's degree abroad, said, "I want to pursue a postgraduate degree in the U.S. But owing to strict visa rules and high fees, my parents are suggesting that I continue my education in foreign universities that are starting in India. However, the curriculum, technology, research activities of U.S. universities are advanced compared to those in other countries. I am worried that if I study in India, I will miss this. Higher education is not just about getting a certificate. So, I am very confused."

Taking a different view, another student, Minerva said: "Instead of leaving my friends and family and going abroad, it is better to study in a foreign university that is starting in our country. The cost will be less too."

Impact on local universities

A section of academics argue that while the arrival of foreign universities in India has many advantages, they could adversely impact public universities.

A.N. Prabhu Dev, former Vice-Chancellor of Bangalore University, said, "Our public universities have a 40% to 50% shortage of permanent staff. Most universities depend on guest lectures for their academic activities. In such a situation, if foreign universities come and pay higher salaries, our best faculty may leave their jobs and go to foreign universities. The number of students in universities will also fall."

He argued that the government should focus on quality education in public universities by providing necessary infrastructure and filling vacancies.

13S9. When foreign universities come home

जब विदेशी विश्वविद्यालय देश में ही आने लगें

- Bengaluru appears to be one of the key destinations for many of them, **with two universities — one each from Australia and the United Kingdom — already opening their campuses and starting academic activities from 2026-27**, while more are in the pipeline.

बैंगलुरु उनमें से कई के लिए प्रमुख गंतव्यों में से एक प्रतीत होता है, जहाँ दो विश्वविद्यालय — एक ऑस्ट्रेलिया से और एक यूनाइटेड किंगडम से — पहले ही अपने परिसर खोल चुके हैं और 2026-27 से शैक्षणिक गतिविधियाँ शुरू कर चुके हैं, जबकि कई अन्य विश्वविद्यालय भी कतार में हैं।

- Driven by the **National Education Policy (NEP-2020)**, foreign universities have taken steps to establish their offshore campuses with the permission of the **University Grants Commission (UGC)**.

राष्ट्रीय शिक्षा नीति (NEP-2020) से प्रेरित होकर विदेशी विश्वविद्यालयों ने विश्वविद्यालय अनुदान आयोग (UGC) की अनुमति से अपने ऑफशोर कैंपस स्थापित करने के लिए कदम उठाए हैं।

- While one section feels that the arrival of foreign universities will bring in foreign research, increase new innovations, enhance tourism and foster intellectual growth, there are those

who argue that Indian students will be better off studying at the parent campus of foreign universities, interacting with foreign students and having multicultural exchanges.

जहाँ एक वर्ग का मानना है कि विदेशी विश्वविद्यालयों के आगमन से विदेशी अनुसंधान आएगा, नए नवाचार बढ़ेंगे, पर्यटन को बढ़ावा मिलेगा और बौद्धिक विकास को प्रोत्साहन मिलेगा, वहीं कुछ लोगों का तर्क है कि भारतीय विद्यार्थियों के लिए विदेशी विश्वविद्यालयों के मूल परिसर में अध्ययन करना, विदेशी विद्यार्थियों के साथ संवाद करना और बहुसांस्कृतिक आदान-प्रदान करना अधिक लाभकारी होगा।

How rules have changed

नियमों में कैसे बदलाव आया है

- Earlier, foreign universities were not allowed to operate directly in India. पहले विदेशी विश्वविद्यालयों को भारत में सीधे संचालन की अनुमति नहीं थी।
- However, many higher educational institutions were operating in collaboration with foreign universities for research activities, cultural and student exchange and other programmes. हालाँकि, कई उच्च शिक्षण संस्थान अनुसंधान गतिविधियों, सांस्कृतिक एवं छात्र विनिमय तथा अन्य कार्यक्रमों के लिए विदेशी विश्वविद्यालयों के साथ सहयोग में कार्य कर रहे थे।
- But in recent years, countries such as the U.S. and Canada have tightened student visa rules, while Australia has increased student visa fees by a huge margin. लेकिन हाल के वर्षों में अमेरिका और कनाडा जैसे देशों ने छात्र वीजा नियमों को कड़ा कर दिया है, जबकि ऑस्ट्रेलिया ने छात्र वीजा शुल्क में बहुत अधिक वृद्धि की है।
- The number of students going abroad has also fallen significantly owing to higher tuition fees, with the value of the rupee constantly falling against the U.S. dollar and education loans getting more expensive, among other reasons. अन्य कारणों के साथ-साथ उच्च शिक्षण शुल्क, अमेरिकी डॉलर के मुकाबले रुपये के मूल्य में लगातार गिरावट और शिक्षा ऋणों के महँगा होने के कारण विदेश जाने वाले विद्यार्थियों की संख्या में भी उल्लेखनीय गिरावट आई है।
- At this juncture, **NEP-2020**, implemented by the Union government from 2022, allowed foreign universities to operate in the country. इस स्थिति में, केंद्र सरकार द्वारा 2022 से लागू की गई **NEP-2020** ने विदेशी विश्वविद्यालयों को देश में संचालन की अनुमति दी।
- Since then, around 18 global ranking universities have been approved by the **University Grants Commission (UGC)** to open campuses in India. तब से लगभग 18 वैश्विक रैंकिंग वाले विश्वविद्यालयों को भारत में परिसर खोलने के लिए **विश्वविद्यालय अनुदान आयोग (UGC)** द्वारा मंजूरी दी गई है।
- Seven of them are from Australia. इनमें से सात ऑस्ट्रेलिया से हैं।
- Two foreign universities have already started operations in Bengaluru. दो विदेशी विश्वविद्यालयों ने बेंगलुरु में पहले ही अपना संचालन शुरू कर दिया है।
- Australia's **University of New South Wales (UNSW)** and the U.K.-based **University of Liverpool** have established campuses at Manyata Business Park and the Alembic City complex in Bengaluru. ऑस्ट्रेलिया के **University of New South Wales (UNSW)** और U.K.-स्थित **University of Liverpool** ने बेंगलुरु के Manyata Business Park और Alembic City complex में परिसर स्थापित किए हैं।
- Four other foreign institutions — **Imperial College London, Lancaster University, La Trobe University and Flinders University** — are planning to start operations in and around Bengaluru. चार अन्य विदेशी संस्थान — **Imperial College London, Lancaster University, La Trobe**

University और Flinders University — बेंगलुरु और उसके आसपास अपना संचालन शुरू करने की योजना बना रहे हैं।

- To apply at these universities, English language proficiency is a must.
इन विश्वविद्यालयों में आवेदन करने के लिए अंग्रेजी भाषा में **दक्षता** अनिवार्य है।

What it costs

इसकी लागत कितनी है

- Though not comparable to what it costs to study abroad, degrees here too come with a heavy price tag.
हालाँकि यह विदेश में अध्ययन करने की लागत के बराबर नहीं है, फिर भी यहाँ की डिग्रियाँ भी काफी महँगी हैं।
- Undergraduate (UG) courses at UNSW charge around ₹15 lakh for Indian residents per year and for Masters in Cyber Security, it is around ₹19 lakh for resident Indians and ₹22 lakh for Non Resident Indians.
UNSW में Undergraduate (UG) पाठ्यक्रमों की फीस भारतीय निवासियों के लिए लगभग ₹15 लाख प्रति वर्ष है और Cyber Security में Masters के लिए यह भारतीय निवासियों के लिए लगभग ₹19 लाख तथा Non-Resident Indians के लिए ₹22 लाख है।
- The annual fee structure at University of Liverpool ranges between ₹11.5 lakh for undergraduate programmes and ₹15 lakh for the postgraduate ones.
University of Liverpool में वार्षिक शुल्क संरचना undergraduate programmes के लिए ₹11.5 लाख से लेकर postgraduate programmes के लिए ₹15 लाख तक है।
- However, the universities offer scholarships for eligible students.
हालाँकि, विश्वविद्यालय पात्र विद्यार्थियों के लिए छात्रवृत्तियाँ प्रदान करते हैं।

Bengaluru, favourite destination

बेंगलुरु, पसंदीदा गंतव्य

- Many foreign universities are eager to set up their campuses in Bengaluru for many reasons, including the State government's policies that make processes simpler, technology availability, and access to qualified human resources.
कई विदेशी विश्वविद्यालय अनेक कारणों से बेंगलुरु में अपने परिसर स्थापित करने के इच्छुक हैं, जिनमें राज्य सरकार की ऐसी नीतियाँ शामिल हैं जो प्रक्रियाओं को सरल बनाती हैं, प्रौद्योगिकी की उपलब्धता और योग्य मानव संसाधन तक पहुँच।
- International universities also see India's demographic scale, demand for higher education, expanding middle class, rapidly growing innovation economy and increasing global importance.
अंतरराष्ट्रीय विश्वविद्यालय भारत के जनसांख्यिकीय विस्तार, उच्च शिक्षा की माँग, विस्तृत हो रहे मध्यम वर्ग, तेजी से बढ़ती नवाचार अर्थव्यवस्था और बढ़ते वैश्विक महत्व को भी देखते हैं।
- "Bengaluru is particularly attractive because it combines higher education, technology, entrepreneurship, multinational companies, start-ups, healthcare, research and a highly skilled workforce within one ecosystem."
"बेंगलुरु विशेष रूप से आकर्षक है क्योंकि यहाँ एक ही पारिस्थितिकी तंत्र के भीतर उच्च शिक्षा, प्रौद्योगिकी, उद्यमिता, बहुराष्ट्रीय कंपनियाँ, स्टार्ट-अप, स्वास्थ्य सेवा, अनुसंधान और अत्यधिक कुशल कार्यबल मौजूद हैं।
- For a university, that is extremely important," he said.
किसी विश्वविद्यालय के लिए यह अत्यंत महत्वपूर्ण है," उन्होंने कहा।
- "Students can potentially receive an international education and qualification without bearing the full financial and personal cost of studying overseas."

“विद्यार्थी विदेश में अध्ययन की पूरी वित्तीय और व्यक्तिगत लागत वहन किए बिना अंतरराष्ट्रीय शिक्षा और योग्यता प्राप्त कर सकते हैं।

- This emerging model is already visible in programmes offered in India in areas such as computer science, AI, data science, finance and business.
यह उभरता हुआ मॉडल भारत में Computer Science, AI, Data Science, Finance और Business जैसे क्षेत्रों में पेश किए जा रहे programmes में पहले से दिखाई दे रहा है।
- But the benefits should go beyond the degree.
लेकिन इसके लाभ केवल डिग्री तक सीमित नहीं होने चाहिए।
- A successful international campus should provide students with international curricula, global faculty engagement, industry exposure, research opportunities, and access to international networks,” he said.
एक सफल अंतरराष्ट्रीय परिसर को विद्यार्थियों को अंतरराष्ट्रीय पाठ्यक्रम, वैश्विक संकाय के साथ सहभागिता, उद्योग का अनुभव, अनुसंधान के अवसर और अंतरराष्ट्रीय नेटवर्क तक पहुँच प्रदान करनी चाहिए,” उन्होंने कहा।
- “Australia is the first country to establish foreign branch campuses in India.
“ऑस्ट्रेलिया भारत में विदेशी शाखा परिसरों की स्थापना करने वाला पहला देश है।

Little room for regulation विनियमन की सीमित गुंजाइश

- However, there have also been some concerns over how the State government cannot regulate these entities, be it in terms of fees, reservation of seats for native students or Constitution-based reservations policies.
हालाँकि, इस बात को लेकर भी कुछ चिंताएँ हैं कि राज्य सरकार इन संस्थाओं को विनियमित नहीं कर सकती, चाहे वह शुल्क, स्थानीय विद्यार्थियों के लिए सीटों के आरक्षण या संविधान-आधारित आरक्षण नीतियों के संदर्भ में हो।
- The Higher Education Department has clarified that foreign universities are autonomous institutions and have received permission directly from the UGC.
उच्च शिक्षा विभाग ने स्पष्ट किया है कि विदेशी विश्वविद्यालय स्वायत्त संस्थान हैं और उन्होंने सीधे UGC से अनुमति प्राप्त की है।
- “We have provided the necessary infrastructure to operate in our State.
“हमने अपने राज्य में संचालन के लिए आवश्यक अवसंरचना उपलब्ध कराई है।
- Otherwise, all administrative decisions, including fees, curriculum, examinations are up to the respective universities,” an official said.
अन्यथा, शुल्क, पाठ्यक्रम और परीक्षाओं सहित सभी प्रशासनिक निर्णय संबंधित विश्वविद्यालयों के अधिकार क्षेत्र में हैं,” एक अधिकारी ने कहा।
- While the State government has withdrawn the NEP-2020 in higher education from 2025-26 and implemented the recommendations of the State Education Policy (SEP) Commission, foreign universities lie outside its purview.
जहाँ राज्य सरकार ने 2025-26 से उच्च शिक्षा में NEP-2020 को वापस ले लिया है और State Education Policy (SEP) Commission की सिफारिशों को लागू किया है, वहीं विदेशी विश्वविद्यालय उसके अधिकार क्षेत्र से बाहर हैं।
- The State government has decided to provide space in the KWIN City to foreign universities.
राज्य सरकार ने विदेशी विश्वविद्यालयों को KWIN City में स्थान उपलब्ध कराने का निर्णय लिया है।
- To invite foreign universities to Karnataka, M.B. Patil, Minister for Large and Medium Industries, held a roadshow in the U.K. and held a series of strategic meetings, ahead of the Invest Karnataka-2025.
विदेशी विश्वविद्यालयों को कर्नाटक आमंत्रित करने के लिए Large and Medium Industries के मंत्री M.B.

Patil ने Invest Karnataka-2025 से पहले U.K. में एक रोडशो आयोजित किया और रणनीतिक बैठकों की एक श्रृंखला की।

- But there is still confusion over whether the students should be admitted to Indian campuses or sent to foreign campuses,” he said.
लेकिन अभी भी इस बात को लेकर भ्रम है कि विद्यार्थियों को भारतीय परिसरों में प्रवेश दिया जाना चाहिए या विदेशी परिसरों में भेजा जाना चाहिए,” उन्होंने कहा।
- He emphasised that the quality of education and experience is key.
उन्होंने जोर दिया कि शिक्षा और अनुभव की गुणवत्ता महत्वपूर्ण है।
- Also, foreign universities starting campuses in India should not just give degrees to students, but should give them real experience of studying abroad.
इसके अलावा, भारत में परिसर शुरू करने वाले विदेशी विश्वविद्यालयों को विद्यार्थियों को केवल डिग्री ही नहीं देनी चाहिए, बल्कि उन्हें विदेश में अध्ययन करने का वास्तविक अनुभव भी प्रदान करना चाहिए।
- If Indians are 5% of the students abroad, those from other countries form the 95%.
यदि विदेश में अध्ययन करने वाले विद्यार्थियों में भारतीयों की संख्या 5% है, तो अन्य देशों के विद्यार्थी 95% हैं।
- Career counsellor Ameen e-Mudassar too believes that with foreign universities opening campuses in India, Indian students would miss out on the chance to immerse themselves in multiculturalism abroad.
करियर काउंसलर Ameen e-Mudassar का भी मानना है कि भारत में विदेशी विश्वविद्यालयों के परिसर खुलने से भारतीय विद्यार्थी विदेशों की बहुसांस्कृतिकता में स्वयं को पूरी तरह समाहित करने के अवसर से वंचित हो सकते हैं।
- “When students go abroad, they spend money there, eat their food, meet people from different countries and different cultures.
“जब विद्यार्थी विदेश जाते हैं, तो वे वहाँ पैसा खर्च करते हैं, वहाँ का भोजन करते हैं और विभिन्न देशों तथा विभिन्न संस्कृतियों के लोगों से मिलते हैं।
- For example, Sundar Pichai, CEO of Google, Satya Nadella, CEO of Microsoft and other Indian origin CEOs went abroad, studied there and groomed themselves on the world stage.
उदाहरण के लिए, Google के CEO Sundar Pichai, Microsoft के CEO Satya Nadella और भारतीय मूल के अन्य CEOs विदेश गए, वहाँ अध्ययन किया और स्वयं को वैश्विक मंच के लिए तैयार किया।
- Most universities depend on guest lectures for their academic activities.
अधिकांश विश्वविद्यालय अपनी शैक्षणिक गतिविधियों के लिए अतिथि व्याख्याताओं पर निर्भर हैं।

GS Paper II: International Relations		13 September 2026
TOPICS COVERED		
13S9	BRICS nations fortify disease monitoring BRICS राष्ट्रों ने रोग निगरानी को सुदृढ़ किया	
13S9	The new lords of the Red Sea लाल सागर के नए शासक	



BRICS nations fortify disease monitoring

GS II: IR

Press Trust of India
NEW DELHI

BRICS leaders on Saturday called for stronger cooperation in disease surveillance and medical product regulation, welcoming the establishment of a dedicated sub-working group to advance an integrated early warning system for the prevention and response to mass infectious diseases.

In their New Delhi Declaration, the leaders stressed the importance of strengthening health infrastructure and local production of medical products to enhance preparedness for future health emergencies and ensure timely, affordable and equitable access to healthcare services, vaccines, therapeutics and diagnostics. They also called for strengthened collaboration among

BRICS medical products regulatory authorities and welcomed efforts to develop a common GxP white paper consolidating regulatory best practices and technical approaches.

The leaders recognised that infectious disease outbreaks, zoonotic threats, antimicrobial resistance and other public health emergencies transcend national borders and require stronger international cooperation.

Recognising the central role of the World Health Organization and the amended International Health Regulations (2005), the leaders underscored the importance of resilient surveillance, early warning and rapid response systems and coordination.

The initiative is aimed at boosting collective preparedness against infectious disease threats through closer coordination.

international cooperation.

नेताओं ने स्वीकार किया कि **संक्रामक रोगों का प्रकोप, जूनोटिक खतरे और रोगाणुरोधी प्रतिरोध** तथा अन्य सार्वजनिक स्वास्थ्य आपात स्थितियाँ राष्ट्रीय सीमाओं से परे प्रभाव डालती हैं और इनके लिए अधिक सुदृढ़ अंतरराष्ट्रीय सहयोग की आवश्यकता है।

13S9. BRICS nations fortify disease monitoring

BRICS राष्ट्रों ने रोग निगरानी को सुदृढ़ किया

- BRICS leaders on Saturday called for stronger cooperation in disease surveillance and medical product regulation, welcoming the establishment of a dedicated sub-working group to advance an **integrated early warning system** for the prevention and response to mass infectious diseases.

शनिवार को BRICS नेताओं ने रोग निगरानी और चिकित्सा

उत्पाद विनियमन में अधिक सुदृढ़ सहयोग का आह्वान किया तथा बड़े पैमाने पर संक्रामक रोगों की रोकथाम और उनसे निपटने के लिए एकीकृत प्रारंभिक चेतावनी प्रणाली को आगे बढ़ाने हेतु एक समर्पित उप-कार्य समूह की स्थापना का स्वागत किया।

- They also called for strengthened collaboration among **BRICS medical products regulatory authorities** and welcomed efforts to develop a common **GxP white paper** consolidating regulatory best practices and technical approaches.

उन्होंने **BRICS चिकित्सा उत्पाद विनियामक प्राधिकरणों** के बीच सुदृढ़ सहयोग का भी आह्वान किया तथा विनियामक सर्वोत्तम प्रथाओं और तकनीकी दृष्टिकोणों को समेकित करने वाले एक साझा **GxP श्वेत पत्र** को विकसित करने के प्रयासों का स्वागत किया।

- The leaders recognised that **infectious disease outbreaks, zoonotic threats, antimicrobial resistance** and other public health emergencies transcend national borders and require stronger



The new lords of the Red Sea

The Houthis vs Saudi Arabia

A parallel state in Yemen, an ideologically committed base, years of warfare, control of the Red Sea coastline and sustained Iranian support have all helped the Shia militant group transform itself into a formidable territorial army and naval force

Stanley Jolly

In July 13, an Iranian civilian aircraft carrying a high-level Houthi delegation was heading towards Sana'a, Yemen's capital. Under an unwritten understanding between the Houthis (or Ansar Allah), who control northern and northwestern Yemen, including Sana'a, and the country's Saudi-backed government, planes seeking to land in Houthi-held territory were required to obtain prior approval. The Houthi delegation had left Yemen on July 3 on another Iranian aircraft to attend the funeral of Ayatollah Ali Khamenei, Iran's Supreme Leader who was assassinated by the U.S. and Israel on February 28.

Yemen's Saudi-backed government had protested the Iranian plane transporting Houthi leaders. It also opposed the delegation taking an Iranian plane back home, and instead offered to facilitate their return on a non-Iranian airline. The government's main concern was that the flight could also be used to transport personnel of Iran's Islamic Revolutionary Guard Corps (IRGC) and military equipment to Yemen. The Houthis, nevertheless, chose to return on a Mahan Air flight. To prevent the aircraft from landing, Saudi-backed forces bombed the runway of Sana'a airport, forcing the plane to land in Hodeidah. This was the trigger.

The Houthis responded by bombing Saudi energy infrastructure and launching an offensive in Hodeidah and Taiz governorates. They also imposed a naval blockade on Saudi vessels in the Red Sea. Within two months, the Houthis made dramatic territorial gains, seizing the entire Red Sea coastline of Yemen and taking the Bab el-Mandeb Strait, the narrow chokepoint connecting the Red Sea and the Gulf of Aden, under their control.

A revivalist movement
The roots of the Houthi movement can be traced to 'Believing Youth', a Zaydi revivalist group founded in Northern Yemen in the early 1990s. Hussein al-Houthi and his father, Badr al-Din al-Houthi, influential Zaydi clerics in

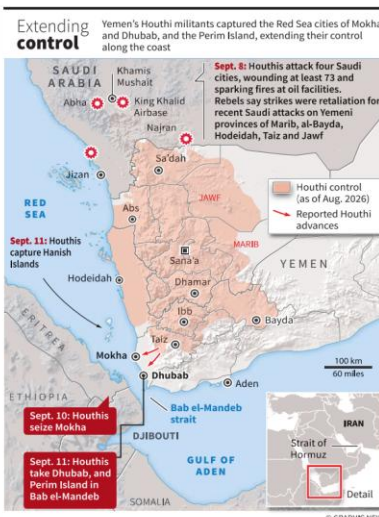
northern Yemen, became the movement's leading figures. Inspired by the Iranian revolution of 1979 and the rise of Hezbollah in southern Lebanon in the 1980s, Badr al-Din and his sons started building vast social and religious networks among the Zaydi Shias of Yemen, who make up roughly one-third of the Sunni-majority country's population.

In 2004, Ali Abdullah Saleh's government, upset with the growing popularity and rebellion of the Houthis, issued an arrest warrant against Hussein. He resisted the arrest, starting an insurgency. In September, government troops attacked the rebels and killed Hussein. But the movement he led would only grow, forcing Saleh to step down in 2012 and capturing Sana'a in 2014.

Alarmed by the rise of an Iran-aligned Shia militia across its southern border, Saudi Arabia formed a coalition and declared war against the Houthis in 2015. An intense bombing campaign followed, but the Saudi-led coalition failed to dislodge the rebels, who built a parallel state in northern Yemen. In 2022, amid a broader rapprochement between Iran and Saudi Arabia, the Houthis and Saudi-backed forces agreed to a ceasefire.

The Saudis also struggled to build a credible counterweight to the Houthis inside Yemen. The top leadership of the government was based in Saudi Arabia, while in the south, the UAE-backed Southern Transitional Council broke with the government and pursued its own separatist agenda, further weakening the anti-Houthi camp.

The ceasefire allowed the Houthis to consolidate their position in the north and northwest, despite economic woes. The parallel state, an ideologically committed base, years of warfare and sustained Iranian support enabled the group to transform itself into a formidable territorial army. Their access to the Red Sea, a key shipping route, raised their profile as a naval force. When Israel launched a devastating war on Palestinians in Gaza following Hamas's October 7, 2023 attack, Houthis "declared war" against Israel "in solidarity with the



Palestinians". In March 2025, U.S. President Donald Trump announced a major air and naval operation against the Houthis, threatening to destroy the group. Despite the enormous firepower brought against them, the Houthis continued launching missiles and drones at U.S. naval forces. Seven weeks later, Mr. Trump announced an end to the U.S. strikes.

After the U.S. and Israel launched the war on Iran on February 28, the Houthis, to the surprise of many, stayed out of the conflict. Iran retaliated by attacking American bases in the Persian Gulf and shutting down the Strait of Hormuz. The

Houthis understood that Iran's closure of the strait strengthened their strategic position: they had the capacity to disrupt maritime traffic through the Red Sea. They also wanted the Saudi blockade of their air space and ports lifted. In the first week of July, as a second round of bombings between Iran and the U.S. was unfolding, the Houthis decided to test Saudi Arabia's resolve by sending a delegation to Iran on an Iranian plane. Saudi Arabia responded by bombing the runway at Sana'a airport as the delegation was returning, effectively breaking the ceasefire. Then the Houthis moved rapidly up

the escalation ladder.

Renewed conflict brings Saudi Arabia under enormous pressure. After traffic through the Strait of Hormuz was disrupted by Iran, Riyadh increasingly relied on its Red Sea terminals to export crude oil. Saudi Arabia's East-West Pipeline, connecting its oil fields in the east with the ports on the Red Sea, allowed the Kingdom to skirt the impact of the disruptions in Hormuz to a certain extent. But the Houthis, after the ceasefire broke down, directly targeted Saudi oil infrastructure, apparently in coordination with Iran-aligned Shia militants in Iraq. On September 11, Saudi Arabia announced that the pipeline was shut, following drone attacks from Iraq. In Yemen, in a lightning offensive launched in early September, the Houthis captured the port cities of Mokha and Dhahab and the Perim Island in the Bab el-Mandeb, extending their control along the coast and into the strait.

Two chokepoints

More than 20% of the world's seaborne oil trade passed through the Strait of Hormuz before the U.S. and Israel attacked Iran. The Red Sea, which connects Asia and Europe through the Suez Canal in the north and Bab el-Mandeb in the south, typically carries roughly 12-15% of global trade. This means that Iran and Ansar Allah now have the ability to exert pressure on two of the world's critical maritime chokepoints.

On February 27, before the war, both the Strait of Hormuz and the Bab el-Mandeb Strait were open, and Iran was prepared to make concessions on its nuclear programme. On June 17, when the U.S. and Iran signed an MoU, committing Tehran to reopen the Strait of Hormuz in return for sanctions relief from the U.S. and a regional ceasefire involving Lebanon, the Bab el-Mandeb was still fully open. Today, maritime traffic through both the chokepoints is disrupted, any regional ceasefire will have to include Yemen, and any final settlement will have to address the Houthis' demands, while Iran's nuclear programme has been pushed to the back burner.

THE GIST

More than 20% of the world's seaborne oil trade passed through the Strait of Hormuz before the U.S. and Israel attacked Iran

The Red Sea, which connects Asia and Europe through the Suez Canal in the north and Bab el-Mandeb in the south, typically carries roughly 12-15% of global maritime trade

Iran and Ansar Allah, one of its closest allies, now have the ability to exert pressure on two of the world's critical maritime chokepoints

13S9. The new lords of the Red Sea

लाल सागर के नए शासक

- Within two months, the Houthis made dramatic territorial gains, seizing the entire Red Sea coastline of Yemen and taking the Bab el-Mandeb Strait, the narrow chokepoint connecting the Red Sea and the Gulf of Aden, under their control.

दो महीनों के भीतर, हूतियों ने उल्लेखनीय क्षेत्रीय बढ़त हासिल की, यमन के पूरे लाल सागर तट पर कब्जा कर लिया और लाल सागर तथा अदन की खाड़ी को जोड़ने वाली संकरी बाब अल-मंदेब जलडमरूमध्य, जो एक महत्वपूर्ण चोकपॉइंट है, को अपने नियंत्रण में ले लिया।

A revivalist movement

एक पुनरुत्थानवादी आंदोलन

- The roots of the Houthi movement can be traced to 'Believing Youth', a Zaydi revivalist group founded in Northern Yemen in the early 1990s.

हूती आंदोलन की जड़ें 'बिलीविंग यूथ' नामक एक जैदी पुनरुत्थानवादी समूह तक जाती हैं, जिसकी स्थापना 1990 के दशक की शुरुआत में उत्तरी यमन में हुई थी।

- Hussein al-Houthi and his father, Badr al-Din al-Houthi, influential Zaydi clerics in northern Yemen, became the movement's leading figures.

हुसैन अल-हूती और उनके पिता बद्र अल-दीन अल-हूती, जो उत्तरी यमन के प्रभावशाली जैदी धर्मगुरु थे, इस आंदोलन के प्रमुख नेता बन गए।

- Inspired by the Iranian revolution of 1979 and the rise of Hezbollah in southern Lebanon in the 1980s, Badr al-Din and his sons started building vast social and religious networks among

the Zaydi Shias of Yemen, who make up roughly one-third of the Sunni-majority country's population.

1979 की ईरानी क्रांति और 1980 के दशक में दक्षिणी लेबनान में हिज़बुल्लाह के उदय से प्रेरित होकर, बद्र अल-दीन और उनके पुत्रों ने यमन के जैदी शियाओं के बीच व्यापक सामाजिक और धार्मिक नेटवर्क बनाना शुरू किया, जो सुन्नी-बहुल देश की आबादी का लगभग एक-तिहाई हिस्सा हैं।

- [Alarmed by the rise of an Iran-aligned Shia militia across its southern border, Saudi Arabia formed a coalition and declared war against the Houthis in 2015.](#)

अपनी दक्षिणी सीमा के पार ईरान-संबद्ध शिया मिलिशिया के उदय से चिंतित होकर, सऊदी अरब ने एक गठबंधन बनाया और 2015 में हूतियों के खिलाफ युद्ध की घोषणा की।

- An intense bombing campaign followed, but the Saudi-led coalition failed to dislodge the rebels, who built a parallel state in northern Yemen.

इसके बाद व्यापक बमबारी अभियान चलाया गया, लेकिन सऊदी नेतृत्व वाला गठबंधन विद्रोहियों को हटाने में विफल रहा, जिन्होंने उत्तरी यमन में एक समानांतर राज्य स्थापित कर लिया।

- [In 2022, amid a broader rapprochement between Iran and Saudi Arabia, the Houthis and Saudi-backed forces agreed to a ceasefire.](#)

2022 में ईरान और सऊदी अरब के बीच व्यापक सुलह के बीच, हूतियों और सऊदी समर्थित बलों ने युद्धविराम पर सहमति व्यक्त की।

- The Red Sea, which connects Asia and Europe through the Suez Canal in the north and [Bab el-Mandeb in the south, typically carries roughly 12-15% of global trade.](#)

लाल सागर, जो उत्तर में स्वेज नहर और दक्षिण में बाब अल-मंदेब के माध्यम से एशिया और यूरोप को जोड़ता है, सामान्यतः वैश्विक व्यापार के लगभग 12-15% को वहन करता है।

- [This means that Iran and Ansar Allah now have the ability to exert pressure on two of the world's critical maritime chokepoints.](#)

इसका अर्थ है कि ईरान और अंसार अल्लाह के पास अब दुनिया के दो महत्वपूर्ण समुद्री चोकपॉइंट्स पर दबाव डालने की क्षमता है।

GS Paper III: Economy		13 September 2026
TOPICS COVERED		
13S9	Why are bank employees striking despite the PLI pause?	
	PLI पर रोक के बावजूद बैंक कर्मचारी हड़ताल क्यों कर रहे हैं?	

Why are bank employees striking despite the PLI pause?

Why did they oppose the new PLI scheme? What are their other demands? How has the government reacted?

GS III: Economy

T.C.A. Sharad Raghavan

The story so far:

The government recently announced that it was putting on hold the performance-linked incentive (PLI) system it had planned for public sector bank employees. However, the employees still went ahead with their strike on September 11, saying not all of their grievances have been addressed.

What are their main grievances?

One of the main reasons the United Forum of Bank Unions (UFBU), the umbrella body of seven bank employee unions, called for a nationwide strike on September 11 was to protest the PLI scheme announced by the Department of Financial Services in November 2024 and applicable for the financial year 2025-26.

This revised PLI scheme was applicable only to Scale IV officers and above, a major point of contention. It allows these senior officers to receive PLI of up to 365 days of basic pay based on individual performance.

This, according to the employee unions, was discriminatory in nature as it was a significant departure from the uniform 15 days basic pay plus dearness allowance formula applicable to the rest of the workforce.

The revised PLI scheme was also a departure from the agreement between the unions and the Indian Banks' Association in 2020 under which the PLI was to be linked to the overall performance of individual banks and would be uniform for employees and officers.

The second demand by the bank employees was for a five-day work week. The bank employees had in 2024 suggested increasing the work timings per day by 40 minutes so that there would not be a reduction in the total hours worked per week. This proposal has been pending with the government.

The bank employees had some other residual demands, such as a uniform dearness allowance formula for all pensioners and an option for employees covered under the National Pension System (NPS) to switch to the Old Pension Scheme (OPS). These, too, remain unresolved.

What has the government done to address the strike call?

A delegation of bank employees, led by the labour wing of the RSS, the Bharatiya Mazdoor Sangh, met Finance Minister Nirmala Sitharaman and officials of the Department of Financial Services on September 8.

Following the meeting, the Ministry of Finance announced that the PLI would be put on hold pending further discussion. It added that the bank employees also raised the issues of a review of ex-gratia and providing medical facilities for retired employees, among other concerns related to employees.

Why did this not work?

Following the meeting, UFBU took to social media to acknowledge that the meeting did take place and confirmed the agreement with the government to put the PLI scheme on hold. However, it added that there was "no positive development" regarding its demand for a five-day work week. As a result, the strike call remained in effect. In fact, the bank unions have threatened another three-day nationwide strike from September 28 to 30, coinciding with the half-yearly closing period. They have also warned of a "continuous indefinite strike" from October 26 if their demands remain unaddressed.

What has been the immediate impact of the strike?

The bank unions have timed their strike carefully. The strike on September 11 meant that branch banking services were disrupted for four days in many parts of the country. The strike fell on a Friday (September 11). Saturday (September 12) was the second Saturday of the month, which is a day off for banks. Sunday (September 13) is a weekly off. Monday (September 14) is Ganesh Chaturthi, which is a holiday in several States across the country.

While the rise of app-based and Internet banking has led to falling footfall at bank branches, they remain the sole point of banking access for many senior citizens and customers in rural and semi-rural India. Several services, such as cheque and cash deposits, also still require customers to visit a bank branch.

Reports from across the country showed that most branches of public sector banks were either completely or partially closed on Saturday, with officers and employees taking part in the strike. This meant that physical services such as cash deposits, withdrawals, cheque clearances, and administrative work ground to a halt.

13S9. Why are bank employees striking despite the PLI pause?

PLI पर रोक के बावजूद बैंक कर्मचारी हड़ताल क्यों कर रहे हैं?

The story so far: The government recently announced that it was putting on hold the **performance-linked incentive (PLI) system** it had planned for public sector bank employees. अब तक की कहानी: सरकार ने हाल ही में घोषणा की कि वह सार्वजनिक क्षेत्र के बैंक कर्मचारियों के लिए प्रस्तावित प्रदर्शन-आधारित प्रोत्साहन (PLI) प्रणाली को फिलहाल रोक रही है।

However, the employees still went ahead with their strike on September 11, saying not all of their grievances have been addressed. हालाँकि, कर्मचारियों ने यह कहते हुए 11 सितंबर को अपनी हड़ताल जारी रखी कि उनकी सभी शिकायतों का समाधान नहीं किया गया है।

What are their main grievances?

उनकी मुख्य शिकायतें क्या हैं?

One of the main reasons the **United Forum of Bank Unions (UFBU)**, the umbrella body of seven bank employee unions, called for a nationwide strike on September 11 was to protest the **PLI scheme** announced by the Department of Financial

Services in November 2024 and applicable for the financial year 2025-26.

सात बैंक कर्मचारी यूनियनों के शीर्ष संगठन **यूनाइटेड फोरम ऑफ बैंक यूनियंस (UFBU)** द्वारा 11 सितंबर को राष्ट्रव्यापी हड़ताल का आह्वान करने का एक प्रमुख कारण नवंबर 2024 में वित्तीय सेवा विभाग द्वारा घोषित **PLI योजना** का विरोध करना था, जो वित्तीय वर्ष 2025-26 के लिए लागू थी।

- This revised **PLI scheme** was applicable only to **Scale IV officers and above**, a major point of contention.

यह संशोधित PLI योजना केवल स्केल IV अधिकारियों और उससे ऊपर के अधिकारियों पर लागू थी, जो विवाद का एक प्रमुख मुद्दा था।

- It allows these senior officers to receive PLI of up to 365 days of basic pay based on individual performance.
इसके तहत इन वरिष्ठ अधिकारियों को व्यक्तिगत प्रदर्शन के आधार पर अधिकतम 365 दिनों के मूल वेतन के बराबर PLI प्राप्त करने की अनुमति है।
- This, according to the employee unions, was discriminatory in nature as it was a significant departure from the **uniform 15 days basic pay plus dearness allowance formula** applicable to the rest of the workforce.
कर्मचारी यूनियनों के अनुसार, यह भेदभावपूर्ण प्रकृति का था, क्योंकि यह शेष कर्मचारियों पर लागू 15 दिनों के मूल वेतन तथा महंगाई भत्ते के समान सूत्र से एक महत्वपूर्ण विचलन था।
- The revised PLI scheme was also a departure from the agreement between the unions and the **Indian Banks' Association** in 2020 under which the **PLI was to be linked to the overall performance of individual banks and would be uniform for employees and officers**.
संशोधित PLI योजना 2020 में यूनियनों और इंडियन बैंक्स एसोसिएशन के बीच हुए समझौते से भी अलग थी, जिसके तहत PLI को प्रत्येक बैंक के समग्र प्रदर्शन से जोड़ा जाना था और यह कर्मचारियों तथा अधिकारियों के लिए समान होना था।
- The second demand by the bank employees was for a **five-day work week**.
बैंक कर्मचारियों की दूसरी माँग पाँच-दिवसीय कार्य सप्ताह की थी।
- The bank employees had in 2024 suggested increasing the work timings per day by 40 minutes so that there would not be a reduction in the total hours worked per week.
बैंक कर्मचारियों ने 2024 में सुझाव दिया था कि प्रतिदिन के कार्य समय में 40 मिनट की वृद्धि की जाए, ताकि प्रति सप्ताह कार्य किए जाने वाले कुल घंटों में कमी न हो।
- This proposal has been pending with the government.
यह प्रस्ताव सरकार के पास लंबित है।
- The bank employees had some other residual demands, such as a **uniform dearness allowance formula for all pensioners** and an option for employees covered under the **National Pension System (NPS)** to switch to the **Old Pension Scheme (OPS)**.
बैंक कर्मचारियों की कुछ अन्य लंबित माँगें भी थीं, जैसे सभी पेंशनभोगियों के लिए महंगाई भत्ते की एक समान गणना प्रणाली तथा राष्ट्रीय पेंशन प्रणाली (NPS) के अंतर्गत आने वाले कर्मचारियों को पुरानी पेंशन योजना (OPS) में जाने का विकल्प देना।
- These, too, remain unresolved.
ये माँगें भी अब तक अनसुलझी हैं।

What has the government done to address the strike call?

हड़ताल के आह्वान के समाधान के लिए सरकार ने क्या किया है?

- A delegation of bank employees, led by the labour wing of the RSS, the **Bharatiya Mazdoor Sangh**, met Finance Minister Nirmala Sitharaman and officials of the Department of Financial Services on September 8.
बैंक कर्मचारियों के एक प्रतिनिधिमंडल ने, जिसका नेतृत्व RSS की श्रमिक शाखा भारतीय मजदूर संघ ने किया, 8 सितंबर को वित्त मंत्री निर्मला सीतारमण और वित्तीय सेवा विभाग के अधिकारियों से मुलाकात की।
- Following the meeting, the Ministry of Finance announced that the **PLI would be put on hold pending further discussion**.
बैठक के बाद वित्त मंत्रालय ने घोषणा की कि **आगे की चर्चा होने तक PLI को रोक दिया जाएगा**।
- It added that the bank employees also raised the issues of a **review of ex-gratia** and providing **medical facilities for retired employees**, among other concerns related to employees.

मंत्रालय ने यह भी कहा कि बैंक कर्मचारियों ने कर्मचारियों से संबंधित अन्य चिंताओं के अलावा **अनुग्रह राशि (ex-gratia) की समीक्षा और सेवानिवृत्त कर्मचारियों को चिकित्सा सुविधाएँ प्रदान करने के मुद्दे** भी उठाए।

Why did this not work?

यह प्रयास क्यों सफल नहीं हुआ?

- Following the meeting, **UFBU** took to social media to acknowledge that the meeting did take place and confirmed the agreement with the government to put the **PLI scheme** on hold. बैठक के बाद **UFBU** ने सोशल मीडिया के माध्यम से स्वीकार किया कि बैठक हुई थी और **PLI योजना** को रोकने के लिए सरकार के साथ हुए समझौते की पुष्टि की।
- However, it added that there was “no positive development” regarding its demand for a **five-day work week**. हालाँकि, उसने कहा कि **पाँच-दिवसीय कार्य सप्ताह** की उसकी माँग के संबंध में “कोई सकारात्मक प्रगति” नहीं हुई।
- As a result, the strike call remained in effect. परिणामस्वरूप, हड़ताल का आह्वान प्रभावी बना रहा।
- In fact, the bank unions have threatened another **three-day nationwide strike from September 28 to 30**, coinciding with the half-yearly closing period. वास्तव में, बैंक यूनियनों ने अर्धवार्षिक समापन अवधि के साथ पड़ने वाली **28 से 30 सितंबर तक तीन-दिवसीय राष्ट्रव्यापी हड़ताल** की भी चेतावनी दी है।
- They has also warned of a “continuous indefinite strike” from October 26 if their demands remain unaddressed. उन्होंने यह भी चेतावनी दी है कि यदि उनकी माँगों का समाधान नहीं किया गया तो 26 अक्टूबर से “निरंतर अनिश्चितकालीन हड़ताल” की जाएगी।

What has been the immediate impact of the strike?

हड़ताल का तत्काल प्रभाव क्या रहा है?

- The bank unions have timed their strike carefully. बैंक यूनियनों ने अपनी हड़ताल का समय सावधानीपूर्वक निर्धारित किया है।
- The strike on September 11 meant that branch banking services were disrupted for four days in many parts of the country. 11 सितंबर की हड़ताल का अर्थ था कि देश के कई हिस्सों में शाखा बैंकिंग सेवाएँ चार दिनों तक बाधित रहीं।
- The strike fell on a Friday (September 11). हड़ताल शुक्रवार (11 सितंबर) को हुई।
- Saturday (September 12) was the second Saturday of the month, which is a day off for banks. शनिवार (12 सितंबर) महीने का दूसरा शनिवार था, जो बैंकों के लिए अवकाश का दिन होता है।
- Sunday (September 13) is a weekly off. रविवार (13 सितंबर) साप्ताहिक अवकाश है।
- Monday (September 14) is Ganesh Chaturthi, which is a holiday in several States across the country. सोमवार (14 सितंबर) गणेश चतुर्थी है, जो देश के कई राज्यों में अवकाश का दिन है।
- While the rise of **app-based and Internet banking** has led to falling footfall at bank branches, they remain the sole point of banking access for many senior citizens and customers in rural and semi-rural India. यद्यपि ऐप-आधारित और इंटरनेट बैंकिंग के बढ़ते चलन के कारण बैंक शाखाओं में ग्राहकों की आवाजाही कम हुई है, फिर भी ग्रामीण और अर्ध-शहरी भारत में कई वरिष्ठ नागरिकों और ग्राहकों के लिए बैंक शाखाएँ बैंकिंग सेवाओं तक पहुँच का एकमात्र माध्यम बनी हुई हैं।

- Several services, such as **cheque and cash deposits**, also still require customers to visit a bank branch.
चेक और नकद जमा जैसी कई सेवाओं के लिए भी अभी ग्राहकों को बैंक शाखा में जाना आवश्यक होता है।
- Reports from across the country showed that most branches of public sector banks were either completely or partially closed on Saturday, with officers and employees taking part in the strike.
देशभर से प्राप्त रिपोर्टों से पता चला कि शनिवार को सार्वजनिक क्षेत्र के बैंकों की अधिकांश शाखाएँ या तो पूरी तरह या आंशिक रूप से बंद रहीं, क्योंकि अधिकारी और कर्मचारी हड़ताल में शामिल हुए।
- This meant that physical services such as **cash deposits, withdrawals, cheque clearances, and administrative work** ground to a halt.
इसका अर्थ था कि नकद जमा, निकासी, चेकों का समाशोधन और प्रशासनिक कार्य जैसी भौतिक सेवाएँ पूरी तरह ठप हो गईं।

GS Paper III: Science and Technology		13 September 2026
TOPICS COVERED		
13S9	Study finds far fewer genes truly linked to cerebral palsy अध्ययन में सेरेब्रल पाल्सी से वास्तव में जुड़े जीनों की संख्या बहुत कम पाई गई	
13S9	Human drug use began millennia earlier than believed मानव द्वारा मादक पदार्थों का उपयोग अनुमान से हजारों वर्ष पहले शुरू हुआ	
13S9	AI formalises Fermat's Last Theorem proof in 11 days AI ने 11 दिनों में Fermat's Last Theorem के प्रमाण को औपचारिक रूप दिया	
13S9	Even Teflon may not stop water if the liquid is charged यदि तरल आवेशित हो तो Teflon भी पानी को रोक नहीं सकता	
13S9	Wakey, wakey जागो, जागो	
13S9	Anthropic CEO urges AI companies to slow rate of model development Anthropic के CEO ने AI कंपनियों से मॉडल विकास की गति धीमी करने का आग्रह किया	

Study finds far fewer genes truly linked to cerebral palsy

While the 'cerebral palsy' label survives because it guarantees patients access to physical therapy, diagnosis lumps a variety of conditions; this is why distinguishing a coincidental diagnostic detail from a true biological driver carries large stakes

GS III: S&T

Anirban Mukhopadhyay

For families, gene sequencing offers the hope of ending a gruelling diagnostic odyssey. Finding a definitive genetic root cause optimises patient management, reduces unnecessary testing, and gives parents concrete answers.

But a new study in *The American Journal of Human Genetics* suggests simply finding a pathogenic gene variant in a child may not be enough.

"The medical community previously has not comprehensively examined the statistical evidence in favour of a cerebral palsy association for genes flagged in large genomics cohort studies," Peter N. Robinson, a computational biologist at the Jackson Laboratory for Genomic Medicine, U.S., and the study's corresponding author, said. "Our study showed that there is convincing evidence for only a subset."

In resource-constrained healthcare systems like India's, acting on a false alarm from a standard genetic panel can divert precious medical resources away from treatments that actually work.

The researchers combed through 21 published genomic diagnostic studies involving 5,440 individuals diagnosed with cerebral palsy.

Across these cohorts, the original authors had reported 515 candidate genes as the direct cause of patients' symptoms. But when the team sub-

Finding the real needles

Separating a harmless genetic coincidence from a true driver of cerebral palsy carries large stakes

- While doctors frequently use gene sequencing for cerebral palsy, finding a mutation does not guarantee it caused the disorder
- Researchers have found that statistical evidence actually supports fewer than 90 of the 515 candidate genes reported for the disorder
- False alarms occur because incidental mutations are common; cerebral palsy also describes various distinct neurological disorders
- Accurately identifying true biological causes allows clinicians to treat masquerading disorders with highly targeted, effective therapies



A physician checks a child with cerebral palsy. PUBLIC DOMAIN

- Streamlined, precise genetic testing also helps parents avoid wasted resources and access clinical care faster
- Fully realising genomics' potential requires large global datasets that combine detailed clinical profiles with sequencing

jected this data to rigorous analyses, it could confirm a true statistical association for only 89 of the proposed genes.

Sequencing the genomes of 460 patients across the Shriners Children's hospital network in the U.S., the team also identified disease-causing mutations in 60 genes across 15.8% of children. Yet their stricter statistical paradigm whittled the list down to 16.

"What this paper is trying to suggest is some of the genetic variants may not be slam dunk," said Kuntal Sen, a clinical geneticist and paediatric neurologist at Children's National Hospital, U.S. "It might explain one problem, like intellectual disability, but it may not tie together everything."

One source of these false alarms is coincidence, e.g. because roughly 5% of the general population harbours a rare genetic disease, sequencing a child with cerebral palsy may also uncover unrelated mutations.

A previous large-scale study had flagged the *LIPH* gene as a cause of cerebral palsy because an affected patient happened to carry it. But mutations in *LIPH* actually possess no known neurological link. Conversely, across both historical literature and the newly sequenced cohort, *CTNBN1* mutations showed up more often than random chance would allow.

'Cerebral palsy' is also a clinical catch-all rather than a single disease. "For me, I think the term 'cerebral palsy' does not always

make sense from a purely scientific perspective," Dr. Sen said. "The motor symptoms that the children have are more scientifically informative."

He noted the outdated label survives because it guarantees patients access to specialised insurance and physical therapy, at least in the west. But as an umbrella term for brain-derived muscle weakness, the diagnosis lumps a variety of conditions together.

While some stem from birth injuries, others are 'mimics': rare metabolic or genetic disorders masquerading as a muscle weakness.

This is why distinguishing a coincidence from a true biological driver carries large stakes. If doctors accept an incidental mutation from a standard genet-

ic panel as final, they may halt their workup prematurely, leaving a treatable 'mimic' undiscovered. But pinpointing the cause using strict statistical proof can ultimately open the door to highly targeted care.

The researchers estimated that among 8.5% to 24% of individuals who receive a valid genetic diagnosis, the findings point to specific, available treatments. In India, where three in every 1,000 live births are affected by cerebral palsy, and genetic testing is a rapidly growing field, identifying only the true genetic mimics can allow local clinics to connect families to precise treatments faster. (A severe mutation that breaks a specific protein and masquerades as cerebral palsy does so universally, regardless of ethnicity.)

While the Robinson et al. study has set a rigorous standard, the team also conceded its mathematical model may underestimate the true number of genes linked to the disorder: "...the lack of statistical significance does not imply the absence of an association," Dr. Robinson said.

Realising the full promise of this approach will require the medical community to move beyond sequencing DNA to using large, globally shared datasets of detailed patient profiles – which don't yet exist – to calculate the exact degree of risk a specific genetic variant carries.

(Anirban Mukhopadhyay is a geneticist by training and science communicator from New Delhi)

13S9. Study finds far fewer genes truly linked to cerebral palsy

अध्ययन में सेरेब्रल पाल्सी से वास्तव में जुड़े जीनों की संख्या बहुत कम पाई गई

- For families, gene sequencing offers the hope of ending a gruelling diagnostic odyssey. परिवारों के लिए, **जीन अनुक्रमण (gene sequencing)** एक कठिन और लंबी निदान प्रक्रिया को समाप्त करने की आशा प्रदान करता है।
- Finding a definitive genetic root cause optimises patient management, reduces unnecessary testing, and gives parents concrete answers. एक निश्चित **आनुवंशिक मूल कारण** का पता लगाना रोगी के उपचार-प्रबंधन को बेहतर बनाता है, अनावश्यक परीक्षणों को कम करता है और माता-पिता को ठोस उत्तर प्रदान करता है।
- But a new study in The American Journal of Human Genetics suggests simply finding a pathogenic gene variant in a child may not be enough. लेकिन **The American Journal of Human Genetics** में प्रकाशित एक नए अध्ययन से पता चलता है कि केवल किसी बच्चे में **रोगजनक जीन वैरिएंट** का मिल जाना पर्याप्त नहीं हो सकता है।
- "The medical community previously has not comprehensively examined the statistical evidence in favour of a cerebral palsy association for genes flagged in large genomics cohort studies," Peter N. Robinson, a computational biologist at the Jackson Laboratory for Genomic Medicine, U.S., and the study's corresponding author, said. अमेरिका स्थित **Jackson Laboratory for Genomic Medicine** के कम्प्यूटेशनल जीवविज्ञानी और अध्ययन के संबंधित लेखक पीटर एन. रॉबिन्सन ने कहा, "चिकित्सा समुदाय ने पहले बड़े जीनोमिक्स कोहोर्ट अध्ययनों में चिन्हित जीनों के **सेरेब्रल पाल्सी से संबंध** के पक्ष में उपलब्ध सांख्यिकीय साक्ष्यों की व्यापक रूप से जांच नहीं की थी।"
- "Our study showed that there is convincing evidence for only a subset." "हमारे अध्ययन से पता चला कि केवल कुछ जीनों के लिए ही **विश्वसनीय साक्ष्य** मौजूद हैं।"
- In resource-constrained healthcare systems like India's, acting on a false alarm from a standard genetic panel can divert precious medical resources away from treatments that actually work. भारत जैसी **संसाधन-सीमित स्वास्थ्य प्रणालियों** में, मानक आनुवंशिक पैनल से प्राप्त गलत संकेत के आधार पर कार्रवाई करने से मूल्यवान चिकित्सा संसाधन उन उपचारों से हट सकते हैं जो वास्तव में प्रभावी हैं।
- The researchers combed through 21 published genomic diagnostic studies involving 5,440 individuals diagnosed with cerebral palsy. शोधकर्ताओं ने **सेरेब्रल पाल्सी** से निदान किए गए 5,440 व्यक्तियों से संबंधित 21 प्रकाशित जीनोमिक नैदानिक अध्ययनों की गहन समीक्षा की।
- Across these cohorts, the original authors had reported 515 candidate genes as the direct cause of patients' symptoms. इन सभी कोहोर्ट में मूल लेखकों ने 515 **उम्मीदवार जीनों** को रोगियों के लक्षणों का प्रत्यक्ष कारण बताया था।
- But when the team subjected this data to rigorous analyses, it could confirm a true statistical association for only 89 of the proposed genes. लेकिन जब टीम ने इन आंकड़ों का कठोर विश्लेषण किया, तो वह प्रस्तावित जीनों में से केवल 89 के लिए वास्तविक **सांख्यिकीय संबंध** की पुष्टि कर सकी।
- Sequencing the genomes of 460 patients across the Shriners Children's hospital network in the U.S., the team also identified disease-causing mutations in 60 genes across 15.8% of children. अमेरिका के **Shriners Children's hospital network** में 460 रोगियों के जीनोम का अनुक्रमण करते हुए, टीम ने 15.8% बच्चों में 60 जीनों में **रोग उत्पन्न करने वाले उत्परिवर्तन** भी पाए।
- Yet their stricter statistical paradigm whittled the list down to 16. फिर भी, उनके अधिक कठोर **सांख्यिकीय प्रतिमान** ने इस सूची को घटाकर केवल 16 कर दिया।
- "What this paper is trying to suggest is some of the genetic variants may not be slam dunk," said Kuntal Sen, a clinical geneticist and paediatric neurologist at Children's National Hospital, U.S. अमेरिका के **Children's National Hospital** में क्लिनिकल जेनेटिसिस्ट और बाल तंत्रिका रोग विशेषज्ञ

कुंतल सेन ने कहा, “यह शोधपत्र यह संकेत देने का प्रयास कर रहा है कि कुछ आनुवंशिक वैरिएंट पूरी तरह निर्णायक नहीं हो सकते।”

- “It might explain one problem, like intellectual disability, but it may not tie together everything.”
“यह बौद्धिक अक्षमता जैसी किसी एक समस्या की व्याख्या कर सकता है, लेकिन यह हर चीज को एक साथ नहीं जोड़ सकता।”
- One source of these false alarms is coincidence, e.g. because roughly 5% of the general population harbours a rare genetic disease, sequencing a child with cerebral palsy may also uncover unrelated mutations.
इन गलत संकेतों का एक कारण संयोग है; उदाहरण के लिए, क्योंकि सामान्य आबादी के लगभग 5% लोगों में कोई दुर्लभ आनुवंशिक रोग मौजूद होता है, इसलिए सेरेब्रल पाल्सी वाले बच्चे का अनुक्रमण असंबंधित उत्परिवर्तनों का भी पता लगा सकता है।
- A previous large-scale study had flagged the LIPH gene as a cause of cerebral palsy because an affected patient happened to carry it.
एक पिछले बड़े पैमाने के अध्ययन में LIPH जीन को सेरेब्रल पाल्सी के कारण के रूप में चिन्हित किया गया था, क्योंकि एक प्रभावित रोगी में संयोगवश यह जीन मौजूद था।
- But mutations in LIPH actually possess no known neurological link.
लेकिन LIPH में उत्परिवर्तन का वास्तव में कोई ज्ञात तंत्रिका संबंध नहीं है।
- Conversely, across both historical literature and the newly sequenced cohort, CTNNB1 mutations showed up more often than random chance would allow.
इसके विपरीत, ऐतिहासिक साहित्य और नए अनुक्रमित कोहोर्ट दोनों में CTNNB1 उत्परिवर्तन संयोग से अपेक्षित संख्या की तुलना में अधिक बार पाए गए।
- ‘Cerebral palsy’ is also a clinical catch-all rather than a single disease.
‘सेरेब्रल पाल्सी’ भी एकल रोग के बजाय एक व्यापक नैदानिक श्रेणी है।
- “For me, I think the term ‘cerebral palsy’ does not always make sense from a purely scientific perspective,” Dr. Sen said.
डॉ. सेन ने कहा, “मेरे विचार से, विशुद्ध रूप से वैज्ञानिक दृष्टिकोण से ‘सेरेब्रल पाल्सी’ शब्द हमेशा सार्थक नहीं होता।”
- “The motor symptoms that the children have are more scientifically informative.”
“बच्चों में पाए जाने वाले मोटर लक्षण अधिक वैज्ञानिक रूप से सूचनाप्रद होते हैं।”
- He noted the outdated label survives because it guarantees patients access to specialised insurance and physical therapy, at least in the west.
उन्होंने कहा कि यह पुराना नाम इसलिए बना हुआ है क्योंकि कम-से-कम पश्चिमी देशों में यह रोगियों को विशेष बीमा और फिजिकल थेरेपी तक पहुंच सुनिश्चित करता है।
- But as an umbrella term for brain-derived muscle weakness, the diagnosis lumps a variety of conditions together.
लेकिन मस्तिष्क से उत्पन्न मांसपेशीय कमजोरी के लिए एक व्यापक शब्द के रूप में यह निदान विभिन्न प्रकार की स्थितियों को एक ही श्रेणी में रख देता है।
- While some stem from birth injuries, others are ‘mimics’: rare metabolic or genetic disorders masquerading as a muscle weakness.
जहाँ कुछ स्थितियाँ जन्म के समय हुई चोटों से उत्पन्न होती हैं, वहीं अन्य ‘मिमिक्स’ होती हैं: दुर्लभ चयापचय या आनुवंशिक विकार, जो मांसपेशीय कमजोरी के रूप में दिखाई देते हैं।
- This is why distinguishing a coincidence from a true biological driver carries large stakes.
इसीलिए संयोग और वास्तविक जैविक कारण के बीच अंतर करना अत्यंत महत्वपूर्ण है।
- If doctors accept an incidental mutation from a standard genetic panel as final, they may halt their workup prematurely, leaving a treatable ‘mimic’ undiscovered.
यदि डॉक्टर मानक आनुवंशिक पैनल से मिले संयोगवश उत्परिवर्तन को अंतिम निष्कर्ष मान लेते हैं, तो वे अपनी जांच समय से पहले रोक सकते हैं और उपचार योग्य ‘मिमिक’ का पता नहीं चल पाता।



- But pinpointing the cause using strict statistical proof can ultimately open the door to highly targeted care.
लेकिन कठोर **सांख्यिकीय प्रमाण** के माध्यम से कारण की सटीक पहचान अंततः अत्यधिक लक्षित उपचार का मार्ग खोल सकती है।
- The researchers estimated that among 8.5% to 24% of individuals who receive a valid genetic diagnosis, the findings point to specific, available treatments.
शोधकर्ताओं ने अनुमान लगाया कि वैध **आनुवंशिक निदान** प्राप्त करने वाले 8.5% से 24% व्यक्तियों में निष्कर्ष विशिष्ट और उपलब्ध उपचारों की ओर संकेत करते हैं।
- In India, where three in every 1,000 live births are affected by cerebral palsy, and genetic testing is a rapidly growing field, identifying only the true genetic mimics can allow local clinics to connect families to precise treatments faster.
भारत में, जहाँ प्रत्येक 1,000 जीवित जन्मों में से तीन **सेरेब्रल पाल्सी** से प्रभावित होते हैं और आनुवंशिक परीक्षण तेजी से विकसित हो रहा क्षेत्र है, केवल वास्तविक **आनुवंशिक मिमिक्स** की पहचान करने से स्थानीय क्लीनिक परिवारों को सटीक उपचारों से अधिक तेजी से जोड़ सकते हैं।
- (A severe mutation that breaks a specific protein and masquerades as cerebral palsy does so universally, regardless of ethnicity.)
(एक गंभीर **उत्परिवर्तन**, जो किसी विशिष्ट प्रोटीन को नष्ट कर देता है और सेरेब्रल पाल्सी के रूप में दिखाई देता है, जातीयता की परवाह किए बिना सभी में ऐसा ही करता है।)
- While the Robinson et al. study has set a rigorous standard, the team also conceded its mathematical model may underestimate the true number of genes linked to the disorder: "... the lack of statistical significance does not imply the absence of an association," Dr. Robinson said.
यद्यपि **Robinson et al. अध्ययन** ने एक कठोर मानक स्थापित किया है, टीम ने यह भी स्वीकार किया कि उसका गणितीय मॉडल इस विकार से जुड़े जीनों की वास्तविक संख्या को कम करके आंक सकता है: "... **सांख्यिकीय महत्व का अभाव संबंध की अनुपस्थिति को नहीं दर्शाता**," डॉ. रॉबिन्सन ने कहा।
- Realising the full promise of this approach will require the medical community to move beyond sequencing DNA to using large, globally shared data sets of detailed patient profiles — which don't yet exist — to calculate the exact degree of risk a specific genetic variant carries.

इस दृष्टिकोण की पूरी क्षमता को साकार करने के लिए चिकित्सा समुदाय को **DNA अनुक्रमण** से आगे बढ़कर रोगियों की विस्तृत प्रोफाइल वाले बड़े, वैश्विक स्तर पर साझा किए जाने वाले **डेटा सेट** का उपयोग करना होगा—जो अभी मौजूद नहीं हैं—ताकि यह गणना की जा सके कि किसी विशिष्ट आनुवंशिक वैरिएंट से कितना सटीक जोखिम



GS III: S&T

Human drug use began millennia earlier than believed

Researchers examined the teeth of two ancient hunter-gatherers from Sulawesi, Indonesia, dating back as far as 25,000 years, and found unusual, deep grooves in the teeth caused by sucking on betel nuts. Chemical analyses confirmed the presence of arecoline, the main stimulant in betel nuts, suggesting these early foragers habitually kept whole nuts in their mouths for long periods. The find pushes back the timeline of human drug use by thousands of years.

13S9. Human drug use began millennia earlier than believed

मानव द्वारा मादक पदार्थों का उपयोग अनुमान से हजारों वर्ष पहले शुरू हुआ

- Researchers examined the teeth of two ancient hunter-gatherers from Sulawesi, Indonesia, dating back as far as 25,000 years, and found unusual, deep grooves in the teeth caused by sucking on betel nuts.
शोधकर्ताओं ने इंडोनेशिया के सुलावेसी से प्राप्त दो प्राचीन **शिकारी-संग्रहकर्ता** मानवों के दाँतों की जांच की, जो 25,000 वर्ष पुराने हैं, और दाँतों में

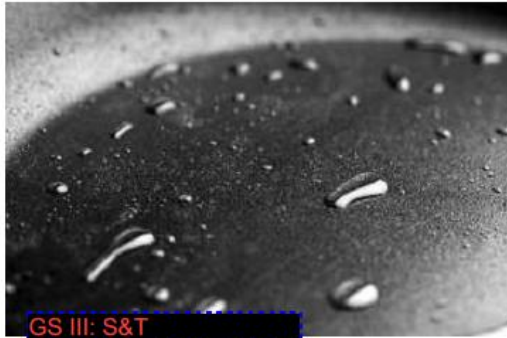
असामान्य, गहरी खाँचें पाईं, जो **सुपारी** चूसने के कारण बनी थीं।

- Chemical analyses confirmed the presence of arecoline, the main stimulant in betel nuts, suggesting these early foragers habitually kept whole nuts in their mouths for long periods.



रासायनिक विश्लेषणों ने **एरेकोलीन (arecoline)** की उपस्थिति की पुष्टि की, जो सुपारी में पाया जाने वाला मुख्य **उत्तेजक पदार्थ** है, जिससे संकेत मिलता है कि ये प्रारंभिक संग्रहकर्ता आदतन पूरी सुपारी को लंबे समय तक अपने मुंह में रखते थे।

- The finding pushes back the timeline of human drug use by thousands of years.
यह **खोज** मानव द्वारा मादक पदार्थों के उपयोग की समय-सीमा को हजारों वर्ष पीछे ले जाती है।



Even Teflon may not stop water if the liquid is charged

As water drops slide over leaves, glass or plastic, they develop an electric charge. When such charged drops land on a metal surface, even one with a protective coating like Teflon, the charge creates an electric field strong enough to punch microscopic holes through the coating, allowing the water to reach the metal below, leading to rust and decay. This new discovery shows a new way in which bridges, ships, cars, and heritage sites may degrade.

- This new discovery shows a new way in which bridges, ships, cars, and heritage sites may degrade.
यह नई **खोज** उस नए तरीके को दर्शाती है, जिसके माध्यम से पुल, जहाज, कारें और **विरासत स्थल** क्षतिग्रस्त हो सकते हैं।

13S9. Even Teflon may not stop water if the liquid is charged

यदि तरल आवेशित हो तो Teflon भी पानी को रोक नहीं सकता

- As water drops slide over leaves, glass or plastic, they develop an electric charge.
जब पानी की बूंदें पत्तियों, कांच या प्लास्टिक की सतह पर फिसलती हैं, तो उनमें **विद्युत आवेश** उत्पन्न हो जाता है।
- When such charged drops land on a metal surface, even one with a protective coating like Teflon, the charge creates an electric field strong enough to punch microscopic holes through the coating, allowing the water to reach the metal below, leading to rust and decay.
जब ऐसी आवेशित बूंदें किसी धातु की सतह पर गिरती हैं, यहाँ तक कि Teflon जैसी **सुरक्षात्मक परत** वाली सतह पर भी, तो यह आवेश इतना शक्तिशाली **विद्युत क्षेत्र** उत्पन्न करता है कि परत में सूक्ष्म छेद बन जाते हैं, जिससे पानी नीचे मौजूद धातु तक पहुंच जाता है और **जंग तथा क्षरण** होने लगता है।

Wakey, wakey

Why do we sometimes wake up a few minutes before our alarm rings?

GS III: S&T

The human body has a built-in timekeeping system called the circadian rhythm. It is governed by a group of cells in the brain, centred on the suprachiasmatic nucleus, which uses signals such as daylight to keep the body's roughly 24-hour cycle aligned with the outside world. When you wake up at the same time every day, your brain learns. In the hours before your usual waking time, the body slowly prepares for wakefulness: e.g. levels of the stress hormone begin to rise and body

temperature increases. Over time, these changes can help you wake naturally when you expect to. But this process is not precise. If you wake at 6:57 am when your alarm is set for 7 am, it could be your circadian system doing its job. But if you wake at 6:59 once, it could just be coincidence. We tend to remember the uncanny 'successes', like waking seconds before the alarm, and forget the mornings when we woke at 5:43 for no apparent reason. The phenomenon is thus neither pure coincidence nor pure foresight.

Readers may send their questions / answers to science@thehindu.co.in

13S9. Wakey, wakey जागो, जागो

Why do we sometimes wake up a few minutes before our alarm rings?

हम कभी-कभी अलार्म बजने से कुछ मिनट पहले क्यों जाग जाते हैं?

- The human body has a built-in timekeeping system called the **circadian rhythm**.
मानव शरीर में **सर्कैडियन रिदम (circadian rhythm)** नामक एक अंतर्निहित समय-निर्धारण प्रणाली होती है।
- It is governed by a group of cells in the brain, centred on the suprachiasmatic nucleus, which uses signals such as daylight to keep the body's roughly 24-hour cycle aligned with the outside world.
यह मस्तिष्क में कोशिकाओं के एक समूह द्वारा नियंत्रित होती है, जिसका



केंद्र सुप्राकायज़मैटिक न्यूक्लियस (suprachiasmatic nucleus) है और जो दिन के प्रकाश जैसे संकेतों का उपयोग करके शरीर के लगभग 24 घंटे के चक्र को बाहरी दुनिया के साथ समन्वित रखता है।

- When you wake up at the same time every day, your brain learns.
जब आप हर दिन एक ही समय पर जागते हैं, तो आपका मस्तिष्क उस समय के अनुसार अभ्यस्त हो जाता है।
- In the hours before your usual waking time, the body slowly prepares for wakefulness: e.g. levels of the stress hormone begin to rise and body temperature increases.
आपके सामान्य रूप से जागने के समय से कुछ घंटे पहले शरीर धीरे-धीरे जागृत अवस्था के लिए तैयार होने लगता है; उदाहरण के लिए, तनाव हार्मोन का स्तर बढ़ने लगता है और शरीर का तापमान बढ़ जाता है।
- Over time, these changes can help you wake naturally when you expect to.
समय के साथ, ये परिवर्तन आपकी अपेक्षित समय पर स्वाभाविक रूप से जागने में सहायता कर सकते हैं।
- But this process is not precise.
लेकिन यह प्रक्रिया सटीक नहीं होती।
- If you wake at 6:57 am when your alarm is set for 7 am, it could be your circadian system doing its job.
यदि आपका अलार्म सुबह 7 बजे के लिए निर्धारित है और आप सुबह 6:57 बजे जाग जाते हैं, तो यह आपके सर्कैडियन तंत्र के अपना कार्य करने के कारण हो सकता है।
- But if you wake at 6:59 once, it could just be coincidence.
लेकिन यदि आप एक बार 6:59 बजे जागते हैं, तो यह केवल संयोग हो सकता है।
- We tend to remember the uncanny 'successes', like waking seconds before the alarm, and forget the mornings when we woke at 5:43 for no apparent reason.
हम अलार्म बजने से कुछ सेकंड पहले जागने जैसी असाधारण 'सफलताओं' को याद रखते हैं और उन सुबहों को भूल जाते हैं जब हम बिना किसी स्पष्ट कारण के 5:43 बजे जाग गए थे।
- The phenomenon is thus neither pure coincidence nor pure foresight.
इस प्रकार, यह घटना न तो पूर्णतः संयोग है और न ही पूर्णतः पूर्वज्ञान।



Anthropic CEO urges AI companies to slow rate of model development

Both OpenAI CEO Sam Altman and xAI's Elon Musk publicly agree with Amodei's stance; the three-step action plan calls for independent reviewers, coordination among AI firms to set safety standards, and international cooperation to manage risks

GS III: S&T

Reuters
NEW YORK

Anthropic CEO Dario Amodei called on AI companies to slow the rate at which they advance model capabilities amid mounting fears of misuse of artificial intelligence, outlining a three-step framework intended to pace development and create more time to manage its risks.

"We must slow the pace at which we improve the capabilities of AI models. Progress will still seem fast, and we must make wise use of the time we gain," Mr. Amodei wrote in a lengthy essay shared on X. Both Elon Musk, who



Word of caution: Elon Musk, CEO of xAI; Dario Amodei, CEO of Anthropic; and OpenAI CEO Sam Altman agree on the need to tap the brakes on the development of artificial intelligence. AFP

runs xAI, and Sam Altman, CEO of OpenAI, said in posts on X that they agree with Mr. Amodei.

The three-step plan calls for independent reviewers inside leading AI companies, coordination among

frontier AI firms to set safety standards and limit unchecked AI development, and international cooperation to manage AI risks.

He made his essay public after San Francisco-based Anthropic released a

threat intelligence report on Thursday detailing how several actors had used its Claude AI models for activities ranging from weapons development and cyber operations to surveillance and fraud.

Outpacing humans

Mr. Amodei pointed to AI's growing ability to improve itself, highlighting long-held concerns about it outpacing human ability to control operation along with the recent incident involving OpenAI and GPT-4 as his primary reasons to put the brakes on model advances.

Alarm about the potential harm from AI grew this week when Anthropic re-

searcher Jacob Coxon resigned, stating that the "people building AI earnestly believe that it could kill us all by the end of the decade".

A coordinated approach, Mr. Amodei added, would enable leading U.S. AI companies to carry out necessary safety research and safeguards without putting themselves at a competitive disadvantage.

He said that any slowdown by democratically governed countries should be limited to preserving the lead U.S. AI firms hold over China, arguing that a Chinese advantage in AI would pose U.S. national security risks.

13S9. Anthropic CEO urges AI companies to slow rate of model development

Anthropic के CEO ने AI कंपनियों से मॉडल विकास की गति धीमी करने का आग्रह किया

- Anthropic CEO **Dario Amodei** called on AI companies to slow the rate at which they advance model capabilities amid mounting fears of misuse of **artificial intelligence**, outlining a three-step framework intended to pace development and create more time to manage its risks. Anthropic के CEO **Dario Amodei** ने कृत्रिम बुद्धिमत्ता के दुरुपयोग को लेकर बढ़ती आशंकाओं के बीच AI कंपनियों से मॉडल क्षमताओं को उन्नत करने की गति धीमी करने का आह्वान किया और विकास की गति को नियंत्रित करने तथा इसके जोखिमों के प्रबंधन के लिए अधिक समय उपलब्ध कराने के उद्देश्य से तीन-चरणीय रूपरेखा प्रस्तुत की।
- "We must slow the pace at which we improve the capabilities of AI models. Progress will still seem fast, and we must make wise use of the time we gain," Mr. Amodei wrote in a lengthy essay shared on X. "हमें AI मॉडलों की क्षमताओं में सुधार की गति को धीमा करना चाहिए। प्रगति फिर भी तेज प्रतीत होगी और हमें मिलने वाले समय का विवेकपूर्ण उपयोग करना चाहिए," श्री Amodei ने X पर साझा किए गए एक विस्तृत निबंध में लिखा।
- Both **Elon Musk**, who runs xAI, and **Sam Altman**, CEO of OpenAI, said in posts on X that they agree with Mr. Amodei. xAI चलाने वाले **Elon Musk** और OpenAI के CEO **Sam Altman**, दोनों ने X पर पोस्ट में कहा कि वे श्री Amodei से सहमत हैं।
- The three-step plan calls for **independent reviewers** inside leading AI companies, coordination among **frontier AI firms** to set safety standards and limit unchecked AI development, and international cooperation to manage AI risks.

तीन-चरणीय योजना में प्रमुख AI कंपनियों के भीतर **स्वतंत्र समीक्षकों**, सुरक्षा मानक निर्धारित करने और अनियंत्रित AI विकास को सीमित करने के लिए **फ्रंटियर AI कंपनियों** के बीच समन्वय तथा AI जोखिमों के प्रबंधन के लिए अंतरराष्ट्रीय सहयोग का आह्वान किया गया है।

- He made his essay public after San Francisco-based **Anthropic** released a **threat intelligence report** on Thursday detailing how several actors had used its Claude AI models for activities ranging from weapons development and cyber operations to surveillance and fraud.

उन्होंने अपना निबंध सार्वजनिक तब किया जब सैन फ्रांसिस्को स्थित **Anthropic** ने गुरुवार को एक **खतरा खुफिया रिपोर्ट** जारी की, जिसमें बताया गया कि कई पक्षों ने उसके Claude AI मॉडलों का उपयोग हथियारों के विकास और साइबर अभियानों से लेकर निगरानी तथा धोखाधड़ी तक की गतिविधियों के लिए किया था।

Outpacing humans

मनुष्यों से आगे निकलना

- Mr. Amodi pointed to AI's growing ability to improve itself, highlighting long-held concerns about it outpacing human ability to control operation along with the recent incident involving OpenAI and Hugging Face as his primary reasons to put the brakes on model advances. श्री Amodi ने AI की स्वयं में सुधार करने की बढ़ती क्षमता की ओर संकेत करते हुए, इसके संचालन को नियंत्रित करने की मानवीय क्षमता से आगे निकल जाने संबंधी लंबे समय से चली आ रही चिंताओं तथा OpenAI और Hugging Face से जुड़ी हालिया घटना को मॉडल विकास पर रोक लगाने के अपने प्रमुख कारणों के रूप में रेखांकित किया।
- Alarm about the potential harm from AI grew this week when **Anthropic researcher Jacob Coxon** resigned, stating that the "people building AI earnestly believe that it could kill us all by the end of the decade". इस सप्ताह AI से संभावित नुकसान को लेकर चिंता तब बढ़ गई जब **Anthropic के शोधकर्ता Jacob Coxon** ने इस्तीफा देते हुए कहा कि "AI बनाने वाले लोग गंभीरता से मानते हैं कि यह दशक समाप्त होने तक हम सभी को मार सकता है।"
- A coordinated approach, Mr. Amodi added, would enable leading U.S. AI companies to carry out necessary safety research and safeguards without putting themselves at a competitive disadvantage. श्री Amodi ने आगे कहा कि एक समन्वित दृष्टिकोण प्रमुख अमेरिकी AI कंपनियों को स्वयं को प्रतिस्पर्धात्मक नुकसान में डाले बिना आवश्यक सुरक्षा अनुसंधान और सुरक्षा उपायों को लागू करने में सक्षम बनाएगा।
- He said that any slowdown by democratically governed countries should be limited to preserving the lead U.S. AI firms hold over China, arguing that a Chinese advantage in AI would pose **U.S. national security risks**. उन्होंने कहा कि लोकतांत्रिक रूप से शासित देशों द्वारा की जाने वाली किसी भी प्रकार की धीमी गति केवल अमेरिकी AI कंपनियों की चीन पर बनी बढ़त को बनाए रखने तक सीमित होनी चाहिए, क्योंकि AI में चीन की बढ़त अमेरिकी राष्ट्रीय सुरक्षा के लिए जोखिम उत्पन्न करेगी।

GS Paper III: Environment		13 September 2026
TOPICS COVERED		
13S9	Rapid Himalayan erosion triggers hidden source of CO2: study तेजी से हो रहा हिमालयी अपरदन CO2 के छिपे स्रोत को सक्रिय करता है: अध्ययन	



Rapid Himalayan erosion triggers hidden source of CO₂: study

GS III: Environment

Vasudevan Mukunth

On August 26, devastating flash floods swept across Nepal's mountains, killing over 1,300 and laying waste to whole towns and villages. As a warming climate destabilises Himalayan glaciers, the glaciers themselves are influencing how much carbon dioxide (CO₂) is released into the atmosphere, driving global warming.

The Indian plate continues to push into the Eur-

asian plate and the Himalayan mountains are getting eroded, exposing fresh silicate minerals. These minerals react with CO₂ in the atmosphere and later wash into the oceans, locking the carbon in sea-floor sediments. Scientists believe this silicate weathering has helped cool the earth over the last 50 million years. However, a study published recently in *Chemical Geology* by researchers from IISER Pune, the Wadia Institute

of Himalayan Geology, and IIT-Roorkee suggests the picture is not so simple — that, in fact, another mineral process may be more than offsetting the cooling effect.

The team studied the area around the headwaters of the Indus river. Aside from silicates, the Himalayan mountains contain many other minerals, including pyrites, a.k.a. fool's gold. When mountain slopes are eroded rapidly, the sulphides in py-

rites are exposed to air and water for the first time in millions of years, kicking off an important chemical reaction. First, the sulphides are oxidised to sulphuric acid. When it reacts with carbonate rocks, CO₂ is released into the air.

By measuring the ratio of isotopes of sulphur and oxygen in the Indus river system, the team was able to say if the sulphates in the water came from dissolved gypsum or from pyrite oxidation. Thus, in the

upper Indus basin, it estimated the rate of CO₂ oxidation to be three-times higher than CO₂ uptake by silicate weathering.

The team also found while the flatter floodplains downstream were CO₂ sinks, the steep mountainous regions were net CO₂ sources. This is partly because water moves more slowly in the floodplains.

The study authors wrote that glaciers excel at crushing rocks and exposing the pyrites within, rendering

erosion a double-edged sword: it provides the 'raw materials' to remove CO₂ in the mountains even as the intensity of that erosion facilitates the more aggressive reactions of sulphides.

"Our findings demonstrate that glacier-fed river catchments are important geological sources of CO₂, which may influence our long-term carbon cycle and contribute to climate warming over million-year timescales," the team said in a release.

13S9. Rapid Himalayan erosion triggers hidden source of CO₂: study

तेजी से हो रहा हिमालयी अपरदन CO₂ के छिपे स्रोत को सक्रिय करता है: अध्ययन

- On August 26, devastating **flash floods** swept across Nepal's mountains, killing over 1,300 and laying waste to whole towns and villages.
26 अगस्त को विनाशकारी **अचानक आई बाढ़** ने नेपाल के पर्वतीय क्षेत्रों को अपनी चपेट में ले लिया, जिसमें 1,300 से अधिक लोगों की मृत्यु हुई और पूरे कस्बे तथा गाँव तबाह हो गए।
- As a warming climate destabilises Himalayan glaciers, the glaciers themselves are influencing how much carbon dioxide (CO₂) is released into the atmosphere, driving global warming.
जैसे-जैसे गर्म होती **जलवायु** हिमालयी ग्लेशियरों को अस्थिर कर रही है, वैसे-वैसे ये ग्लेशियर स्वयं यह प्रभावित कर रहे हैं कि वायुमंडल में कितनी **कार्बन डाइऑक्साइड (CO₂)** छोड़ी जाती है, जिससे वैश्विक तापन बढ़ रहा है।
- The Indian plate continues to push into the Eurasian plate and the Himalayan mountains are getting eroded, exposing fresh silicate minerals.
भारतीय प्लेट लगातार **यूरेशियाई प्लेट** की ओर धकेल रही है और हिमालयी पर्वतों का अपरदन हो रहा है, जिससे नए **सिलिकेट खनिज** उजागर हो रहे हैं।
- These minerals react with CO₂ in the atmosphere and later wash into the oceans, locking the carbon in sea floor sediments.
ये खनिज वायुमंडल में मौजूद **CO₂** के साथ अभिक्रिया करते हैं और बाद में समुद्रों में बहकर पहुँचते हैं, जहाँ कार्बन **समुद्र तल की तलछट** में स्थायी रूप से जमा हो जाता है।
- Scientists believe this **silicate weathering** has helped cool the earth over the last 50 million years.
वैज्ञानिकों का मानना है कि इस **सिलिकेट अपक्षय** ने पिछले 5 करोड़ वर्षों के दौरान पृथ्वी को ठंडा करने में मदद की है।
- However, a study published recently in *Chemical Geology* by researchers from IISER Pune, the Wadia Institute of Himalayan Geology, and IIT-Roorkee suggests the picture is not so simple — that, in fact, another mineral process may be more than offsetting the cooling effect.
हालाँकि, IISER पुणे, वाडिया इंस्टीट्यूट ऑफ हिमालयन जियोलॉजी और IIT-रूड़की के शोधकर्ताओं द्वारा हाल ही में *Chemical Geology* में प्रकाशित एक अध्ययन से पता चलता है कि स्थिति इतनी सरल नहीं है — वास्तव में, एक अन्य **खनिज प्रक्रिया** शीतलन प्रभाव की भरपाई से भी अधिक कर सकती है।
- The team studied the area around the headwaters of the Indus river.
टीम ने **सिंधु नदी के उद्गम क्षेत्र** के आसपास के इलाके का अध्ययन किया।
- Aside from silicates, the Himalayan mountains contain many other minerals, including pyrites, a.k.a. fool's gold.



सिलिकेट के अलावा, हिमालयी पर्वतों में कई अन्य खनिज पाए जाते हैं, जिनमें **पाइराइट**, जिसे **फूल्स गोल्ड** भी कहा जाता है, शामिल है।

- When mountain slopes are eroded rapidly, the sulphides in pyrites are exposed to air and water for the first time in millions of years, kicking off an important chemical reaction. जब पर्वतीय ढलानों का तेजी से अपरदन होता है, तो पाइराइट में मौजूद **सल्फाइड** लाखों वर्षों में पहली बार वायु और जल के संपर्क में आते हैं, जिससे एक महत्वपूर्ण **रासायनिक अभिक्रिया** शुरू होती है।
- First, the sulphides are oxidised to sulphuric acid. सबसे पहले, **सल्फाइड** का ऑक्सीकरण होकर **सल्फ्यूरिक अम्ल** बनता है।
- When it reacts with carbonate rocks, CO₂ is released into the air. जब यह **कार्बोनेट चट्टानों** के साथ अभिक्रिया करता है, तो **CO₂** वायु में मुक्त होती है।
- By measuring the ratio of isotopes of sulphur and oxygen in the Indus river system, the team was able to say if the sulphates in the water came from dissolved gypsum or from pyrite oxidation. सिंधु नदी तंत्र में **सल्फर और ऑक्सीजन के समस्थानिकों** के अनुपात को मापकर, टीम यह निर्धारित करने में सक्षम हुई कि जल में मौजूद **सल्फेट** घुले हुए जिप्सम से आए थे या पाइराइट के ऑक्सीकरण से।
- Thus, in the upper Indus basin, it estimated the rate of CO₂ oxidation to be three-times higher than CO₂ uptake by silicate weathering. इस प्रकार, ऊपरी सिंधु बेसिन में टीम ने **CO₂ के ऑक्सीकरण की दर** को सिलिकेट अपक्षय द्वारा **CO₂ के अवशोषण** की दर से तीन गुना अधिक आंका।
- The team also found while the latter flood plains downstream were CO₂ sinks, the steep mountainous regions were net CO₂ sources. टीम ने यह भी पाया कि जहाँ नीचे की ओर स्थित **बाढ़ के मैदान** CO₂ के अवशोषक थे, वहीं खड़ी पर्वतीय क्षेत्र शुद्ध रूप से **CO₂ के स्रोत** थे।
- This is partly because water moves more slowly in the floodplains. इसका एक कारण यह है कि **बाढ़ के मैदानों** में जल अधिक धीमी गति से प्रवाहित होता है।
- The study authors wrote that glaciers excel at crushing rocks and exposing the pyrites within, rendering erosion a double-edged sword: it provides the 'raw materials' to remove CO₂ in the mountains even as the intensity of that erosion facilitates the more aggressive reactions of sulphides. अध्ययन के लेखकों ने लिखा कि ग्लेशियर चट्टानों को कुचलने और उनके भीतर मौजूद पाइराइट को उजागर करने में अत्यधिक सक्षम होते हैं, जिससे **अपरदन दोधारी तलवार** बन जाता है: यह पर्वतों में CO₂ को हटाने के लिए 'कच्चा माल' उपलब्ध कराता है, जबकि उसी अपरदन की तीव्रता सल्फाइड की अधिक तीव्र अभिक्रियाओं को भी सुगम बनाती है।
- "Our findings demonstrate that glacier-fed river catchments are important geological sources of CO₂, which may influence our long-term carbon cycle and contribute to climate warming over million-year timescales," the team said in a release. टीम ने एक विज्ञप्ति में कहा, "हमारे निष्कर्ष प्रदर्शित करते हैं कि ग्लेशियर-आधारित नदी जलग्रहण क्षेत्र **CO₂ के महत्वपूर्ण भूवैज्ञानिक स्रोत** हैं, जो हमारे दीर्घकालिक कार्बन चक्र को प्रभावित कर सकते हैं और लाखों वर्षों के समय-मान पर जलवायु तापन में योगदान दे सकते हैं।"