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PATRIOTIC IAS

DAILY CURRENT AFFAIRS

THE HINDU NEWSPAPER

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PCS

PM Modi to flag off two new Amrit Bharat trains today

Prime Minister Narendra Modi will flag off two new Amrit Bharat Express trains connecting Banaras and Pune as well as Ayodhya and Mumbai on Tuesday. The introduction of two new weekly Amrit Bharat Express trains will link Uttar Pradesh with Maharashtra via Madhya Pradesh. Introduced for low and middle-income families, Amrit Bharat trains are fully non-AC. The trains are expected to particularly benefit daily passengers, migrant workers, and pilgrims travelling between Uttar Pradesh and Maharashtra, providing direct connectivity and eliminating the need to change trains.

ट्रेनें पूरी तरह नॉन-एसी हैं।

28A. PM Modi to flag off two new Amrit Bharat trains today

पीएम मोदी आज दो नई अमृत भारत ट्रेनों को हरी झंडी दिखाएंगे

- Prime Minister Narendra Modi will flag off two new Amrit Bharat Express trains connecting Banaras and Pune as well as Ayodhya and Mumbai on Tuesday.

प्रधानमंत्री नरेंद्र मोदी मंगलवार को वाराणसी और पुणे तथा अयोध्या और मुंबई को जोड़ने वाली दो नई अमृत भारत एक्सप्रेस ट्रेनों को हरी झंडी दिखाएंगे।

- The introduction of two new weekly Amrit Bharat Express trains will link Uttar Pradesh with Maharashtra via Madhya Pradesh.

दो नई साप्ताहिक अमृत भारत एक्सप्रेस ट्रेनों की शुरुआत से उत्तर प्रदेश को महाराष्ट्र से मध्य प्रदेश के माध्यम से जोड़ा जाएगा।

- Introduced for low and middle-income families, Amrit Bharat trains are fully non-AC.

कम और मध्यम आय वर्ग के परिवारों के लिए शुरू की गई अमृत भारत

SC notice on plea of Enrica Lexie owner for return of ₹3 cr. bond

PCS

The Hindu Bureau
NEW DELHI

The Supreme Court on Monday issued notice to the widow of one of the fishermen killed by Italian Marines aboard the vessel, *Enrica Lexie*, off the coast of Kerala in 2012.

The order passed by a Bench headed by Justice Dipankar Datta came in an application filed by the Naples-based owner of the vessel, M/s Dolphin Tanker, for the release of a ₹3 crore bond and all other undertakings given in connection with the case of the fatal shooting.

Senior advocate Sanjay M. Nuli and advocate Anu B., appearing for the owner, sought a modification of an apex court order of May 2, 2012 and a direction to the Registrar General of the Kerala High Court to release the bond.

The May 2012 direction

had directed the owner company to execute the bond before the Registrar General of the High Court to ensure the "production of the vessel and securing the presence of six crew members as and when called upon by any court or the investigating officer or any other lawful authority".

Fishermen killed

An FIR had been lodged on February 15, 2012 at Neendakara Coastal Police Station after two Italian Marines, Massimiliano Latorre and Salvatore Grone, opened fire on the Indian fishing boat, *St. Antony*, in the Arabian Sea and killed two fishermen aboard it.

A case of murder was lodged and the Indian Coast Guard intercepted the ship and brought it to the Port of Cochin on February 16, leading to the arrest of two Italian Marines on February 19, 2012.

crew members as and when called upon by any court or the investigating officer or any other lawful authority".

मई 2012 के निर्देश में मालिक कंपनी को उच्च न्यायालय के रजिस्ट्रार जनरल के समक्ष बॉन्ड निष्पादित करने को कहा गया था ताकि "जहाज की प्रस्तुति और छह क्रू सदस्यों की उपस्थिति सुनिश्चित की जा सके, जब भी किसी न्यायालय, जांच अधिकारी या किसी अन्य वैध प्राधिकरण द्वारा बुलाया जाए"।

28A.SC notice on plea of Enrica Lexie owner for return of ₹3 cr. bond

सुप्रीम कोर्ट द्वारा ₹3 करोड़ बॉन्ड वापसी हेतु एनरिका लेक्सी मालिक की याचिका पर नोटिस

- The Supreme Court on Monday issued notice to the widow of one of the fishermen killed by Italian Marines aboard the vessel, *Enrica Lexie*, off the coast of Kerala in 2012.

सुप्रीम कोर्ट ने सोमवार को 2012 में केरल तट के पास जहाज एनरिका लेक्सी पर इतालवी मरीन द्वारा मारे गए एक मछुआरे की विधवा को नोटिस जारी किया।

- The order passed by a Bench headed by Justice Dipankar Datta came in an application filed by the Naples-based owner of the vessel, M/s Dolphin Tanker, for the release of a ₹3 crore bond and all other undertakings given in connection with the case of the fatal shooting.

न्यायमूर्ति दिपांकर दत्ता की अध्यक्षता वाली पीठ द्वारा पारित आदेश नेपल्स स्थित मालिक एम/एस डॉल्फिन टैंकर द्वारा दायर याचिका पर आया, जिसमें ₹3 करोड़ के बॉन्ड और घातक गोलीबारी मामले से संबंधित अन्य सभी आश्वासनों की वापसी की मांग की गई।

- The May 2012 direction had directed the owner company to execute the bond before the Registrar General of the High Court to ensure the "production of the vessel and securing the presence of six



Fishermen killed मछुआरों की हत्या

- An FIR had been lodged on February 15, 2012 at **Neendakara Coastal Police Station** after two Italian Marines, **Massimiliano Latorre** and **Salvatore Girone**, opened fire on the Indian fishing boat, **St. Antony**, in the **Arabian Sea** and killed two fishermen aboard it.
15 फरवरी 2012 को नींदाकारा तटीय पुलिस स्टेशन में एफआईआर दर्ज की गई थी, जब दो इतालवी मरीन मासिमिलियानो लाटोरे और साल्वाटोर गिरोने ने अरब सागर में भारतीय मछली पकड़ने वाली नाव सेंट एंटनी पर गोलीबारी की और उसमें सवार दो मछुआरों की हत्या कर दी।

Hindi-medium aspirants face a widening gap in Delhi's UPSC hub

Career Counselling
Shubhangi Kshitiza Saurav
NEW DELHI

In the cramped lanes and crowded bookstores of Delhi's Mukherjee Nagar, a well-known hub for civil services coaching, Hindi seems to be getting the short shrift.

While the shelves brim with up-to-date study material for English-medium aspirants, keeping pace with the changing demands of the Union Public Service Commission (UPSC), for those who think, write, and dream in Hindi, however, the choices are sparse, often reduced to dated translations and fragmented notes.

According to several aspirants, it is a far cry from the late 1980s when Ashok Singh and his institute, Meridian, transformed this small pocket of north Delhi into a sanctuary for stu-



Mukherjee Nagar in Delhi, a hub for civil services aspirants, where students gather for UPSC exam preparation. SPECIAL ARRANGEMENT

dents from Bihar and Uttar Pradesh. Soon, A.K. Mishra of Chanakya IAS Academy and Shashank Atom of ALS Coaching joined the movement, creating a wave of success that established Mukherjee Nagar as the coaching hub for Hindi-medium aspirants.

However, the equilibrium began to shift with the introduction of the Civil Services Aptitude Test

(CSAT). Conceived as a measure of analytical ability, it has, in practice, become a hurdle that many Hindi-medium students find difficult to clear.

Sonu Kumar, a UPSC aspirant, said, "We are not adequately trained for CSAT. We prepare for the Mains, but get stuck at the preliminary stage. Our attempts are wasted, leaving us with nothing but

hopelessness."

Hindi-medium material, he added, is often a translated version of English-medium content. "Hence, it does not help much and only makes things more complicated. Hindi-medium notes are often overly descriptive while English study materials are more direct and exam-oriented, with greater use of technical terms. Another major problem is the absence of a reliable Hindi newspaper, whereas English-medium students have an advantage in this regard," Mr. Kumar said, adding that mentors continue to rely on traditional, time-consuming methods rather than the more targeted "smart work" that the examination now requires.

Vishal Tiwari, a 28-year-old from Kanpur, said English-medium students often come from more stable

and privileged backgrounds, making the competition seem uneven. "English-medium students often have better professional degrees and exposure. Their approach is efficient, while ours tends to be lengthy," he said.

'Status symbol'

Mentors, too, recognise the shift. Devraj, a long-time guide in the area, said English has increasingly become a status symbol. "Fewer students are now preparing for the IAS in Hindi medium. In the next five years, their proportion may fall to around 20%," he says.

Shivangi from Ayodhya, who has lived here since 2019, echoed the sentiment. "The mentorship is inadequate, and survival itself is difficult. Generally, Hindi-medium students come from agrarian back-

grounds across Hindi-speaking regions such as Bihar, Uttar Pradesh, and Jharkhand. Many end up focusing more on personality development than their core preparation," she said, adding that the cost of study material, though not very high, poses a burden on some students.

R.S. Shukla, who was once an aspirant himself and is now a professor, said there is a dire need to change the perception of Hindi.

"We, along with the government, should focus on building a strong foundational knowledge of both Hindi and English among students. Students should be determined, encouraged, and guided towards smart work so that this journey does not become a five-year plan, but a one-year effort," he said.

28A. Hindi-medium aspirants face a widening gap in Delhi's UPSC hub

दिल्ली के UPSC हब में हिंदी माध्यम के अभ्यर्थियों के सामने बढ़ती खाई

- In the cramped lanes and crowded bookstores of **Delhi's Mukherjee Nagar**, a well-known hub for **civil services coaching**, Hindi seems to be getting the short shrift.
दिल्ली के मुखर्जी नगर की संकरी गलियों और भीड़भाड़ वाली किताबों की दुकानों में, जो सिविल सेवा कोचिंग का प्रसिद्ध केंद्र है, हिंदी को कम महत्व मिलता दिख रहा है।
- While the shelves brim with up-to-date **study material for English-medium aspirants**, keeping pace with the changing demands of the **Union Public Service Commission (UPSC)**, for those who think, write, and dream in Hindi, however, the choices are sparse, often reduced to dated translations and fragmented notes.
जहां अंग्रेजी माध्यम के अभ्यर्थियों के लिए अद्यतन अध्ययन सामग्री उपलब्ध है, जो संघ लोक सेवा आयोग (UPSC) की बदलती मांगों के अनुरूप है, वहीं हिंदी में सोचने, लिखने और सपने देखने वालों के लिए विकल्प सीमित हैं, जो अक्सर पुराने अनुवाद और बिखरे हुए नोट्स तक सीमित रह जाते हैं।
- According to several aspirants, it is a far cry from the late 1980s when **Ashok Singh** and his institute, **Meridian**, transformed this small pocket of north Delhi into a sanctuary for students from **Bihar and Uttar Pradesh**.
कई अभ्यर्थियों के अनुसार, यह स्थिति 1980 के दशक के अंत से बिल्कुल अलग है, जब अशोक सिंह और



उनके संस्थान **मेरिडियन** ने उत्तर दिल्ली के इस छोटे से क्षेत्र को **बिहार** और **उत्तर प्रदेश** के छात्रों के लिए एक केंद्र बना दिया था।

- **Soon, A.K. Mishra of Chanakya IAS Academy and Shashank Atom of ALS Coaching joined the movement, creating a wave of success that established Mukherjee Nagar as the coaching hub for Hindi-medium aspirants.**
जल्द ही **चाणक्य IAS अकादमी** के **ए.के. मिश्रा** और **ALS कोचिंग** के **शशांक एटम** भी इस आंदोलन से जुड़े, जिससे सफलता की एक लहर पैदा हुई और **मुखर्जी नगर** हिंदी माध्यम के अभ्यर्थियों का प्रमुख कोचिंग केंद्र बन गया।
- However, the **equilibrium began to shift with the introduction of the Civil Services Aptitude Test (CSAT).**
हालांकि, **सिविल सेवा एप्टीट्यूड टेस्ट (CSAT)** की शुरुआत के साथ यह संतुलन बदलने लगा।
- **Conceived as a measure of analytical ability, it has, in practice, become a hurdle that many Hindi-medium students find difficult to clear.**
विश्लेषणात्मक क्षमता को मापने के लिए बनाए गए इस परीक्षण ने व्यवहार में कई **हिंदी माध्यम के छात्रों** के लिए एक बाधा का रूप ले लिया है।
- **Sonu Kumar, a UPSC aspirant, said, "We are not adequately trained for CSAT.**
सोनू कुमार, एक UPSC अभ्यर्थी ने कहा, "हम **CSAT** के लिए पर्याप्त रूप से प्रशिक्षित नहीं हैं।"
- We prepare for the **Mains**, but get stuck at the **preliminary stage.**
हम **मुख्य परीक्षा** की तैयारी करते हैं, लेकिन **प्रारंभिक चरण** में ही अटक जाते हैं।
- Our attempts are wasted, leaving us with nothing but **hopelessness.**"
हमारे प्रयास व्यर्थ हो जाते हैं और हमारे पास केवल **निराशा** ही बचती है।"
- **Hindi-medium material, he added, is often a translated version of English-medium content.**
उन्होंने कहा कि **हिंदी माध्यम की सामग्री** अक्सर **अंग्रेजी सामग्री** का अनुवाद मात्र होती है।
- **"Hence, it does not help much and only makes things more complicated.**
"इसलिए यह ज्यादा मददगार नहीं होती और चीजों को और जटिल बना देती है।"
- **Hindi-medium notes are often overly descriptive while English study materials are more direct and exam-oriented, with greater use of technical terms.**
हिंदी माध्यम के नोट्स अक्सर बहुत अधिक वर्णनात्मक होते हैं, जबकि अंग्रेजी अध्ययन सामग्री अधिक सीधी और परीक्षा उन्मुख होती है, जिसमें **तकनीकी शब्दों** का अधिक उपयोग होता है।
- **Another major problem is the absence of a reliable Hindi newspaper, whereas English-medium students have an advantage in this regard,"** Mr. Kumar said, adding that mentors continue to rely on traditional, time-consuming methods rather than the more targeted **"smart work"** that the examination now requires.
एक और बड़ी समस्या विश्वसनीय **हिंदी समाचार पत्र** की कमी है, जबकि अंग्रेजी माध्यम के छात्रों को इसमें लाभ मिलता है," श्री कुमार ने कहा, और जोड़ा कि मेंटर्स अभी भी पारंपरिक और समय लेने वाले तरीकों पर निर्भर हैं, बजाय आज की परीक्षा के लिए आवश्यक **"स्मार्ट वर्क"** के।
- **Vishal Tiwari, a 28-year-old from Kanpur, said English-medium students often come from more stable and privileged backgrounds, making the competition seem uneven.**
कानपुर के 28 वर्षीय **विशाल तिवारी** ने कहा कि अंग्रेजी माध्यम के छात्र अक्सर अधिक स्थिर और संपन्न पृष्ठभूमि से आते हैं, जिससे प्रतिस्पर्धा असमान लगती है।
- **"English-medium students often have better professional degrees and exposure.**
"अंग्रेजी माध्यम के छात्रों के पास अक्सर बेहतर पेशेवर डिग्री और अनुभव होता है।
- **Their approach is efficient, while ours tends to be lengthy,"** he said.
उनका दृष्टिकोण अधिक कुशल होता है, जबकि हमारा लंबा होता है," उन्होंने कहा।

'Status symbol'

'प्रतिष्ठा का प्रतीक'



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- Mentors, too, recognise the shift. मेंटर्स भी इस बदलाव को पहचानते हैं।
- **Devraj**, a longtime guide in the area, said **English has increasingly become a status symbol**. इस क्षेत्र के लंबे समय से मार्गदर्शक देवराज ने कहा कि अंग्रेजी धीरे-धीरे एक प्रतिष्ठा का प्रतीक बन गई है।
- **“Fewer students are now preparing for the IAS in Hindi medium.** “अब कम छात्र हिंदी माध्यम में IAS की तैयारी कर रहे हैं।
- **In the next five years, their proportion may fall to around 20%,”** he says. अगले पांच वर्षों में उनका अनुपात लगभग 20% तक गिर सकता है,” उन्होंने कहा।
- **Shivangi** from **Ayodhya**, who has lived here since 2019, echoed the sentiment. **अयोध्या की शिवांगी**, जो 2019 से यहां रह रही हैं, ने भी यही भावना व्यक्त की।
- **“The mentorship is inadequate, and survival itself is difficult.** “मार्गदर्शन पर्याप्त नहीं है और यहां जीवित रहना भी कठिन है।
- Generally, **Hindi-medium students come from agrarian backgrounds across Hindi-speaking regions such as Bihar, Uttar Pradesh, and Jharkhand.** सामान्यतः हिंदी माध्यम के छात्र कृषि पृष्ठभूमि से आते हैं, जैसे बिहार, उत्तर प्रदेश और झारखंड।
- **Many end up focusing more on personality development than their core preparation,”** she said, adding that the cost of study material, though not very high, poses a burden on some students. कई छात्र अपनी मुख्य तैयारी के बजाय **व्यक्तित्व विकास** पर अधिक ध्यान देने लगते हैं,” उन्होंने कहा, और जोड़ा कि अध्ययन सामग्री की लागत अधिक नहीं होने के बावजूद कुछ छात्रों के लिए बोझ बन जाती है।
- **R.S. Shukla**, who was once an aspirant himself and is now a professor, said there is a dire need to change the perception of **Hindi**.

आर.एस. शुक्ला, जो पहले स्वयं अभ्यर्थी थे और अब प्रोफेसर हैं, ने कहा कि हिंदी के प्रति धारणा बदलने की सख्त जरूरत है।

• **“We, along with the government, should focus on building a strong foundational knowledge of both Hindi and English among students.**

“हमें सरकार के साथ मिलकर छात्रों में हिंदी और अंग्रेजी दोनों की मजबूत आधारभूत समझ विकसित करनी चाहिए।

• **Students should be determined, encouraged, and guided towards smart work so that this journey does not become a five-year plan, but a one-year effort,”** he said.

छात्रों को **स्मार्ट वर्क** की ओर प्रेरित और मार्गदर्शित किया जाना चाहिए ताकि यह यात्रा पांच साल की योजना न बनकर एक साल का प्रयास बन सके,” उन्होंने कहा।

28A. Digital library for Urdu literature launched

उर्दू साहित्य के लिए डिजिटल लाइब्रेरी लॉन्च

• The **Punjabi Wikimedians User Group** has launched an **Urdu Wikisource**, a free, open source, global digital library for **Urdu literature**.

पंजाबी विकिमीडियन्स यूजर ग्रुप ने उर्दू विकिसोर्स लॉन्च किया है, जो उर्दू साहित्य के लिए एक मुफ्त, ओपन सोर्स, वैश्विक डिजिटल लाइब्रेरी है।

• The group has also urged the **Punjab government** to ease **copyright restrictions**, which continue to hamper access to regional languages in the digital domain.

समूह ने **पंजाब सरकार** से **कॉपीराइट प्रतिबंधों** को आसान बनाने का आग्रह भी किया है, जो डिजिटल क्षेत्र में क्षेत्रीय भाषाओं की पहुंच में बाधा बने हुए हैं।

• The **British Library** shared seven rare historical texts that were digitised as part of the **‘Two Centuries of Indian Print’** project [2016-2022], bridging the gap between the physical archives in London and digital accessibility for users in South Asia.

Digital library for Urdu literature launched

PCS

The Hindu Bureau
CHANDIGARH

The Punjabi Wikimedians User Group has launched an Urdu Wikisource, a free, open source, global digital library for Urdu literature. The group has also urged the Punjab government to ease copyright restrictions, which continue to hamper access to regional languages in the digital domain.

Satdeep Gill, manager, content enablement, Wikimedia Foundation, said international partnerships provided the foundational content for the platform. “Rekhta Foundation, the Urdu literary repository, jump-started the project by sharing 10 rare Urdu texts, ensuring the platform launched with high-quality, culturally significant material. The British Library shared seven rare historical texts that were digitised as part of the ‘Two Centuries of Indian Print’ project [2016-2022], bridging the gap between the physical archives in London and digital accessibility for users in South Asia. These texts include *Alif Layla*, a book of Arabic fables, and a 19th century version of *Padmavat*, Malik Mohammad Jayasi’s Awadh poem,” Mr. Gill said.

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ब्रिटिश लाइब्रेरी ने सात दुर्लभ ऐतिहासिक ग्रंथ साझा किए, जिन्हें 'टू सेंचुरीज़ ऑफ इंडियन प्रिंट' परियोजना [2016-2022] के तहत डिजिटलाइज किया गया था, जिससे लंदन के भौतिक अभिलेखागार और दक्षिण एशिया के उपयोगकर्ताओं के लिए डिजिटल पहुंच के बीच की दूरी कम हुई।

- These texts include **Alif Layla**, a book of Arabic fables, and a 19th century version of **Padmavat**, **Malik Mohammad Jayasi's** Awadhi poem," Mr. Gill said.

इन ग्रंथों में **अलिफ लैला**, जो अरबी कथाओं की पुस्तक है, और 19वीं सदी का **पद्मावत**, जो **मलिक मोहम्मद जायसी** की अवधी कविता है, शामिल हैं," श्री गिल ने कहा।

Answers to April 21 quiz:

1. City whose name in Arabic means

"elephant's trunk" – **Ans: Khartoum**

2. Largest non-island city inaccessible by road

– **Ans: Iquitos**

3. City where the Niger river reaches its

northernmost arc – **Ans: Timbuktu**

4. City standing where the Negro and Amazon

ivers converge – **Ans: Manaus**

5. City where 'its' river bends north, inhabited

since 1200 BC – **Ans: Varanasi**

Visual: Chongqing

First contact: K.N. Viswanathan | Tamal Biswas

| Prem Nath Tiwari | Sunny Kumar | Sumit Raju

28A. QUIZ: Khartoum (Meaning: "Elephant's Trunk")

• **Khartoum derives its name from the Arabic word "al-khurṭūm," meaning "elephant's trunk."** The name reflects the city's unique geography at the **confluence of the Blue Nile and White Nile**, where the landform resembles an elephant's trunk.

• **Established as Egypt's administrative center in 1821, Khartoum later became Sudan's capital.**

• Today, it remains a key political and cultural hub, though recent conflicts have significantly impacted its infrastructure and governance.

Iquitos (Largest Non-Island City Inaccessible by

Road)

- Located deep in the **Amazon rainforest** of Peru, it is surrounded by dense rivers, making **air and river transport** the only access routes. Situated on the **Amazon River**, it developed during the rubber boom of the late 19th century.
- Today, it serves as a major commercial and cultural hub of Peru's Amazon region.

Timbuktu (Northernmost Arc of the Niger River)

- Timbuktu is located near the **northernmost arc (Great Bend) of the Niger River** in Mali.
- This unique river curvature brings the Niger closest to the **Sahara Desert**, making Timbuktu a historic crossroads of **trans-Saharan trade**.
- During the medieval period, it flourished as a centre of **Islamic scholarship**, with institutions like Sankore. Its strategic location enhanced trade, culture, and connectivity across West Africa.

Manaus (Confluence of Negro and Amazon Rivers)

- Manaus is located at the confluence of the **Rio Negro** and the **Amazon River**, forming the famous **"Meeting of Waters."**
- Here, the **dark Rio Negro** and the sandy Amazon flow side by side without mixing for several kilometres due to differences in temperature and speed.
- Manaus grew during the **rubber boom** of the late 19th century.

Varanasi (Northward Bend of the Ganga)

- Varanasi is situated on a unique stretch of the **Ganga River**, where it flows **northward (uttarvahini)**, considered highly auspicious in Hindu tradition.
- Archaeological and literary evidence indicates **habitation since around 1200 BCE**, making it **one of the world's oldest continuously inhabited cities**.
- Known as **Kashi**, it has been a centre of **religion, education, and culture**, with prominent ghats, temples, and ancient learning traditions.



Pope Leo prays with first woman Anglican leader in historic meet



REUTERS

PCS

Catholic leader Pope Leo XIV prayed on Monday in the Vatican with the Archbishop of Canterbury, Sarah Mullally, and vowed to keep working to overcome differences in a historic meeting with the first female leader of the Church of England and spiritual leader of the global Anglican Communion. AP

28A. Pope Leo prays with first woman Anglican leader in historic meet पोप लियो ने ऐतिहासिक बैठक में पहली महिला एंग्लिकन नेता के साथ प्रार्थना की

- Catholic leader Pope Leo XIV prayed on Monday in the Vatican with the Archbishop of Canterbury, Sarah Mullally, and vowed to keep working to overcome differences in a historic meeting with the first female leader of the Church of England and spiritual leader of the global Anglican Communion.

कैथोलिक नेता पोप लियो XIV ने सोमवार को वेटिकन में कैंटरबरी की आर्चबिशप सारा मुलैली के साथ प्रार्थना की और चर्च ऑफ इंग्लैंड की पहली महिला नेता तथा वैश्विक एंग्लिकन कम्यूनियन की आध्यात्मिक प्रमुख के साथ इस ऐतिहासिक बैठक में मतभेदों को दूर करने के लिए काम जारी रखने का संकल्प लिया।

GS Paper 1: History

28 April 2026

TOPICS COVERED

28A QUIZ

who designed for Braun

4. The famous saree from eastern India which is renowned for designs on the 'pallu' depicting mythological scenes and epic stories. **Ans: Baluchari**

5. The term for the mathematical proportion (~1.618) often used in design and architecture for aesthetic balance. **Ans: Golden Ratio**

6. The famous engineer who is said to have designed the internal metal framework for the Statue of Liberty. **Ans: Gustave Eiffel**

7. With which famous global brands would one associate the iconic designs 'Swoosh', 'Pecten' and 'Bibendum'?

Ans: Nike, Shell, and Michelin

Visual: The Iranian architect who designed this famous edifice in New Delhi. **Ans: Fariborz Sahba**

Early birds: Piyali Tuli | Sunil Madhavan | Arun Kumar Singh | Charulata Ganguly | Sadhan Panda

28A. QUIZ: International Design Day (Reason for Celebration)

- International Design Day is celebrated on April 27 to commemorate the founding of the International Council of Design in 1963.
- This global body promotes the value of design in improving communication, sustainability, and innovation.
- The day highlights the role of design in addressing social and developmental challenges.
- It encourages collaboration among designers worldwide and raises awareness about design's contribution to economic growth and cultural exchange.

Theme for 2026: "The Spaces in Between"

Times New Roman (Stanley Morison)

- Stanley Morison developed Times New Roman in 1931 for *The Times* of London to improve readability and space efficiency in newspapers.
- It is a **serif typeface** known for clarity, balanced proportions, and formal appearance.
- Widely adopted in publishing, academia, and government documents, it became a global standard. Its design reflects precision and tradition, making it one of the most influential typefaces in modern typography.

Arial (Robin Nicholas and Patricia Saunders)

- Robin Nicholas and Patricia Saunders co-designed Arial in 1982 for Monotype as a **sans-serif typeface optimized for digital screens**.



- It became widely popular due to its inclusion in Microsoft systems, enhancing readability on computers.
- Though often compared to Helvetica, Arial has distinct letterforms.
- Its widespread use in documents, websites, and interfaces reflects the shift toward digital typography and accessibility.

Helvetica (Max Miedinger and Eduard Hoffmann)

- Max Miedinger and Eduard Hoffmann created **Helvetica** in **1957** in Switzerland.
- A **sans-serif typeface**, it is known for neutrality, clean lines, and versatility. Widely used in **signage, branding, and public systems worldwide**, Helvetica embodies the **Swiss design philosophy** of simplicity and functionality.
- Its global adoption across corporations and governments highlights its enduring influence in modern visual communication.

Dieter Rams (10 Principles of Good Design)

- Dieter Rams is renowned for his **“10 Principles of Good Design,”** which emphasise **simplicity, functionality, honesty, and sustainability.**
- Developed during the late 20th century, these principles argue that **good design should be innovative, unobtrusive, and long-lasting.**
- Rams’ philosophy strongly influenced modern product design, including companies like Apple.
- His ideas continue to guide designers globally, promoting user-centric and environmentally responsible design practices.

Baluchari Saree (Mythological Pallu Designs)

- Baluchari Saree is a silk saree from **West Bengal**, especially the **Murshidabad** region.
- It is distinguished by intricate **pallu designs** depicting **mythological scenes**, epics like the Ramayana and Mahabharata, and royal court life.
- Originating in the 18th century under Nawabi patronage, it reflects Bengal’s rich weaving tradition.
- Today, it holds a **Geographical Indication (GI) tag.**

Golden Ratio (Mathematical Proportion ~1.618)

- The **Golden Ratio (~1.618)** is a mathematical proportion represented by the Greek letter **phi (φ)**, where the ratio of two quantities remains constant when the larger is divided by the smaller.
- Widely used in **architecture, art, and design**, it creates visually pleasing balance and harmony.
- Seen in structures like the **Parthenon** and natural patterns, it aligns with the **Fibonacci sequence**, making it a timeless principle in aesthetic composition.

GS Paper II: Polity		28 April 2026
TOPICS COVERED		
28A	ZPM wins 17 of 19 seats in Aizawl civic elections ZPM ने आइजोल नगर निगम चुनाव में 19 में से 17 सीटें जीतीं	
28A	NITI Aayog revamp shows tilt towards science and health नीति आयोग का पुनर्गठन विज्ञान और स्वास्थ्य की ओर झुकाव दर्शाता है	
28A	Gang of seven सात का समूह	
28A	Electoral roll purges raise constitutional questions	



28A	A tightening of the fist in India's digital public square भारत के डिजिटल सार्वजनिक क्षेत्र में नियंत्रण का सख्त होना
28A	BJP's rapid rise in Assam is more pronounced in ST seats असम में BJP का तेज़ उभार ST सीटों में अधिक स्पष्ट है

ZPM wins 17 of 19 seats in Aizawl civic elections

GS II: Polity
Press Trust of India
AIZAWL

The Zoram People's Movement (ZPM) on Monday secured a landslide victory in the Aizawl Municipal Corporation.

NITI Aayog revamp shows tilt towards science and health

GS II: Polity
Jacob Koshy
NEW DELHI

The revamp of the NITI Aayog last week with a new set of full-time members shows a tilt towards technology and health sectors.

Usually, the choice for the think tank has leaned towards economists.

Three of the five new members – Abhay Karandikar, M. Srinivas, and Gobardhan Das – have had long careers in health, biotechnology, and science.

Mr. Karandikar, who is currently the Secretary of the Department of Science and Technology, was previously the Director of the Indian Institute of Technology, Kanpur and Professor of electrical engineering at the Indian Institute of Technology, Mumbai.

Dr. Srinivas, until recently, was the Director of the All India Institute of Medical Sciences, Delhi.

Mr. Das, who is currently the Director of the Indian Institute of Science Education and Research, Bhopal, was Professor, School of Molecular Medicine, Jawaharlal Nehru University. He was also the BJP's candidate in the 2021 West Bengal Assembly election but quit the party prior to joining the insti-

28A. ZPM wins 17 of 19 seats in Aizawl civic elections ZPM ने आइजोल नगर निगम चुनाव में 19 में से 17 सीटें जीतीं

The Zoram People's Movement (ZPM) on Monday secured a landslide victory in the Aizawl Municipal Corporation polls, bagging 17 seats in the 19-member civic body, officials said.

जोरम पीपुल्स मूवमेंट (ZPM) ने सोमवार को आइजोल नगर निगम चुनाव में भारी जीत हासिल करते हुए 19 सदस्यीय निकाय में 17 सीटें जीतीं। अधिकारियों ने कहा, Main Opposition Mizo National Front (MNF), which had won the previous election in 2021 by securing 11 seats, had to settle with only one ward this time, while the Congress also bagged a seat.

मुख्य विपक्षी मिजो नेशनल फ्रंट (MNF), जिसने 2021 में पिछला चुनाव 11 सीटें जीतकर जीता था, इस बार केवल एक वार्ड पर सिमट गई, जबकि कांग्रेस ने भी एक सीट जीती।



Prime Minister Modi meets the newly appointed Vice Chairman of NITI Aayog, Ashok Lahiri.

tute in Bhopal.

One of the other two full-time members is an economist. K.V. Raju is currently member of the Economic Advisory Council to the Prime Minister. He specialises in agricultural policy, rural development, and water policy.

The other full-time member is Rajeev Gauba, a former Cabinet Secretary.

The NITI Aayog's newly appointed Vice-Chairman, Ashok Lahiri, is an economist. He was the Chief Economic Adviser from 2002 to 2007 and has served at several international policy institutions, including the World Bank and the IMF.

Like Mr. Das, he was a BJP candidate in the 2021 West Bengal election, the difference being that he won and is the MLA from Balurghat.

28A. NITI Aayog revamp shows tilt towards science and health

नीति आयोग का पुनर्गठन विज्ञान और स्वास्थ्य की ओर झुकाव दर्शाता है

The revamp of the NITI Aayog last week with a new set of full-time members shows a tilt towards technology and health sectors.

पिछले सप्ताह नीति आयोग का नए पूर्णकालिक सदस्यों के साथ पुनर्गठन प्रौद्योगिकी और स्वास्थ्य क्षेत्रों की ओर झुकाव दर्शाता है।

Usually, the choice for the think tank has leaned towards economists.

आमतौर पर इस थिंक टैंक के लिए चयन अर्थशास्त्रियों की ओर झुका रहता था।

Three of the five new members — Abhay Karandikar, M. Srinivas, and Gobardhan Das — have had long careers in health, biotechnology, and science.

पांच नए सदस्यों में से तीन — अभय करंदीकर, एम. श्रीनिवास और



गोवर्धन दास — का स्वास्थ्य, जैव प्रौद्योगिकी और विज्ञान में लंबा अनुभव रहा है।

- **Mr. Karandikar**, who is currently the Secretary of the **Department of Science and Technology**, was previously the Director of the **Indian Institute of Technology, Kanpur** and Professor of electrical engineering at the **Indian Institute of Technology, Mumbai**.

श्री करंदीकर, जो वर्तमान में विज्ञान और प्रौद्योगिकी विभाग के सचिव हैं, पहले भारतीय प्रौद्योगिकी संस्थान, कानपुर के निदेशक और भारतीय प्रौद्योगिकी संस्थान, मुंबई में विद्युत अभियांत्रिकी के प्रोफेसर थे।

- **Dr. Srinivas**, until recently, was the Director of the **All India Institute of Medical Sciences, Delhi**.

डॉ. श्रीनिवास, हाल तक अखिल भारतीय आयुर्विज्ञान संस्थान, दिल्ली के निदेशक थे।

- **Mr. Das**, who is currently the Director of the **Indian Institute of Science Education and Research, Bhopal**, was Professor, School of Molecular Medicine, **Jawaharlal Nehru University**.

श्री दास, जो वर्तमान में भारतीय विज्ञान शिक्षा और अनुसंधान संस्थान, भोपाल के निदेशक हैं, पहले जवाहरलाल नेहरू विश्वविद्यालय के स्कूल ऑफ मॉलिक्यूलर मेडिसिन में प्रोफेसर थे।

- He was also the **BJP's candidate** in the 2021 **West Bengal Assembly election** but quit the party prior to joining the institute in Bhopal.

वे 2021 के पश्चिम बंगाल विधानसभा चुनाव में BJP के उम्मीदवार भी थे, लेकिन भोपाल संस्थान में शामिल होने से पहले पार्टी छोड़ दी।

- One of the other two full-time members is an **economist**.

अन्य दो पूर्णकालिक सदस्यों में से एक अर्थशास्त्री है।

- **K.V. Raju** is currently a member of the **Economic Advisory Council to the Prime Minister**.

के.वी. राजू वर्तमान में प्रधानमंत्री की आर्थिक सलाहकार परिषद के सदस्य हैं।

- He specialises in **agricultural policy, rural development, and water policy**.

वे कृषि नीति, ग्रामीण विकास और जल नीति में विशेषज्ञ हैं।

- The other full-time member is **Rajeev Gauba**, a former **Cabinet Secretary**.

दूसरे पूर्णकालिक सदस्य राजीव गौबा हैं, जो पूर्व कैबिनेट सचिव रह चुके हैं।

- The **NITI Aayog's newly appointed Vice-Chairman, Ashok Lahiri**, is an **economist**.

नीति आयोग के नव-नियुक्त उपाध्यक्ष, अशोक लाहिड़ी, एक अर्थशास्त्री हैं।

- He was the **Chief Economic Adviser** from 2002 to 2007 and has served at several international policy institutions, including the **World Bank** and the **IMF**.

वे 2002 से 2007 तक मुख्य आर्थिक सलाहकार रहे और विश्व बैंक तथा IMF सहित कई अंतरराष्ट्रीय नीति संस्थानों में कार्य कर चुके हैं।

- Like **Mr. Das**, he was a **BJP candidate** in the 2021 **West Bengal election**, the difference being that he won and is the **MLA from Balurghat**.

श्री दास की तरह, वे भी 2021 के पश्चिम बंगाल चुनाव में BJP उम्मीदवार थे, अंतर यह है कि वे जीत गए और बालुरघाट से विधायक हैं।



Electoral roll purges raise constitutional questions

GS II: Polity

MOA

The Election Commission of India (ECI) has invented the term "logical discrepancy" to delete voters from the voters' list in the recent elections (the States of Assam, Kerala, Tamil Nadu and West Bengal, and the Union Territory of Puducherry). It is alleged that lakhs of voters have been removed from the voter list in States where elections have been held recently. Even the Supreme Court of India's innovative idea of tribunals could not get these voters back onto the list, mainly because of the near-total mess created by the ECI's Special Intensive Revision (SIR) of electoral rolls exercise.

It has been pointed out by many commentators – including this writer in this daily – that the SIR, as designed by the ECI, is deeply flawed and, if continued, will result in the elimination of a very large number of Indian citizens from the electoral roll. Media reports indicate an alarming situation, particularly in West Bengal, where lakhs of genuine citizens have had their names removed from the electoral roll and placed under the category of "logical discrepancies". The fact is that many of them were unable to vote in the election/first phase of the election.

Citizenship as basic requirement

The issue of the elimination of people from the voter list revolves around the question of citizenship. Article 326 enjoins that every person who is a citizen of India and who is not less than 18 years of age and who is not disqualified under the Constitution or law shall be entitled to be registered "as a voter at any election". Thus, citizenship is the basic requirement for anyone to be registered as a voter.

The citizenship law is administered by the Union Home Ministry. Therefore, it is the duty of the Ministry to announce the list of documents required to prove the citizenship of Indians. However, as far as is known, the Ministry has not issued any such list.

Instead, the ECI announced a list of documents at the time of initiating the SIR in Bihar. Since many documents that citizens normally use for various purposes, such as Aadhaar card, ration card, and even the photo voter identity card issued by the ECI itself, were not accepted by the ECI as proof of citizenship, people began running



P.D.T. Achary

Former Secretary
General, Lok Sabha

Voter deletions under the Special Intensive Revision of electoral rolls raise concerns over constitutional and procedural validity

helter-skelter in search of the documents listed by the ECI. Many of such documents were hard to find, especially for rural people who are not in the habit of preserving such documents. Thus, as many as 91 lakh voters were removed from the voter list in West Bengal because they could not produce the documents that the ECI required to prove their citizenship

Duty of the Home Ministry

A question of great constitutional significance arises here. Does the ECI have the power under Article 324 to determine what documents the citizens should produce to prove their citizenship? The simple answer is that such power is vested in the Union Home Ministry, and it is the constitutional duty of the Home Ministry to announce publicly the documents required for this purpose. The ECI can only verify those documents while enrolling citizens in the voters' list. Here, the ECI is acting beyond its jurisdiction. Article 324 does not empower the ECI to usurp the power of the Home Ministry. But it is surprising that the Supreme Court did not address this question when the issue of documents came before it. It was expected that the Court would direct the Union government to announce the list of documents and submit an affidavit in this regard. Instead, the Court merely requested the ECI to consider whether the Aadhaar card could also be counted as a relevant document.

The SIR has been conducted in the election-bound States, deviating from the law. Section 21 in The Representation Of The People Act, 1950 says that the electoral roll shall be revised before each general election and before a bye-election and also in any year as directed by the ECI. Apart from these the ECI can also undertake a special revision of the roll of a constituency or part of it for reasons to be recorded. Rule 25 of the Registration of Electors Rules, 1960 explains that the revision can be done summarily or intensively, which makes it clear that pre-election revision is summary in nature and the revision done in any year (when there is no election coming up) is intensive.

A combined reading of Section 21(2) of The Representation Of The People Act, 1950, and Rule 25 of the Registration of Electors Rules makes it clear that only a summary revision of the rules

can be done before the general election or any bye-election.

The intensive revision can be done at any other time when elections are not due, the reason being that such a revision is very comprehensive and the voters' list needs to be prepared afresh. It is a very time-consuming exercise and cannot be done in such a hasty manner. The SIR conducted by the ECI a couple of months before the Bihar election, and, thereafter, in Kerala, Tamil Nadu and West Bengal is thus a clear deviation from the law and past practice.

In West Bengal, where the SIR exercise was absolutely chaotic, over 91 lakh voters have been removed from the voter list, many of whom have been placed in the category of "logical discrepancy". This categorisation of citizens is unknown to the election law. The Registration of Electors Rules, 1960 lays out a detailed scheme for the preparation of the electoral roll. Besides, the ECI has issued detailed instructions, one of which is that the booth-level officers (BLOs) should distribute enumeration forms to all existing electors through house-to-house visits.

Rule 8 clearly states that the occupants of the dwelling houses shall furnish the information called for to the best of their ability. This should mean that the ECI will have to accept the information that the occupants of the house have collected to the best of their ability. It makes no sense for the ECI to insist on obtaining information that, in the normal course, is not possible to procure, particularly for unlettered rural people in remote parts of the country. The fact that 64 lakh voters in Bihar and 91 lakh in West Bengal were removed from the voters' list amply demonstrates the deliberate non-adherence to this and other rules by the ECI.

An instance of violations

The object of this hastily conducted SIR seems to be to remove millions of voters from the voters' list. Media reports suggest that much of these deletions have been done without giving those affected a hearing, which is a blatant denial of natural justice as well as a violation of statutory provisions. Free and fair elections cannot be ensured by deviating from or violating the statute. The justice system in the country cannot permanently turn a blind eye to it.

28A. Electoral roll purges raise constitutional questions

- The Election Commission of India (ECI) has invented the term "logical discrepancy" to delete voters from the voters' list in the recent elections (the States of Assam, Kerala, Tamil Nadu and West Bengal, and the Union Territory of Puducherry).

भारत निर्वाचन आयोग ने हालिया चुनावों में मतदाता सूची से नाम हटाने के लिए "तार्किक विसंगति" शब्द का प्रयोग किया है (असम, केरल, तमिलनाडु और पश्चिम बंगाल राज्य तथा पुडुचेरी केंद्र शासित प्रदेश)।

- Article 326 enjoins that every person who is a citizen of India and who is not less than 18 years of age and who is not disqualified under the Constitution or law shall be entitled to be registered "as a voter at any election".

अनुच्छेद 326 के अनुसार प्रत्येक भारतीय नागरिक, जिसकी आयु 18 वर्ष से कम नहीं है और जो अयोग्य नहीं है, उसे किसी भी चुनाव में मतदाता के रूप में पंजीकरण का अधिकार है।

- Thus, citizenship is the basic requirement for anyone to be registered as a voter. अतः नागरिकता मतदाता के रूप में पंजीकरण के लिए मूल आवश्यकता है।

- The citizenship law is administered by the Union Home Ministry. नागरिकता कानून का संचालन केंद्रीय गृह मंत्रालय द्वारा किया जाता है।

- Therefore, it is the duty of the Ministry to announce the list of documents required to prove the citizenship of Indians.



अतः भारतीय नागरिकता सिद्ध करने के लिए आवश्यक दस्तावेजों की सूची घोषित करना मंत्रालय का कर्तव्य है।

- However, as far as is known, the Ministry has not issued any such list. किन्तु उपलब्ध जानकारी के अनुसार ऐसी कोई सूची जारी नहीं की गई है।
- Instead, the ECI announced a list of documents at the time of initiating the SIR in Bihar. इसके विपरीत निर्वाचन आयोग ने बिहार में विशेष गहन पुनरीक्षण प्रारंभ करते समय दस्तावेजों की सूची जारी की।
- Since many documents that citizens normally use for various purposes, such as Aadhaar card, ration card, and even the photo voter identity card issued by the ECI itself, were not accepted by the ECI as proof of citizenship, people began running helter-skelter in search of the documents listed by the ECI. चूँकि आधार कार्ड, राशन कार्ड तथा स्वयं निर्वाचन आयोग द्वारा जारी मतदाता पहचान पत्र को नागरिकता के प्रमाण के रूप में स्वीकार नहीं किया गया, इसलिए लोग आयोग द्वारा सूचीबद्ध दस्तावेजों की खोज में इधर-उधर भटकने लगे।
- Thus, as many as 91 lakh voters were removed from the voter list in West Bengal because they could not produce the documents that the ECI required to prove their citizenship. इस प्रकार, पश्चिम बंगाल में लगभग 91 लाख मतदाताओं के नाम मतदाता सूची से हटा दिए गए क्योंकि वे आवश्यक नागरिकता प्रमाण दस्तावेज प्रस्तुत नहीं कर सके।

Duty of the Home Ministry (गृह मंत्रालय का कर्तव्य)

- A question of great constitutional significance arises here. यहाँ एक अत्यंत संवैधानिक महत्व का प्रश्न उत्पन्न होता है।
- Does the ECI have the power under Article 324 to determine what documents the citizens should produce to prove their citizenship? क्या निर्वाचन आयोग के पास अनुच्छेद 324 के अंतर्गत यह अधिकार है कि वह यह निर्धारित करे कि नागरिक अपनी नागरिकता सिद्ध करने के लिए कौन-से दस्तावेज प्रस्तुत करें?
- Rule 25 of the Registration of Electors Rules, 1960 explains that the revision can be done summarily or intensively, which makes it clear that pre-election revision is summary in nature and the revision done in any year (when there is no election coming up) is intensive. निर्वाचक पंजीकरण नियम, 1960 का नियम 25 स्पष्ट करता है कि पुनरीक्षण संक्षिप्त या गहन रूप में किया जा सकता है, जिससे यह स्पष्ट होता है कि चुनाव पूर्व पुनरीक्षण संक्षिप्त प्रकृति का होता है और अन्य समय किया गया पुनरीक्षण गहन होता है।
- A combined reading of Section 21(2) of The Representation Of The People Act, 1950, and Rule 25 of the Registration of Electors Rules makes it clear that only a summary revision of the rules can be done before the general election or any bye-election. जन प्रतिनिधित्व अधिनियम, 1950 की धारा 21(2) और निर्वाचक पंजीकरण नियमों के नियम 25 के संयुक्त अध्ययन से स्पष्ट होता है कि सामान्य चुनाव या उपचुनाव से पहले केवल संक्षिप्त पुनरीक्षण ही किया जा सकता है।

Intensive Revision and Legal Deviation (गहन पुनरीक्षण और विधिक विचलन)

- The intensive revision can be done at any other time when elections are not due, the reason being that such a revision is very comprehensive and the voters' list needs to be prepared afresh. गहन पुनरीक्षण उस समय किया जा सकता है जब चुनाव निर्धारित न हों, क्योंकि यह प्रक्रिया अत्यंत व्यापक होती है और मतदाता सूची को पुनः तैयार करना पड़ता है।



- It is a very **time-consuming exercise** and cannot be done in such a **hasty manner**.
यह एक अत्यंत समय लेने वाली प्रक्रिया है और इसे इतनी जल्दबाजी में नहीं किया जा सकता।
- This **categorisation of citizens** is unknown to the **election law**.
इस प्रकार का नागरिकों का वर्गीकरण चुनाव कानून में कहीं उल्लेखित नहीं है।
- The **Registration of Electors Rules, 1960** lays out a detailed scheme for the preparation of the **electoral roll**.
निर्वाचक पंजीकरण नियम, 1960 में मतदाता सूची तैयार करने की विस्तृत प्रक्रिया निर्धारित की गई है।
- Besides, the **ECI** has issued detailed instructions, one of which is that the **booth-level officers (BLOs)** should distribute **enumeration forms** to all existing electors through **house-to-house visits**.
इसके अतिरिक्त, निर्वाचन आयोग ने विस्तृत निर्देश जारी किए हैं, जिनमें से एक यह है कि **बूथ स्तर अधिकारी** सभी मतदाताओं को **घर-घर जाकर गणना प्रपत्र** वितरित करें।
- **Rule 8** clearly states that the occupants of the **dwelling houses** shall furnish the information called for to the best of their ability.
नियम 8 स्पष्ट रूप से कहता है कि **आवासों के निवासी** अपनी क्षमता के अनुसार आवश्यक जानकारी प्रदान करेंगे।

PATRIOTIC IAS



A tightening of the fist in India's digital public square

GS II: Polity

MOQ

Imagine this. You leave a sharp, satirical comment on social media or under a news article about rising fuel prices, and it gets a few likes. A few hours later, the comment disappears. The platform does not explain. Your account remains, but you notice that posts on similar topics no longer appear publicly. You have not been charged with any offence. No court has issued an order. Yet something has quietly shifted.

This is not a far-fetched scenario. It is a plausible outcome under the draft amendments to India's Information Technology Rules released by the Ministry of Electronics and Information Technology (MeitY) on March 30, 2026. Presented as technical clarifications, the changes mark a deeper transformation in how speech is governed online and who gets to decide its limits.

Core area of concern

At the centre of concern is a proposed expansion of executive power that risks bypassing Parliament and the courts. One provision, Rule 3(4), would require platforms to comply with a wide array of government-issued instruments, including advisories, directions and standard operating procedures, as a condition for retaining "safe harbour" protection under Section 79 of the IT Act. In plain terms, platforms would be legally safer if they follow government instructions, even when those instructions do not arise from formal law.

This sits uneasily with the Supreme Court of India's landmark ruling in *Shreya Singhal vs Union of India* (2015), which held that platforms are only required to act on unlawful content when they receive a court order or a government notification grounded in law. By allowing informal directives to trigger compliance obligations, the draft rules appear to dilute that constitutional safeguard.

The likely result is not targeted moderation but broad over-censorship. Faced with uncertain and potentially unpublished directives, platforms will err on the side of removal. It is the predictable



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The draft amendments to India's Information Technology Rules trigger fears of digital overreach and a departure from existing judicial rulings

logic of risk management. When liability is unclear, speech becomes expendable.

A second shift expands the scope of state oversight far beyond traditional publishers. Amendments to Rule 8 bring ordinary users who post or share news and current affairs content within the ambit of the government's oversight mechanism. This includes the Inter-Departmental Committee, a body empowered to review content and recommend blocking.

This is not merely an administrative adjustment. It reintroduces, through a different route, a regulatory framework that has already faced judicial scrutiny. In 2021, the Bombay High Court stayed key provisions of the IT Rules, citing concerns under Article 19(1)(a) of the Constitution. The Madras High Court later observed that such oversight could undermine media independence. Those challenges remain pending. Yet, the new draft effectively reconstructs the same architecture while those questions are unresolved.

An undefined role

Equally troubling is the transformation of the Inter-Departmental Committee itself. Originally designed to address grievances, it is now empowered to examine any "matter" referred by the Ministry of Information and Broadcasting. The term is left undefined. A procedure is currently in place under Rule 14 but compliance remains an issue. There is no clear threshold for intervention, and no guarantee that affected users will be heard before action is taken.

This shift from grievance redress to proactive scrutiny changes the character of the body. It becomes less a forum for dispute resolution and more an instrument of preemptive control.

The third major concern lies in expanded data retention obligations. The draft clarifies that platform duties to retain user data operate in addition to requirements under any other law. In practice, this could mean that personal data, browsing activity and communication records are stored for extended periods, potentially years,

depending on overlapping legal mandates.

The risks here are not abstract. Longer retention increases the surface area for misuse, whether through unauthorised access, data breaches or function creep. It also alters the relationship between citizens and digital spaces. When every interaction may be archived indefinitely, self-censorship follows naturally.

Taken together, these amendments signal a shift toward a model where executive discretion plays a dominant role in shaping online speech. The concern is not only about individual provisions but about their cumulative effect. Each change reinforces the other. Informal directives gain force through safe harbour rules. Oversight expands to include ordinary users. Data retention deepens the state's informational reach.

Upsetting the balance

Supporters of the policy may argue that governments require flexible tools to manage harmful content. That is true in principle. But constitutional systems impose limits on how that power is exercised. Delegated legislation must remain within the bounds of its parent statute, a principle affirmed in cases such as *Indian Express Newspapers vs Union of India* (1986). When rules begin to create new obligations that are not clearly grounded in law, the balance between regulation and overreach begins to tilt.

The short public consultation period, which ended on April 14, only heightens the concern. Changes of this magnitude deserve wider debate, legislative scrutiny and careful alignment with existing judicial rulings.

India's digital public sphere has grown precisely because it has allowed a diversity of voices, from professional journalists to ordinary citizens. That openness has always required some regulation. The question now is whether the new rules preserve that openness or narrow it through administrative control.

The answer will shape not only how platforms operate but also how freely citizens can speak, critique, and participate in public life.

28A. A tightening of the fist in India's digital public square

भारत के डिजिटल सार्वजनिक क्षेत्र में नियंत्रण का सख्त होना

- It is a plausible outcome under the **draft amendments to India's Information Technology Rules released by the Ministry of Electronics and Information Technology (MeitY) on March 30, 2026.**

यह भारत के सूचना प्रौद्योगिकी नियमों में प्रस्तावित मसौदा संशोधनों के तहत एक संभावित परिणाम है, जिन्हें इलेक्ट्रॉनिक्स और सूचना प्रौद्योगिकी मंत्रालय ने 30 मार्च 2026 को जारी किया।

- One provision, Rule 3(4), would require platforms to comply with a wide array of government-issued instruments, including advisories, directions and standard operating procedures, as a condition for retaining "safe harbour" protection under Section 79 of the IT Act.**

एक प्रावधान, नियम 3(4), प्लेटफार्मों को सरकारी निर्देशों, जैसे परामर्श, निर्देश और मानक संचालन प्रक्रियाओं, का पालन करने के लिए बाध्य करेगा, ताकि वे सूचना प्रौद्योगिकी अधिनियम की धारा 79 के तहत "सेफ हार्बर" संरक्षण बनाए रख सकें।

- In plain terms, platforms would be legally safer if they follow government instructions, even when those instructions do not arise from formal law.**

सरल शब्दों में, प्लेटफार्म सरकारी निर्देशों का पालन करने पर अधिक कानूनी रूप से सुरक्षित होंगे, भले ही वे निर्देश औपचारिक कानून से उत्पन्न न हों।

- This sits uneasily with the **Supreme Court of India's landmark ruling in *Shreya Singhal vs Union of India* (2015), which held that platforms are only required to act on unlawful content when they receive a court order or a government notification grounded in law.**

यह भारत के सर्वोच्च न्यायालय के ऐतिहासिक निर्णय, श्रेया सिंघल बनाम भारत संघ (2015), के विपरीत है,



जिसमें कहा गया था कि प्लेटफार्म केवल तभी अवैध सामग्री पर कार्रवाई करेंगे जब उन्हें न्यायालय का आदेश या कानून पर आधारित सरकारी अधिसूचना प्राप्त हो।

- The likely result is not **targeted moderation** but broad **over-censorship**.

संभावित परिणाम **लक्षित नियंत्रण** नहीं बल्कि व्यापक **अतिरिक्त सेंसरशिप** होगा।

- It is the **predictable logic of risk management**.

यह **जोखिम प्रबंधन** का स्वाभाविक परिणाम है।

- Amendments to **Rule 8** bring ordinary users who post or share **news and current affairs content** within the ambit of the government's **oversight mechanism**.

नियम 8 में संशोधन साधारण उपयोगकर्ताओं को भी, जो **समाचार और समसामयिक विषयों की सामग्री** साझा करते हैं, सरकार की **निगरानी प्रणाली** के अंतर्गत ले आता है।

- This includes the **Inter-Departmental Committee**, a body empowered to review content and recommend **blocking**.

इसमें **अंतर-विभागीय समिति** शामिल है, जिसे सामग्री की समीक्षा कर **प्रतिबंध लगाने** की सिफारिश करने का अधिकार है।

- The **Madras High Court** later observed that such oversight could undermine **media independence**.

बाद में **मद्रास उच्च न्यायालय** ने कहा कि ऐसी निगरानी **मीडिया की स्वतंत्रता** को कमजोर कर सकती है।

- Equally troubling is the **transformation of the Inter-Departmental Committee** itself.

समान रूप से चिंताजनक है **अंतर-विभागीय समिति** का स्वयं का परिवर्तन।

- Originally designed to address **grievances**, it is now empowered to examine any **“matter”** referred by the **Ministry of Information and Broadcasting**.

मूलतः **शिकायतों** के निवारण के लिए बनाई गई यह संस्था अब **सूचना एवं प्रसारण मंत्रालय** द्वारा संदर्भित किसी भी **“मामले”** की जांच करने के लिए सशक्त है।

- The term is left undefined.

यह शब्द **अपरिभाषित** छोड़ा गया है।

- A procedure is currently in place under **Rule 14** but compliance remains an issue.

नियम 14 के अंतर्गत प्रक्रिया मौजूद है, परन्तु अनुपालन अभी भी एक समस्या बना हुआ है।

- There is no clear threshold for **intervention**, and no guarantee that affected users will be heard before action is taken.

हस्तक्षेप के लिए कोई स्पष्ट सीमा नहीं है, और यह भी सुनिश्चित नहीं है कि प्रभावित उपयोगकर्ताओं को कार्रवाई से पहले सुना जाएगा।

- This **shift from grievance redress to proactive scrutiny** changes the character of the body.

शिकायत निवारण से **सक्रिय जांच** की ओर यह परिवर्तन संस्था के स्वरूप को बदल देता है।

- It becomes less a forum for **dispute resolution** and more an instrument of **preemptive control**.

यह **विवाद समाधान** के मंच के बजाय **पूर्व-नियंत्रण के साधन** के रूप में अधिक कार्य करने लगती है।

- The **third major concern** lies in expanded **data retention obligations**.

तीसरी प्रमुख चिंता **डेटा संग्रहण दायित्वों** के विस्तार में निहित है।

- The **draft clarifies that platform duties to retain user data** operate in addition to requirements under any other law.

मसौदा स्पष्ट करता है कि **उपयोगकर्ता डेटा** को सुरक्षित रखने की प्लेटफार्म की जिम्मेदारी अन्य कानूनों के अतिरिक्त भी लागू होगी।

- Informal directives gain force through **safe harbour rules**.

अनौपचारिक निर्देश **सेफ हार्बर नियमों** के माध्यम से प्रभावी हो जाते हैं।

- **Delegated legislation** must remain within the bounds of its **parent statute**, a principle affirmed in cases such as **Indian Express Newspapers vs Union of India (1986)**.



TELEGRAM CHANNEL: <https://t.me/patrioticIAS>

YOUTUBE CHANNEL: <https://www.youtube.com/@PatrioticIAS>

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प्रत्यायोजित विधान को अपने मूल अधिनियम की सीमाओं के भीतर रहना चाहिए, जैसा कि इंडियन एक्सप्रेस समाचारपत्र बनाम भारत संघ (1986) मामले में स्थापित किया गया।

- When rules begin to create new obligations that are not clearly grounded in law, the balance between **regulation and overreach** begins to tilt.
जब नियम ऐसे नए दायित्व उत्पन्न करने लगते हैं जो स्पष्ट रूप से कानून में आधारित नहीं होते, तो नियमन और अतिक्रमण के बीच संतुलन बिगड़ने लगता है।

28A. BJP's rapid rise in Assam is more pronounced in ST seats

असम में BJP का तेज़ उभार ST सीटों में अधिक स्पष्ट है

- **Assam has a total of 126 seats, of which 16 are reserved for the STs, who account for 12.4% of the State's total population of 3.12 crore as per the 2011 Census.**
असम में कुल 126 सीटें हैं, जिनमें से 16 सीटें अनुसूचित जनजातियों के लिए आरक्षित हैं, जो 2011 की जनगणना के अनुसार राज्य की कुल 3.12 करोड़ जनसंख्या का 12.4% हैं।

GS Paper II: Governance		28 April 2026
TOPICS COVERED		
28A	Can middle school students engage with AI? क्या माध्यमिक विद्यालय के छात्र AI के साथ जुड़ सकते हैं?	



Can middle school students engage with AI?

GS II: Governance

MOB

Recently, the Central Board of Secondary Education (CBSE) decided to introduce a Computational Thinking (CT) and Artificial Intelligence (AI) curriculum for classes 3-8, which will begin from the 2026-27 academic session. CT skills generally refer to abstraction, decomposition, pattern recognition, and algorithmic thinking. These skills are required to reason about intelligent systems and to understand how machine learning differs from rule-based computation. As with any transformational reform in education, it is necessary to examine the practicality of introducing computational concepts to middle school learners. Will it align with age-appropriate pedagogy for engaging with emerging digital and computational environments?

Global precedents

One first has to examine whether CBSE's curriculum clearly links CT and AI, since such a relationship is conceptually necessary. The foundational design principle behind the Organisation for Economic Co-operation and Development and the European Commission's AI Literacy Framework identifies CT as a precursor to AI learning. This framework recommends CT competencies across age bands beginning from early primary school. Similarly, the AI4K12 Initiative in the U.S. places CT-related competencies at the base of its "Five Big Ideas in AI." Their CT-competencies progression plan spans K-2, 3-5, 6-8, and 9-12 grade bands. The CBSE's sequencing broadly aligns with these comparative curricular architectures. However, its curriculum is designed independently in line with the National Education Policy (NEP), 2020 and the National Curriculum Framework for School Education (NCF-SE), 2023.

UNESCO also identifies topics such as "What is AI?",



Mamidala Jagadesh Kumar

Chairman, Review Committee for NEP 2020, Ministry of Education and former Chairman, UGC. Views are personal

The CBSE curriculum includes introductory discussions on AI fairness, responsible use, and digital safety. This focus is broadly consistent with cross-national practices

"Foundations of computing", and "Data literacy" as necessary for school students. Learners need to start cultivating logical thinking from an early stage and gradually build problem-solving skills. They also need opportunities to develop a basic understanding of AI as part of their broader digital learning.

Tackling inherent risks

There are, of course, risks associated with children interacting with AI. The CBSE curriculum includes introductory discussions on AI fairness, responsible use, and digital safety. This focus is broadly consistent with cross-national practices. For instance, the AI4K12 guidelines include topics such as recognising when AI systems may mislead; identifying bias in datasets; and distinguishing between AI and human capabilities across all age groups. But can children meaningfully engage with such content at a young age? Classroom-based interventions, including studies conducted in U.S. middle schools, led to interesting outcomes. They suggest that learners in the 11-13 age group can engage with AI ideas when supported by structured pedagogical interventions. These studies reveal that introducing ethical dimensions of AI at this stage can be pedagogically feasible.

A growing body of empirical research suggests that introducing concepts such as supervised learning or predictive modelling is viable for learners in the 11-14 age group. Many comprehensive research studies on AI in K-12 education suggest that school-age participants as young as 10-12 years can work with fundamental AI concepts. Thus, the CBSE's CT-AI framework appears compatible with the learning capacities observed in this age group.

Many international initiatives encourage the use of no-code tools for introductory AI learning. Multiple empirical studies show that by using such tools, middle

school learners can design, build, test, and reflect on their projects without coding. For this reason, the CBSE's expectation that Class 8 students can attempt to solve real-world problems using no-code tools is supported by several international initiatives.

However, children may start attributing human-like traits or capabilities to AI tools, although these tools do not actually possess them. Does the CBSE curriculum address this challenge by creating awareness among children? The CBSE's curriculum contains topics discussing ethical use, fairness, and responsible digital behaviour. Such discussions can help reduce children's misconceptions about AI. These modules can support better understanding and the prudent use of AI systems.

The CBSE curriculum follows a cross-disciplinary design by integrating CT into Mathematics and 'The World Around Us' course for Classes 3-5. Global experiences which involved cross-disciplinary instructional models reported improvements in students' reasoning and problem-solving in several contexts. The CBSE's pedagogical orientation reflects similar design principles.

Away from rote learning

One problem in Indian education is the habit of rote learning. CT and AI learning have the potential to encourage inquiry-driven, reflective learning rather than traditional rote-based methods. The CBSE curriculum emphasises practical modelling, reflection, and ethical reasoning. This approach can therefore contribute to ongoing efforts to move classroom practices away from rote-based methods.

International practices and available research suggests that middle school is an appropriate stage to introduce foundational CT-AI elements. The CBSE's CT-AI curriculum is structured to make thoughtful and effective use of this developmental stage in learners' growth, and it exhibits coherence with the vision of the NEP 2020.

28A. Can middle school students engage with AI?

क्या माध्यमिक विद्यालय के छात्र AI के साथ जुड़ सकते हैं?

- Recently, the **Central Board of Secondary Education (CBSE)** decided to introduce a **Computational Thinking (CT) and Artificial Intelligence (AI) curriculum for classes 3-8, which will begin from the 2026-27 academic session.**

हाल ही में केंद्रीय माध्यमिक शिक्षा बोर्ड ने कक्षा 3-8 के लिए कम्प्यूटेशनल चिंतन और कृत्रिम बुद्धिमत्ता पाठ्यक्रम शुरू करने का निर्णय लिया, जो 2026-27 शैक्षणिक सत्र से प्रारंभ होगा।



- CT skills generally refer to **abstraction, decomposition, pattern recognition, and algorithmic thinking**.
कम्प्यूटेशनल चिंतन कौशल सामान्यतः अमूर्तकरण, विघटन, पैटर्न पहचान, और कलन विधि आधारित चिंतन को संदर्भित करते हैं।
- These skills are required to reason about **intelligent systems** and to understand how **machine learning** differs from **rule-based computation**.
ये कौशल बुद्धिमान प्रणालियों के बारे में तर्क करने तथा यह समझने के लिए आवश्यक हैं कि मशीन अधिगम किस प्रकार नियम-आधारित गणना से भिन्न है।
- The **foundational design principle** behind the **Organisation for Economic Co-operation and Development** and the **European Commission's AI Literacy Framework** identifies **CT as a precursor to AI learning**.
आर्थिक सहयोग और विकास संगठन तथा यूरोपीय आयोग के कृत्रिम बुद्धिमत्ता साक्षरता ढाँचे का मूल सिद्धांत कम्प्यूटेशनल चिंतन को कृत्रिम बुद्धिमत्ता सीखने का आधार मानता है।
- This framework recommends **CT competencies** across age bands beginning from **early primary school**.
यह ढाँचा प्रारंभिक प्राथमिक स्तर से विभिन्न आयु वर्गों में कम्प्यूटेशनल चिंतन क्षमताओं की अनुशंसा करता है।
- Similarly, the **AI4K12 Initiative in the U.S.** places **CT-related competencies** at the base of its **"Five Big Ideas in AI."**
इसी प्रकार, संयुक्त राज्य अमेरिका की एआई4के12 पहल अपने "कृत्रिम बुद्धिमत्ता के पाँच प्रमुख विचारों" के आधार पर कम्प्यूटेशनल चिंतन से संबंधित क्षमताओं को रखती है।
- However, its curriculum is designed independently in line with the **National Education Policy (NEP), 2020** and the **National Curriculum Framework for School Education (NCF-SE), 2023**.
हालाँकि, इसका पाठ्यक्रम स्वतंत्र रूप से राष्ट्रीय शिक्षा नीति 2020 तथा स्कूल शिक्षा हेतु राष्ट्रीय पाठ्यचर्या रूपरेखा 2023 के अनुरूप तैयार किया गया है।
- **UNESCO** also identifies topics such as **"What is AI?"**, **"Foundations of computing"**, and **"Data literacy"** as necessary for school students.
यूनेस्को भी "कृत्रिम बुद्धिमत्ता क्या है?", "कम्प्यूटिंग की मूलभूत अवधारणाएँ", और "डेटा साक्षरता" जैसे विषयों को विद्यालयी छात्रों के लिए आवश्यक मानता है।
- **Learners need to start cultivating logical thinking from an early stage and gradually build problem-solving skills**.
विद्यार्थियों को प्रारंभिक अवस्था से ही तार्किक चिंतन विकसित करना चाहिए और धीरे-धीरे समस्या समाधान कौशल का निर्माण करना चाहिए।
- They also need opportunities to develop a basic understanding of **AI** as part of their broader **digital learning**.
उन्हें अपने व्यापक डिजिटल अधिगम के हिस्से के रूप में कृत्रिम बुद्धिमत्ता की मूलभूत समझ विकसित करने के अवसर भी मिलने चाहिए।

Tackling inherent risks (निहित जोखिमों का समाधान)

- There are, of course, **risks associated with children interacting with AI**.
निश्चित रूप से, बच्चों के कृत्रिम बुद्धिमत्ता के साथ संपर्क में आने से जुड़े जोखिम भी हैं।
- The **CBSE curriculum** includes introductory discussions on **AI fairness, responsible use, and digital safety**.
सीबीएसई पाठ्यक्रम में कृत्रिम बुद्धिमत्ता की निष्पक्षता, जिम्मेदार उपयोग, और डिजिटल सुरक्षा पर प्रारंभिक चर्चा शामिल है।
- This focus is broadly consistent with **cross-national practices**.
यह दृष्टिकोण व्यापक रूप से अंतरराष्ट्रीय प्रथाओं के अनुरूप है।



- For instance, the **AI4K12 guidelines** include topics such as **recognising when AI systems may mislead**, **identifying bias in datasets**, and **distinguishing between AI and human capabilities** across all age groups.
उदाहरण के लिए, एआई4के12 दिशा-निर्देश ऐसे विषयों को शामिल करते हैं जैसे यह पहचानना कि कब कृत्रिम बुद्धिमत्ता प्रणालियाँ भ्रमित कर सकती हैं, डेटा में पूर्वाग्रह की पहचान करना, और कृत्रिम बुद्धिमत्ता तथा मानव क्षमताओं के बीच अंतर करना।
- But can children meaningfully engage with such content at a **young age**?
परंतु क्या बच्चे इतनी कम आयु में ऐसे विषयों के साथ सार्थक रूप से जुड़ सकते हैं?
- Classroom-based interventions**, including studies conducted in **U.S. middle schools**, led to interesting outcomes.
कक्षा-आधारित हस्तक्षेपों, जिनमें अमेरिकी मध्य विद्यालयों में किए गए अध्ययन शामिल हैं, ने रोचक परिणाम दिए।
- They suggest that learners in the **11-13 age group** can engage with **AI ideas** when supported by **structured pedagogical interventions**.
ये संकेत देते हैं कि 11-13 वर्ष आयु वर्ग के विद्यार्थी संरचित शिक्षण हस्तक्षेपों के माध्यम से कृत्रिम बुद्धिमत्ता के विचारों से जुड़ सकते हैं।
- These studies reveal that introducing **ethical dimensions of AI** at this stage can be **pedagogically feasible**.
ये अध्ययन दर्शाते हैं कि इस स्तर पर कृत्रिम बुद्धिमत्ता के नैतिक आयामों का परिचय कराना शैक्षणिक दृष्टि से संभव है।
- A growing body of **empirical research** suggests that introducing concepts such as **supervised learning** or **predictive modelling** is viable for learners in the **11-14 age group**.
बढ़ते हुए अनुभवजन्य अनुसंधान से यह संकेत मिलता है कि पर्यवेक्षित अधिगम तथा पूर्वानुमानात्मक प्रतिरूपण जैसे सिद्धांतों को 11-14 वर्ष आयु वर्ग के विद्यार्थियों को सिखाना संभव है।
- Many comprehensive **research studies on AI in K-12 education** suggest that school-age participants as young as **10-12 years** can work with fundamental **AI concepts**.
के-12 शिक्षा में कृत्रिम बुद्धिमत्ता पर कई व्यापक अनुसंधान अध्ययनों से पता चलता है कि 10-12 वर्ष आयु के विद्यार्थी भी मूलभूत कृत्रिम बुद्धिमत्ता अवधारणाओं के साथ कार्य कर सकते हैं।
- Thus, the **CBSE's CT-AI framework** appears compatible with the **learning capacities** observed in this age group.
इस प्रकार, सीबीएसई का कम्प्यूटेशनल चिंतन-कृत्रिम बुद्धिमत्ता ढाँचा इस आयु वर्ग की अधिगम क्षमताओं के अनुरूप प्रतीत होता है।
- The **CBSE's CT-AI curriculum** is structured to make **thoughtful and effective use** of this developmental stage in learners' growth, and it exhibits coherence with the vision of the **NEP 2020**.
सीबीएसई का कम्प्यूटेशनल चिंतन-कृत्रिम बुद्धिमत्ता पाठ्यक्रम विद्यार्थियों के विकास के इस चरण का विचारपूर्ण और प्रभावी उपयोग करने हेतु संरचित है तथा यह राष्ट्रीय शिक्षा नीति 2020 के दृष्टिकोण के अनुरूप है।

GS Paper II: International Relations		28 April 2026
TOPICS COVERED		
28A	Rajnath in Bishkek for SCO meeting राजनाथ बिश्केक में SCO बैठक के लिए	
28A	Legal limits on U.S. war involvement अमेरिका की युद्ध में भागीदारी पर कानूनी सीमाएँ	
28A	The evolving China-Pakistan space cooperation विकसित होता चीन-पाकिस्तान अंतरिक्ष सहयोग	



28A	Oil India reports hydrocarbon discovery in its block in Libya ऑयल इंडिया ने लीबिया में अपने ब्लॉक में हाइड्रोकार्बन खोज की सूचना दी
28A	Symbiosis unveils Asia's rst UNESCO chair on Gender Inclusion & Skill Development / सिम्बायोसिस ने एशिया की पहली UNESCO चेयर (लैंगिक समावेशन एवं कौशल विकास) का उद्घाटन किया

Rajnath in Bishkek for SCO meeting

Event brings together the Defence Ministers of SCO member states; Minister is expected to hold bilateral discussions with his counterparts

GS II: IR

Saurabh Trivedi
NEW DELHI

Defence Minister Rajnath Singh on Monday arrived in Bishkek, Kyrgyz Republic, leading a high-level Indian delegation for the Shanghai Cooperation Organisation (SCO) Defence Ministers' Meeting on Tuesday.

On the sidelines of the meeting, Mr. Singh is expected to hold bilateral discussions with his counterparts from Belarus, Kazakhstan, Kyrgyz Republic, and other participating nations, aimed at strengthening defence cooperation and expanding strategic ties.

Sources in the Defence Ministry said the meeting would bring together the Defence Ministers of SCO member states to deliberate on key regional and global security challenges, international peace, counter-terrorism efforts, and enhancing defence collaboration within the grouping.

The discussions are being held amid ongoing geopolitical tensions linked to the West Asia crisis, with member countries likely to



India connect: Defence Minister Rajnath Singh with members of the Indian diaspora in Bishkek, Kyrgyz Republic on Monday. PTI

The Defence Minister will underscore Indian stance of zero tolerance towards terrorism, extremism

explore measures to mitigate the impact of the conflict on regional stability.

During the meeting, Mr. Singh is expected to reiterate India's commitment to global peace and stability, while underscoring its firm stance of zero tolerance towards terrorism and extremism in the face of evol-

ving security challenges.

Established on June 15, 2001 in Shanghai, the SCO is one of the largest regional organisations focusing on political, economic, and security cooperation. Its members are India, Russia, China, Kazakhstan, Kyrgyz Republic, Pakistan, Tajikistan, Uzbekistan, Iran, and Belarus.

India became a full member of the SCO in 2017 and assumed the rotating chairmanship in 2023, further deepening its engagement with the grouping.

one of the largest regional organisations focusing on **political, economic, and security cooperation**.

28A. Rajnath in Bishkek for SCO meeting
राजनाथ बिश्केक में SCO बैठक के लिए

- Defence Minister **Rajnath Singh** on Monday arrived in **Bishkek, Kyrgyz Republic**, leading a high-level Indian delegation for the **Shanghai Cooperation Organisation (SCO) Defence Ministers' Meeting** on Tuesday.

रक्षा मंत्री राजनाथ सिंह सोमवार को किर्गिज़ गणराज्य के बिश्केक पहुंचे, जहां वे मंगलवार को होने वाली शंघाई सहयोग संगठन (SCO) रक्षा मंत्रियों की बैठक के लिए उच्च स्तरीय भारतीय प्रतिनिधिमंडल का नेतृत्व कर रहे हैं।

- On the sidelines of the meeting, Mr. Singh is expected to hold **bilateral discussions** with his counterparts from **Belarus, Kazakhstan, Kyrgyz Republic**, and other participating nations, aimed at strengthening **defence cooperation** and expanding **strategic ties**.

बैठक के इतर, श्री सिंह **बेलारूस, कजाकिस्तान, किर्गिज़ गणराज्य** और अन्य भाग लेने वाले देशों के समकक्षों के साथ **द्विपक्षीय वार्ता** करने की उम्मीद है, जिसका उद्देश्य **रक्षा सहयोग** को मजबूत करना और **रणनीतिक संबंधों** का विस्तार करना है।

- Established on **June 15, 2001** in **Shanghai**, the **SCO** is



15 जून 2001 को शंघाई में स्थापित, SCO राजनीतिक, आर्थिक और सुरक्षा सहयोग पर केंद्रित सबसे बड़े क्षेत्रीय संगठनों में से एक है।

- Its members are India, Russia, China, Kazakhstan, Kyrgyz Republic, Pakistan, Tajikistan, Uzbekistan, Iran, and Belarus.
इसके सदस्य भारत, रूस, चीन, कजाकिस्तान, किर्गिज़ गणराज्य, पाकिस्तान, ताजिकिस्तान, उज्बेकिस्तान, ईरान और बेलारूस हैं।
- India became a full member of the SCO in 2017 and assumed the rotating chairmanship in 2023, further deepening its engagement with the grouping.
भारत 2017 में SCO का पूर्ण सदस्य बना और 2023 में घूमती अध्यक्षता संभाली, जिससे इस समूह के साथ उसका जुड़ाव और गहरा हुआ।

Legal limits on U.S. war involvement

The War Powers Act requires the President to seek authorisation from Congress for the continued use of military force abroad beyond 60 days of such involvement, raising questions over the Trump administration's future course of action in the ongoing military engagement in West Asia

SS II, IR

EXPLAINER

Narayan Lakshman

The story so far:

The administration of U.S. President Donald Trump launched a military offensive against Iran on February 28, in tandem with Israeli strikes across the region. Tehran's retaliation, entailing missile and drone attacks on Israel and Gulf countries such as the UAE, Qatar, Saudi Arabia and others, as well as its blockade of the critical oil transportation route through the Strait of Hormuz, led Washington deeper into the military engagement against Iran. Despite a fragile ceasefire and the U.S.'s counter-blockade of the Iranian ports and naval manoeuvres giving it a measure of control of the strait, the overall war plans of the Trump administration might be in jeopardy due to a provision of the U.S. constitution - the War Powers Act (WPA). The Act requires the President to seek authorisation from Congress for the continued use of military force in hostilities abroad beyond 60 days of such involvement, yet going by past record, Mr. Trump may have several options to circumvent this requirement and persist with the ongoing military engagement in West Asia.

Provisions of the WPA

The Act, known formally as the War Powers Resolution of 1973, was introduced into U.S. law in the context of President Richard Nixon's support for clandestine hostilities in Cambodia during the Vietnam War, carried out sans Congressional consent. Mr. Nixon vetoed the bill, yet it was overridden by Congress and enacted into law as a means for Congress to limit presidential authority to wage war.

In its core provision, the WPA intends "...to fulfill the intent of the framers of the



U.S. President Donald Trump in the Oval Office at the White House in Washington D.C. REUTERS

Constitution...and insure that the collective judgment of both the Congress and the President will apply to the introduction of United States Armed Forces into hostilities."

The U.S. Constitution originally sought to divide war powers between the President and Congress, with Congress alone retaining the authority to declare war and appropriate funding for the military, while recognising the President as the Commander-in-Chief of the armed forces. Yet, even as early as the 1950s and 1960s, through the years of the U.S.'s prolonged military campaigns in the Korean and Vietnam Wars, the lines of responsibility for such engagement began to blur across the executive and legislative branches of the U.S. government.

The Act seeks to remove all room for doubt in this context as it stipulates, first, that even prior to the President committing troops into hostilities on foreign soil, Congress should be consulted "in every possible instance." Second, the WPA requires the President to report to

Congress within 48 hours of deploying U.S. forces, unless Congress itself has declared war or statutorily authorised the action. Third, every U.S. president who commits his military to engage in conflicts abroad must continue reporting to Congress at least every six months for the duration of such an engagement.

As per the Act, if 60 days pass after the President's first reporting deadline to Congress, the use of the U.S. military and its assets is automatically terminated unless Congress had originally declared war or passed legislation authorising the wartime actions. A grace allowed to the president in this regard is that he is permitted to extend the 60-day period by an additional 30 days by certifying in writing to Congress the need for continued use of force.

Options for Trump administration

There are several points of ambiguity regarding Congressional authorisation for war, in this context. Firstly, the precise timeline of reporting requirements to get

the wartime action of the Trump White House sanctioned by Congress is currently a subject of dispute. On one hand there is a lack of clarity on whether the 60-day deadline is April 29 - based on the day that hostilities began - or May 1 - based on the day that the White House informed Congress. Second, a number of Republican lawmakers have said that the ceasefire period should not count toward the 60-day deadline, with a few Democrats supporting this view too. Third, there might be Congressional reticence towards authorising the White House's war efforts, given the lack of recent precedent - Congress has not formally authorised the use of military force since 2002, when the U.S. was involved in hostilities in Iraq.

Nevertheless, the three clear options available to Mr. Trump at this point are the following: to submit to the WPA's authority and seek approval for continued military engagement, to begin winding down the war effort immediately, or to take advantage of the 30-day grace period, and use such an extension to pull back forces and assets from the region, rather than engage in further offensive manoeuvres of any kind.

Mr. Trump might seek to press his own precedent of 2019 when he ignored the deadline set by the WPA to continue military engagement in the conflict in Yemen that also included Saudi Arabia. He might also quote the fact that previous Presidents, from Nixon to Barack Obama - in the context of the war in Libya - did the same and found various excuses to keep fighting abroad without a nod from Congress. In any case, apart from a few scattered efforts by lawmakers such as Republican Lisa Murkowski, who is said to be working on a formal authorisation for the ongoing war so as to introduce guardrails into the operation, yet has not introduced such a proposal to the floor of the Senate, Republicans do not appear to be in a mood to dampen their President's momentum on the war front.

THE GIST

U.S. President Donald Trump's administration launched a military offensive against Iran on February 28. However, the War Powers Act could place the Trump administration's broader war plans under legal and political strain.

Three clear options available to Donald Trump are: to submit to the WPA's authority and seek approval for continued military engagement, to begin winding down the war effort immediately, or to take advantage of the 30-day grace period to pull back forces.

28A. Legal limits on U.S. war involvement

अमेरिका की युद्ध में भागीदारी पर कानूनी सीमाएँ

- The War Powers Act requires the President to seek authorisation from Congress for the continued use of military force abroad beyond 60 days of such involvement, raising questions over the Trump administration's future course of action in the ongoing military engagement in West Asia

वार पावर्स एक्ट के अनुसार राष्ट्रपति को कांग्रेस से अनुमोदन प्राप्त करना आवश्यक है यदि विदेश में सैन्य बल का उपयोग 60 दिनों से अधिक जारी रखना हो, जिससे चल रहे पश्चिम एशिया में सैन्य संलग्नता के संदर्भ में ट्रम्प प्रशासन की भविष्य की नीति पर प्रश्न उठते हैं

U.S. Military Offensive and War Powers Act (अमेरिका का सैन्य आक्रमण और युद्ध शक्तियाँ अधिनियम)



- The **administration of U.S. President Donald Trump** launched a **military offensive against Iran on February 28**, in tandem with **Israeli strikes** across the region.
अमेरिका के राष्ट्रपति डोनाल्ड ट्रंप के प्रशासन ने 28 फरवरी को ईरान के विरुद्ध सैन्य आक्रमण प्रारम्भ किया, जो क्षेत्र में इजरायली हमलों के साथ समन्वित था।
- **Tehran's retaliation**, entailing **missile and drone attacks on Israel and Gulf countries** such as the **UAE, Qatar, Saudi Arabia** and others, as well as its **blockade of the Strait of Hormuz**, led **Washington deeper into the military engagement** against Iran.
तेहरान की प्रतिकारात्मक कार्रवाई, जिसमें मिसाइल और ड्रोन हमले शामिल थे, जो इजराइल तथा खाड़ी देशों जैसे संयुक्त अरब अमीरात, कतर, सऊदी अरब आदि पर किए गए, साथ ही हॉर्मुज जलडमरूमध्य की नाकेबंदी, ने वॉशिंगटन को इस सैन्य संघर्ष में और गहराई तक शामिल कर दिया।
- **Mr. Nixon vetoed the bill**, but it was **overridden by Congress** and enacted to **limit presidential war powers**.
रिचर्ड निकसन ने इस विधेयक को अस्वीकार किया, परंतु इसे कांग्रेस द्वारा पारित कर दिया गया और इसका उद्देश्य राष्ट्रपति की युद्ध संबंधी शक्तियों को सीमित करना था।
- The **core objective of the WPA** is to ensure that both the **President and Congress jointly decide on the deployment of U.S. Armed Forces**.
युद्ध शक्तियाँ अधिनियम का मुख्य उद्देश्य यह सुनिश्चित करना है कि अमेरिकी सशस्त्र बलों की तैनाती के संबंध में राष्ट्रपति और कांग्रेस दोनों का संयुक्त निर्णय हो।
- The **U.S. Constitution** originally divided **war powers** between **Congress and the President**, giving **Congress the authority to declare war** and **President the role of Commander-in-Chief**.
अमेरिकी संविधान ने प्रारंभ में युद्ध शक्तियों का विभाजन किया था, जिसमें कांग्रेस को युद्ध घोषित करने का अधिकार और राष्ट्रपति को सशस्त्र बलों का सर्वोच्च कमांडर बनाया गया था।
- However, during the **Korean and Vietnam Wars**, these distinctions became blurred between the **executive and legislative branches**.
किन्तु कोरियाई और वियतनाम युद्धों के दौरान कार्यपालिका और विधायिका के बीच ये सीमाएँ धुंधली हो गईं।
- The Act clarifies that the **President must consult Congress before deploying troops abroad** in every possible case.
यह अधिनियम स्पष्ट करता है कि विदेश में सैनिक भेजने से पूर्व राष्ट्रपति को हर संभव स्थिति में कांग्रेस से परामर्श करना चाहिए।
- The **President must report to Congress within 48 hours** of deploying military forces unless war is already authorised.
राष्ट्रपति को सैन्य बल की तैनाती के 48 घंटे के भीतर कांग्रेस को सूचित करना आवश्यक है, यदि पहले से युद्ध की अनुमति नहीं है।
- The **President must continue reporting every six months** during the course of military engagement abroad.
विदेश में सैन्य अभियान के दौरान राष्ट्रपति को प्रत्येक छह महीने में नियमित रिपोर्ट प्रस्तुत करनी होती है।
- **If 60 days pass after the first report, the military action must cease automatically** unless Congress authorises it.
यदि पहली रिपोर्ट के बाद 60 दिन बीत जाते हैं, तो सैन्य कार्रवाई स्वतः समाप्त हो जानी चाहिए, जब तक कि कांग्रेस इसकी अनुमति न दे।
- **The President can extend this period by 30 days** by formally certifying the need for continued military action.
राष्ट्रपति इस अवधि को 30 दिनों तक बढ़ा सकते हैं, बशर्ते वे औपचारिक रूप से निरंतर सैन्य कार्रवाई की आवश्यकता प्रमाणित करें।
- On one hand, there is a lack of clarity on whether the **60-day deadline is April 29** based on the day hostilities began or **May 1** based on when the White House informed Congress.



एक ओर यह स्पष्ट नहीं है कि 60 दिन की समय-सीमा 29 अप्रैल से मानी जाए, जब शत्रुता प्रारंभ हुई, या 1 मई से, जब व्हाइट हाउस ने कांग्रेस को सूचित किया।

- Second, a number of Republican lawmakers have said that the ceasefire period should not count toward the 60-day deadline, with some Democrats also supporting this view.
- द्वाितीय, कई रिपब्लिकन विधायकों ने कहा है कि युद्धविराम अवधि को 60 दिन की समय-सीमा में शामिल नहीं किया जाना चाहिए, और कुछ डेमोक्रेट्स भी इस मत का समर्थन करते हैं।
- Congress has not formally authorised the use of military force since 2002, when the U.S. was involved in Iraq.

कांग्रेस ने 2002 के बाद से सैन्य बल के उपयोग को औपचारिक रूप से स्वीकृति नहीं दी है, जब अमेरिका इराक में संलग्न था।

The evolving China-Pakistan space cooperation

The 'all-weather ties' between China and Pakistan are reflected in their space cooperation as well

GS II IR
Gunjan Singh

MOB
Gunjan Singh

The Chinese space programme has undertaken major strides since it built and launched its first satellite in 1970. In last half a century Beijing has conducted satellite launches, built its own navigation system, carried out successful spacewalks, and built and operated its own space station. China is also in the process of undertaking a manned moon mission by 2030. China has also consistently promoted its space technologies and pushed for cooperation under Belt and Road Initiative (BRI). This entails "a service network weaved by satellites and ground stations among the BRI partner countries has promoted the space industry to better benefit the local people". China has also used its launching platform, the Long March, to promote its soft power by launching satellite for a number of other countries.

The 'all-weather friendship' between China and Pakistan has been replicated in their space cooperation as well. The partnership began in 1990 with China launching Pakistan's Badr-1 satellite. Today, China has built and launched satellites for Pakistan and in 2026 announced that it will send one Pakistani astronaut to the Tiangong space station.

Lunar mission and satellite launches
China has selected Muhammad Zeeshan Ali and Khurram Daud, two Pakistani candidates who will be trained in China for a visit to the Tiangong space station. However, only one of them will be visiting the space station as the payload specialist. This is being done under the 2025 agreement between the China Manned Space Engineering Office (CMSEO) and the Pakistan Space and Upper Atmosphere Research Commission.

China had also launched the ICUBE-Q in 2024 on Chang'e 6 orbiter. This was

developed in a collaboration between the Pakistan's Institute of Space Technology (IST) and Shanghai Jiao Tong University (SJTU). The ICUBE-Q, a lunar CubeSat weighing about 7kg was to explore the far side of the moon. It was successful in capturing images of the moon and the sun and transmitting them back to Earth.

China has been the only country which has launched a number of Pakistani satellites in the last two decades. This has helped Pakistan build a network of reconnaissance and communication satellite network. The latest mission in April 2026 saw Pakistan's indigenous electro-optical satellite, EO-3 being launched from China's Taiyuan Satellite Launch Center. In 2025 China had launched three Pakistani satellites, a remote-sensing satellite (PRSS-2) in October 2025, Pakistan Remote Sensing Satellite (PRSS-1) in July 2025 and PRSS-E01 in January 2025. In 2024 China had launched the second communication

satellite for Pakistan, PakSat MMI. The first Pakistani communication satellite PAKSAT-IR was launched in 2011.

Navigation cooperation

BeiDou Navigation Satellite System (BDS) is China's indigenous navigation system. It is also seen as the plausible alternative to the United States, Global Positioning System (GPS). The BeiDou system is considered to be very precise with providing information with 2 centimetres precision and this can be improved to 5 millimetres after image processing. This can be very helpful in disaster relief, urban planning, traffic guidance as well as environmental management. In 2014 Pakistan became the first foreign country to use the BeiDou navigation system.

Under the China-Pakistan defence cooperation, the Pakistani military is all equipped to use the BeiDou system. In 2020 Chinese Satellite Navigation Office (CSNO) had announced that they will be establishing a Continuously Operating Radar Station (CORS) network in Pakistan which will be BeiDou enabled.

The developments highlight that the ties between China and Pakistan has moved to the space arena as well, giving Islamabad a strategic advantage. The dual nature of space technology also helps Pakistan gain access to better navigation, telecommunication and disaster relief. (Dr. Gunjan Singh is an Associate Professor at OP Jindal Global University.)

THE GIST

The China-Pakistan space partnership began in 1990 with China launching Pakistan's Badr-1 satellite.

China has been the only country which has launched a number of Pakistani satellites in the last two decades. Additionally, under the China-Pakistan defence cooperation, the Pakistani military is all equipped to use the BeiDou navigation system.

28A. The evolving China-Pakistan space cooperation

विकसित होता चीन-पाकिस्तान अंतरिक्ष सहयोग

- The 'all-weather ties' between China and Pakistan are reflected in their space cooperation as well
- चीन और पाकिस्तान के बीच 'हर मौसम की मित्रता' उनके अंतरिक्ष सहयोग में भी परिलक्षित होती है

Chinese Space Programme and China-Pakistan Cooperation (चीनी अंतरिक्ष कार्यक्रम और चीन-पाकिस्तान सहयोग)

- The Chinese space programme has undertaken major strides since it built and launched its first satellite in 1970.

चीनी अंतरिक्ष कार्यक्रम ने 1970 में अपने पहले उपग्रह के प्रक्षेपण के बाद से उल्लेखनीय प्रगति की है।

- In the last half a century, Beijing has conducted satellite launches, built its own navigation system, carried out successful spacewalks, and built and operated its own space station. पिछले आधी सदी में बीजिंग ने उपग्रह प्रक्षेपण, अपना नेविगेशन तंत्र, सफल अंतरिक्ष यात्राएँ तथा अपना अंतरिक्ष स्टेशन विकसित और संचालित किया है।

- China is also undertaking a manned moon mission by 2030.

चीन 2030 तक मानवयुक्त चंद्र मिशन की दिशा में कार्य कर रहा है।



- China has promoted its **space technologies** and pushed cooperation under the **Belt and Road Initiative (BRI)**.
चीन ने अपनी अंतरिक्ष प्रौद्योगिकी को बढ़ावा दिया है तथा **बेल्ट एंड रोड पहल** के अंतर्गत सहयोग को प्रोत्साहित किया है।
- This includes a **satellite-ground service network** among **BRI partner countries** to benefit local populations.
इसमें **उपग्रह और भू-स्टेशनों का नेटवर्क** शामिल है जो **साझेदार देशों** के लोगों के हित में कार्य करता है।
- China has also used the **Long March launch platform** to enhance its **soft power** by launching satellites for other countries.
चीन ने **लॉन्ग मार्च प्रक्षेपण मंच** का उपयोग करते हुए अन्य देशों के उपग्रह प्रक्षेपित कर अपनी **सॉफ्ट पावर** को बढ़ाया है।
- The **China-Pakistan space cooperation** began in **1990** with the launch of Pakistan's **Badr-I satellite**.
यह सहयोग **1990** में **बद्र-एक उपग्रह** के प्रक्षेपण के साथ प्रारम्भ हुआ।
- China has built and launched several **Pakistani satellites** and in **2026** announced sending a **Pakistani astronaut to Tiangong space station**.
चीन ने कई पाकिस्तानी उपग्रहों का निर्माण और प्रक्षेपण किया है तथा **2026** में एक पाकिस्तानी अंतरिक्ष यात्री को **तियांगोंग अंतरिक्ष स्टेशन** भेजने की घोषणा की।

Lunar mission and satellite launches (चंद्र मिशन और उपग्रह प्रक्षेपण)

- China has selected **Muhammad Zeeshan Ali and Khurram Daud** for training, though only one will travel as a **payload specialist**.
चीन ने **मुहम्मद ज़ीशन अली और खुर्रम दाऊद** का चयन प्रशिक्षण के लिए किया है, परंतु केवल एक ही **पेलोड विशेषज्ञ** के रूप में जाएगा।
- This is under the **2025 agreement between CMSEO and SUPARCO**.
यह **2025** में चीन के मानवयुक्त अंतरिक्ष कार्यालय और पाकिस्तान के अंतरिक्ष अनुसंधान आयोग के समझौते के अंतर्गत है।
- China launched **ICUBE-Q** in **2024** aboard **Chang'e-6 orbiter**.
चीन ने **2024** में चांग'ए-6 यान के साथ **आईक्यूब-क्यू उपग्रह** का प्रक्षेपण किया।
- The **CubeSat** explored the **far side of the moon** and transmitted images of the **moon and sun**.
यह **लघु उपग्रह** चंद्रमा के **दूरस्थ भाग** का अध्ययन करता है और **चंद्रमा तथा सूर्य** की तस्वीरें पृथ्वी पर भेजता है।
- China has launched multiple **Pakistani satellites** enabling **reconnaissance and communication networks**.
चीन ने कई पाकिस्तानी उपग्रहों का प्रक्षेपण किया है जिससे **निगरानी और संचार नेटवर्क** विकसित हुआ है।
- In **April 2026**, Pakistan's **EO-3 satellite** was launched from **Taiyuan Satellite Launch Center**.
अप्रैल **2026** में पाकिस्तान का **ईओ-3 उपग्रह** तैयुआन प्रक्षेपण केंद्र से प्रक्षेपित किया गया।
- In **2025**, China launched **PRSS-2, PRSS-1, and PRSC-EO1** satellites.
2025 में चीन ने **पीआरएसएस-2, पीआरएसएस-1 तथा पीआरएससी-ईओ1** उपग्रहों का प्रक्षेपण किया।
- In **2024**, China launched **PakSat MM1**, while **PAKSAT-IR** was launched in **2011**.
2024 में **पकसैट एमएम1** का प्रक्षेपण हुआ, जबकि **पकसैट-आईआर** **2011** में प्रक्षेपित किया गया था।

Navigation cooperation (नेविगेशन सहयोग)



- The **BeiDou Navigation Satellite System (BDS)** is China's indigenous alternative to the **GPS**.
बीडौ नेविगेशन प्रणाली चीन की स्वदेशी प्रणाली है, जो वैश्विक स्थान निर्धारण प्रणाली का विकल्प है।
- It provides **high precision positioning up to 2 cm**, improving to **5 mm after processing**.
यह 2 सेंटीमीटर तक सटीक स्थिति जानकारी प्रदान करती है, जो प्रसंस्करण के बाद 5 मिलीमीटर तक सुधर सकती है।
- It is useful in **disaster relief, urban planning, traffic management, and environmental monitoring**.
यह आपदा प्रबंधन, शहरी नियोजन, यातायात नियंत्रण तथा पर्यावरण प्रबंधन में उपयोगी है।
- In **2014**, Pakistan became the **first foreign country to use BeiDou**.
2014 में पाकिस्तान बीडौ प्रणाली का उपयोग करने वाला पहला विदेशी देश बना।
- Pakistan's military is equipped to use **BeiDou under defence cooperation**.
पाकिस्तान की सेना रक्षा सहयोग के अंतर्गत बीडौ प्रणाली का उपयोग करने में सक्षम है।
- In **2020**, China announced establishing a **CORS network in Pakistan**.
2020 में चीन ने पाकिस्तान में निरंतर संचालन रडार नेटवर्क स्थापित करने की घोषणा की।
- These developments show that **China-Pakistan ties have expanded into space, giving Pakistan a strategic advantage**.



GS II: IR

Oil India reports hydrocarbon discovery in its block in Libya

State-owned Oil India has reported an oil and gas recovery from its exploration block in Libya. The oil and gas explorer holds 25% participating interest in the consortium, which also includes IndianOil, for the onshore exploration block Area 95/96 in Ghadmames Basin of south-western Libya. The block holds eight exploratory wells, with drilling of five wells completed and four reporting discoveries between 2012 and 2014.

- The oil and gas explorer holds **25% participating interest** in the consortium, which also includes **IndianOil**, for the onshore exploration block **Area 95/96 in Ghadmames Basin of south-western Libya**.
यह तेल और गैस अन्वेषक दक्षिण-पश्चिमी लीबिया के घादामेस बेसिन के एरिया 95/96 में ऑनशोर अन्वेषण ब्लॉक के लिए गठित कंसोर्टियम में **25% भागीदारी हिस्सेदारी** रखता है, जिसमें **इंडियनऑयल** भी शामिल है।
- The block holds **eight exploratory wells**, with drilling of **five wells completed and four reporting discoveries** between 2012 and 2014.
इस ब्लॉक में **आठ अन्वेषण कुएं** हैं, जिनमें से पांच कुओं की ड्रिलिंग पूरी हो चुकी है और 2012 से 2014 के बीच चार खोजों की रिपोर्ट की गई है।

28A. Symbiosis unveils Asia's rst UNESCO chair on Gender Inclusion & Skill Development / सिम्बायोसिस ने एशिया की पहली UNESCO चेयर (लैंगिक समावेशन एवं कौशल विकास) का उद्घाटन किया

ये विकास दर्शाते हैं कि चीन-पाकिस्तान संबंध अंतरिक्ष क्षेत्र तक विस्तारित हो चुके हैं, जिससे पाकिस्तान को सामरिक लाभ मिला है।

- The **dual-use nature of space technology** helps Pakistan in **navigation, communication, and disaster management**.
अंतरिक्ष प्रौद्योगिकी की द्वैध प्रकृति पाकिस्तान को नेविगेशन, संचार और आपदा प्रबंधन में सहायता प्रदान करती है।

28A. Oil India reports hydrocarbon discovery in its block in Libya

ऑयल इंडिया ने लीबिया में अपने ब्लॉक में हाइड्रोकार्बन खोज की सूचना दी

- State-owned **Oil India** has reported an **oil and gas recovery** from its **exploration block in Libya**.
सरकारी कंपनी **ऑयल इंडिया** ने **लीबिया में अपने अन्वेषण ब्लॉक से तेल और गैस की प्राप्ति** की सूचना दी है।



TELEGRAM CHANNEL: <https://t.me/patrioticIAS>

YOUTUBE CHANNEL: <https://www.youtube.com/@PatrioticIAS>

CONTACT: 9971932488



- **Symbiosis Skills and Professional University (SSPU), Pune**, announced the launch of a **UNESCO Chair on Gender Inclusion and Skill Development**, the first of its kind in Asia, at an International Conference on “Women Leading the Future of Work”, organised in collaboration with UNESCO.

सिम्बायोसिस स्किल्स एंड प्रोफेशनल यूनिवर्सिटी (SSPU), पुणे ने Gender Inclusion and Skill Development पर UNESCO चेयर की शुरुआत की घोषणा की, जो एशिया में अपनी तरह की पहली है, यह “Women Leading the Future of Work” अंतरराष्ट्रीय सम्मेलन में UNESCO के सहयोग से आयोजित किया गया।

- The Chair was formally inaugurated by **Jayant Chaudhary**, Minister of State (Independent Charge) for **Skill Development & Entrepreneurship** and Minister of State for Education, Government of India, recently.

इस चेयर का औपचारिक उद्घाटन जयंत चौधरी, केंद्रीय राज्य मंत्री (स्वतंत्र प्रभार) कौशल विकास एवं उद्यमिता और शिक्षा राज्य मंत्री, भारत सरकार द्वारा हाल ही में किया गया।

- The **UNESCO Chair initiative** is spearheaded by **Dr. Swati Mujumdar**, Pro-Chancellor, SSPU, which has developed a unique industry-integrated skilling model, enabling large-scale training of underprivileged girls in different domains with strong employment outcomes.

यह UNESCO चेयर पहल डॉ. स्वाति मुजुमदार, प्रो-चांसलर, SSPU के नेतृत्व में संचालित है, जिसने एक अनूठा उद्योग-समेकित कौशल मॉडल विकसित किया है, जिससे वंचित लड़कियों को बड़े पैमाने पर विभिन्न क्षेत्रों में प्रशिक्षण देकर रोजगार के अवसर प्रदान किए जा रहे हैं।

- Under the aegis of this Chair, **10,000 girls** have been trained on future skills in sunrise sectors such as **robotics, automation and semi-conductor technology, advanced manufacturing and defence technology**.

इस चेयर के अंतर्गत 10,000 लड़कियों को भविष्य के कौशल जैसे रोबोटिक्स, ऑटोमेशन, सेमीकंडक्टर तकनीक, उन्नत विनिर्माण और रक्षा तकनीक में प्रशिक्षित किया गया है।

GS Paper III: Economy		28 April 2026
TOPICS COVERED		
28A	India, New Zealand sign 'historic' trade deal भारत, न्यूज़ीलैंड ने 'ऐतिहासिक' व्यापार समझौते पर हस्ताक्षर किए	
28A	Launch of Google AI data hub today आज गूगल एआई डेटा हब का शुभारंभ	
28A	Examining the roadblocks to Bihar's development trajectory बिहार के विकास पथ में बाधाओं का विश्लेषण	
28A	Fertiliser security strong, stable, well-managed: Centre उर्वरक सुरक्षा मजबूत, स्थिर और सुव्यवस्थित: केंद्र	
28A	China blocks Meta acquisition of AI start-up Manus amid U.S. tech rivalry अमेरिका-चीन तकनीकी प्रतिद्वंद्विता के बीच चीन ने Meta द्वारा AI स्टार्टअप Manus के अधिग्रहण को रोक	



India, New Zealand sign 'historic' trade deal

Deal will be implemented following ratification by the New Zealand Parliament later this year

Trade pact is a milestone, showing 'convergence of values, trust and shared ambition', says PM

This FTA is one of the fastest negotiated by India; talks began in March and concluded in Dec. 2025

SS III: Economy
Topic: International Trade Agreement
NEW DELHI

India and New Zealand on Monday signed a Free Trade Agreement (FTA) that Prime Ministers of both the countries hailed as a "historic" step towards deepening trade, investment and people-to-people ties.

The FTA, signed by Commerce Minister Piyush Goyal and his New Zealand counterpart Todd McClay in New Delhi, will see New Zealand removing tariffs on all goods imported from India, while India will remove or reduce tariffs on 95% of current imports from New Zealand.

"Today marks a historic milestone in India's journey towards deeper global engagement and shared prosperity," a statement read out by Mr. Goyal quoted Prime Minister Narendra Modi, who is currently in West Bengal, as saying.

"The signing of the India-New Zealand Free Trade Agreement reflects our strengthening economic partnership and a convergence of values, trust and shared ambition between two vibrant democracies."

The FTA, discussions for which were announced in March 2025 and concluded in December 2025, is one of the fastest India has negotiated.

The deal still needs to be ratified by New Zealand's Parliament, which Mr. McClay said would happen soon while adding that it would come into force within this year.

New Zealand Prime Minister Christopher Luxon, in a statement read out by Mr. McClay, said that during a time of global uncertainty, this FTA is a clear commitment by both sides to a stable, predictable and rules-based trade.

"And the India-New Zealand story is about more

Deal dynamics

Immediate elimination

- Wood | Wool
- Leather-raw hides

Phased elimination

- Petroleum oil
- Vegetable oils
- Select electrical machinery

Tariff reductions

- Wine and pharma
- Polymers, aluminum, iron and steel articles

The graphic lists select products on which India will be reducing or eliminating tariffs, as well as items excluded from the deal. New Zealand has removed tariffs on all items

Products excluded by India

- Dairy products (milk, cream, whey, yoghurt, cheese etc.)
- Animal products (other than sheep meat)
- Agricultural products (onions, chana, peas, corn, almonds etc.)
- Sugar | Artificial honey
- Copper and Articles thereof (Cathodes, cartridges, rods)
- Aluminium and articles thereof (Ingots, billets etc.)



Sealing the deal: Union Minister of Commerce and Industry, Piyush Goyal, with New Zealand's Minister for Trade and Investment, Todd McClay, during the signing ceremony of the FTA in New Delhi on Monday. SUSHIL KUMAR VERMA

than trade," Mr. Luxon said. "New Zealand and India are building a relationship that is bigger, deeper and more exciting every year – across trade, investment, defence, sport, and innovation."

Gains beyond trade
India's exports to New Zealand grew 32.1% in 2024-25 to \$711.1 million, the latest

full financial year for which data is available. Imports from New Zealand grew 75.2% to \$587.1 million over the same period.

"This FTA is far more than an agreement on tariffs and rules of origin," Mr. Goyal said. "It is a comprehensive framework spanning market access, agricultural productivity, investment, and mobility,

designed to benefit manufacturing, farmers, artisans, MSMEs, women entrepreneurs, students, and skilled professionals across both nations."

Apart from the tariff concessions, the FTA also includes several provisions relating to mobility of working professionals and students from India. Mr. McClay exuded con-

confidence that the deal would benefit New Zealand exporters substantially.

The FTA includes a provision wherein New Zealand has committed to facilitate \$20 billion in investments into India over the next 15 years.

"Our Make in India flagship initiative offers synergy to New Zealand's investment commitment of \$20 billion in India and delivers a vibrant partnership that goes beyond trade," Mr. Modi said in his statement.

Industry hails deal

Industry bodies and exporters welcomed the deal. "The FTA will open new avenues for Indian exporters by enhancing market access to New Zealand across key sectors such as agriculture, textiles, pharmaceuticals, engineering goods, and services such as IT & ITeS, business services, engineering, education, construction and

health services," President of the Federation of Indian Export Organisations S.C. Rathn said.

The Confederation of India Industry, in a statement, said that New Zealand's commitment to facilitate \$20 billion in investment is expected to spur the development of industrial infrastructure, manufacturing ecosystems, and innovation clusters across India.

India has managed to negotiate the exclusion of several key items from the deal, including all dairy products such as milk, cream, whey, yoghurt, cheese, etc., animal products other than sheep meat, vegetable products such as onions, chana, peas, corn, almonds, etc., sugar, artificial honey, animal, vegetable or microbial fats and oils, arms and ammunition, gems and jewellery, and copper and aluminium and products.

28A. India, New Zealand sign 'historic' trade deal

भारत, न्यूज़ीलैंड ने 'ऐतिहासिक' व्यापार समझौते पर हस्ताक्षर किए

- The FTA includes a provision wherein New Zealand has committed to facilitate \$20 billion in investments into India over the next 15 years.

एफटीए में एक प्रावधान शामिल है जिसके तहत न्यूज़ीलैंड ने अगले 15 वर्षों में भारत में \$20 बिलियन के निवेश को सुगम बनाने का वादा किया है।

- The Confederation of India Industry, in a statement, said that New Zealand's commitment to facilitate \$20 billion in investment is expected to spur the development of industrial infrastructure, manufacturing ecosystems, and innovation clusters across India.

कन्फेडरेशन ऑफ इंडिया इंडस्ट्री ने अपने बयान में कहा कि न्यूज़ीलैंड का \$20 बिलियन निवेश का वादा भारत में औद्योगिक बुनियादी ढांचे, विनिर्माण पारिस्थितिकी तंत्र और नवाचार समूहों के विकास को बढ़ावा देगा।

- India has managed to negotiate the exclusion of several key items from the deal, including all dairy products such as milk, cream, whey, yoghurt, cheese, etc., animal products other than sheep meat, vegetable products such as onions, chana, peas, corn, almonds, etc., sugar, artificial honey, animal, vegetable or microbial fats and oils, arms and ammunition, gems and jewellery, and copper and aluminium and products.

भारत ने इस समझौते से कई महत्वपूर्ण वस्तुओं को बाहर रखने में सफलता पाई है, जिनमें सभी डेयरी उत्पाद जैसे दूध, क्रीम, व्हे, दही, पनीर आदि, भेड़ के मांस के अलावा अन्य पशु उत्पाद, सब्जी उत्पाद जैसे प्याज, चना, मटर, मक्का, बादाम आदि, चीनी, कृत्रिम शहद, पशु, वनस्पति या सूक्ष्मजीव वसा और तेल, हथियार और गोला-बारूद, रत्न और आभूषण, तथा तांबा और एल्युमीनियम और उनके उत्पाद शामिल हैं।



Launch of Google AI data hub today

GS III: Economy

V. Kamalakara Rao
VISAKHAPATNAM

Andhra Pradesh is set for a technological leap as Chief Minister N. Chandrababu Naidu will lay the foundation stone for Google's massive \$15 billion (₹1.35 lakh crore) AI data centre hub at Tarluvada, near Visakhapatnam, on April 28.

The event will be attended by Google's senior executives, including Google Cloud CEO Thomas Kurian. The groundbreaking ceremony marks the commencement of one of India's largest single foreign direct investment projects.

The project, managed by Google's subsidiary Raiden Infotech in partnership with Adani Infra, will span 601.4 acres across three strategic locations—Rambilli in Anakapalli district, and Adavivaram and Tarluvada in Visakhapatnam district.

Tech leap

Google's AI data centre hub project, managed by Raiden Infotech in partnership with Adani Infra, will span 601.4 acres in three locations—Rambilli in Anakapalli district, and Adavivaram and Tarluvada in Visakhapatnam district

Total investment: ₹1.35 lakh crore	Land allocation: 266.6 acres at Tarluvada village	174.8 acres in Rambilli mandal	160 acres in Adavivaram area
Initial power capacity: 1 gigawatt	Potential future scalability: 5 gigawatt	Targeted year for completion of Phase I: 2028	Direct technical jobs: 2,000



Arrangements in full swing for the stone-laying ceremony of Google Data Centre at Tarluvada, a suburban area of Visakhapatnam. V. RAJU

With a massive planned capacity of 1 gigawatt, the hub is designed to anchor Google's

first major AI-driven data centre campus in India. The infrastructure will feature high-capacity subma-

rine cable landing stations and dedicated fiber networks, providing low-latency connectivity to global markets.

Job generation

Beyond the core facility, which is slated for completion by July 2028, the project is expected to generate thousands of high-value jobs in data science, cybersecurity, and AI operations. It is anticipated to trigger a ripple effect in allied sectors, including renewable energy systems and advanced manufacturing, reinforcing the State's vision of building a 6.5 GW digital ecosystem. As the city prepares for Tuesday's launch, the mood remains optimistic, with local leadership hailing the project as a defining moment that will secure Visakhapatnam's place on the global technology map.

28A. Launch of Google AI data hub today

आज गूगल एआई डेटा हब का शुभारंभ

• **Andhra Pradesh** is set for a technological leap as Chief Minister N. Chandrababu Naidu will lay the foundation stone for Google's massive \$15 billion (₹1.35 lakh crore) AI data centre hub at Tarluvada, near Visakhapatnam, on April 28.

आंध्र प्रदेश तकनीकी छलांग के लिए तैयार है क्योंकि मुख्यमंत्री एन. चंद्रबाबू नायडू

28 अप्रैल को विशाखापट्टनम के पास तार्लुवाडा में गूगल के 15 अरब डॉलर (₹1.35 लाख करोड़) के विशाल एआई डेटा सेंटर हब की आधारशिला रखेंगे।

- The project, managed by **Google's subsidiary Raiden Infotech** in partnership with **Adani Infra**, will span **601.4 acres** across three strategic locations—**Rambilli in Anakapalli district, and Adavivaram and Tarluvada in Visakhapatnam district.**

यह परियोजना, गूगल की सहायक कंपनी रेडेन इन्फोटेक द्वारा अडानी इन्फ्रा के साथ साझेदारी में प्रबंधित, 601.4 एकड़ में फैली होगी, जो तीन रणनीतिक स्थानों—अनाकापल्ली जिले के रामबिल्ली और विशाखापट्टनम जिले के आदाविवरम और तार्लुवाडा—में स्थित है।

- With a massive planned capacity of **1 gigawatt**, the hub is designed to anchor **Google's first major AI-driven data centre campus in India.**

1 गीगावाट की विशाल नियोजित क्षमता के साथ, यह हब भारत में गूगल के पहले बड़े एआई-आधारित डेटा सेंटर परिसर का आधार बनेगा।

- The infrastructure will feature high-capacity **submarine cable landing stations** and dedicated **fiber networks**, providing **low-latency connectivity** to global markets.

इस बुनियादी ढांचे में उच्च क्षमता वाले सबमरीन केबल लैंडिंग स्टेशन और समर्पित फाइबर नेटवर्क होंगे, जो वैश्विक बाजारों तक कम विलंबता कनेक्टिविटी प्रदान करेंगे।

Job generation

रोजगार सृजन

- Beyond the core facility, which is slated for completion by **July 2028**, the project is expected to generate thousands of high-value jobs in **data science, cybersecurity, and AI operations.**

मुख्य सुविधा के अलावा, जो **जुलाई 2028** तक पूरी होने की उम्मीद है, यह परियोजना डेटा साइंस, साइबर सुरक्षा, और एआई संचालन में हजारों उच्च मूल्य के रोजगार सृजित करेगी।



- It is anticipated to trigger a ripple effect in allied sectors, including **renewable energy systems** and **advanced manufacturing**, reinforcing the State's vision of building a **6.5 GW digital ecosystem**.
यह उम्मीद की जाती है कि यह नवीकरणीय ऊर्जा प्रणालियों और उन्नत विनिर्माण सहित संबंधित क्षेत्रों में प्रभाव डालेगा, जिससे राज्य के 6.5 गीगावाट डिजिटल इकोसिस्टम बनाने के दृष्टिकोण को मजबूती मिलेगी।
- पर स्थापित करेगा।

Examining the roadblocks to Bihar's development trajectory

A look at what has hindered Bihar's socio-economic progress despite a politics centred on social justice. The gap between political empowerment and ground-level stagnation calls for changes aimed at bringing about overall development in the region

GS III: Economy
Rebecca Rose Varghese

MOB

What drives progress and development in a region? Does it stem from the equal rights granted by the state to citizens? Does it arise from equal opportunities fostering economic growth? Is it rooted in ownership and a sense of security within the region? Or is it an amalgamation of all these – social justice, ownership, equality, opportunities, and infrastructure – that leads to progress? Can true development materialise when symbolic changes occur without the backing of material changes?

These are some of the critical questions examined by Sandipan Baksi and Mrityunjay Pandey in their article "Limitations of the Politics of Social Justice in Transforming Rural Bihar". Their analysis of Bihar reveals a stark contradiction. While the State is well known for its progressive political stance that covers social justice, dignity, and equality; in terms of socio-economic indicators, it remains ranked the lowest in the country. Bihar's per capita income at current prices for 2024-25 was around ₹70,000, while for India it was approximately ₹2.05 lakh. In terms of the Human Development Index (HDI) as well, Bihar ranked the lowest, at 0.650 compared to India's 0.685 (2023).

Such a paradox requires an in-depth study to understand whether symbolic gains in dignity suffice in the absence of material redistribution.

Drawing on quantitative data from a village survey conducted in 2012 and a resurvey in 2018 across two villages in Bihar – Katkuian in West Champaran district and Nayanagar in Samastipur district – the authors of the paper attempt to demonstrate how limited the politics of social justice remains without effective implementation.

The paper underscores that in a country like India, as long as social justice movements and their leadership remain linked to the asset-owning elite and upper classes and castes who seek to preserve the agrarian class-caste status quo,

socio-economic changes that help improve the lives of the people in the region are not possible.

Socio-economic conditions

Bihar remains mostly rural, with the bulk of the population in rural regions. Agriculture engages the majority of the rural workforce and directly shapes lives, livelihoods, and social status. The lives of the majority are characterised by extreme poverty, lack of employment, meagre agricultural wages, and absent healthcare facilities. The situation is worse for women and backward castes, Scheduled Castes, and Scheduled Tribes.

A striking feature of Bihar's economy is extreme inequality in land ownership, a primary means of production, with many households lacking even house-site ownership, leading to insecurity. Two-thirds of Scheduled Caste and Scheduled Tribe households remain landless. Despite all this, Bihar is known for a strong sense of political awareness rooted in identity politics, the leaders demanding representation, often fueling vibrant electoral participation in the State.

The political evolution

Bihar's political evolution centred on the slogan "roti aur izzat" (bread and dignity), driven by pre-independence movements that blended peasant struggles through the Bihar Pradesh Kisan Sabha, socialist reforms for land redistribution and caste equality, and backwards-caste assertions by Yadavs, Kurmis, and Koeris against upper-caste dominance. The abolition of Zamindari tenures post-independence empowered these groups, resulting in the Backward Classes Federation's push for reservations.

With this, leaders such as Ram Manohar Lohia and Jayaprakash Narayan started focusing on ensuring that backward castes and classes were represented in the political sphere. Through a persistent fight for reservation and inclusion, a strong political identity emerged among these communities. From the 1970s through the 1990s, under

the leadership of figures like Lalu Prasad Yadav, a "silent revolution" took place that broke upper-caste dominance in politics, effectively paving the way for backward communities to secure their place through the implementation of reservations.

The dichotomy

While this evolution delivered political representation for backward castes, it left underlying agrarian structures intact, perpetuating inequality from unequal land distribution. Zamindari abolition helped middle peasantry like Yadavs, Kurmis, and Koeris gain some land, but the Backward Classes Federation prioritised reservations over deeper reforms, ignoring persistent rural land disparities.

Even in power, wealthy landowning backward caste elites dominated parties, maintaining economic hierarchies. By 2020, candidates' average assets topped ₹4-6 crore, far exceeding the rural household average.

These shortcomings explain why Bihar ranks lowest across development indices, enduring deplorable health, education, poverty, and unemployment.

According to the Periodic Labour Force Survey (PLFS) 2023-24 data, the national literacy rate was 80.9%, while Bihar trailed at 74.3% with a significant gender gap. The situation in Katkuian and Nayanagar illustrates how this lag persists across Rural Bihar. In Katkuian, while literacy for those aged seven and above rose from 60% in 2012 to 79% in 2018, and female literacy for the same age group improved from 46.7% to 67%, it remained lower than the country's average. In Nayanagar, despite higher overall literacy than in Katkuian, deep inequalities still persist. For instance, the 2012 survey found that among Dalit households, who made up 34% of the village population, only two individuals had graduate degrees. On the other hand, over 30% of males from "Others" caste categories were graduates.

Asset ownership data further highlights these inequalities. In Katkuian, 50% of

households were landless in 2012, of which 14% were Yadavs, and the share of asset ownership only worsened by 2018. Similarly, Nayanagar exhibited sharp resource disparities, with Bhumihar households, who made up only 22% of the village population, owning over 95% of the agricultural land.

Housing conditions, including access to electricity, latrines, and LPG, also remained poor across both villages, even though they showed some improvement compared to 2012. This reveals a stark dichotomy; progressive political ideologies expanded representation, but yielded no meaningful social or economic development, as struggles for land redistribution and labour rights stayed marginalised from mainstream politics.

Conclusion

Such persistent gaps between political empowerment and ground-level stagnation demand a re-evaluation of the scope of social justice.

The State of Kerala, for instance, is an example of the need to bring structural changes, alongside progressive ideologies. The implementation of land policies through equitable distribution in the State has led to greater ownership and a stronger sense of security among the population. This has had a significant impact in promoting better education systems and literacy, improving infrastructure, and enhancing living standards. This contrast highlights the limits of relying solely on symbolic or policy-driven measures of inclusion. Reservation alone, therefore, achieves little in the absence of material transformation.

In agrarian Bihar, where land and assets dominate, reservations achieve little on their own. Thus, this paper becomes highly relevant in underscoring the need to dismantle persisting agrarian structures that maintain inequality, in order to bring about overall development in the region, lest social justice remain merely aspirational.

(Rebecca Rose Varghese is a freelance journalist.)

28A. Examining the roadblocks to Bihar's development trajectory

बिहार के विकास पथ में बाधाओं का विश्लेषण

- A look at what has hindered Bihar's **socio-economic progress** despite a politics centred on **social justice**
सामाजिक न्याय केंद्रित राजनीति के बावजूद बिहार की सामाजिक-आर्थिक प्रगति को किसने बाधित किया है, इसका विश्लेषण



- The gap between **political empowerment** and **ground-level stagnation** calls for changes aimed at bringing about **overall development** in the region
राजनीतिक सशक्तिकरण और जमीनी स्तर पर ठहराव के बीच का अंतर क्षेत्र में समग्र विकास लाने हेतु परिवर्तन की मांग करता है

Drivers of Progress and Social Justice in Bihar (प्रगति और सामाजिक न्याय के प्रेरक कारक)

- What drives **progress and development** in a region?
किसी क्षेत्र में प्रगति और विकास को क्या प्रेरित करता है?
- Does it stem from **equal rights granted by the state** to citizens?
क्या यह राज्य द्वारा नागरिकों को प्रदान किए गए समान अधिकारों से उत्पन्न होता है?
- Does it arise from **equal opportunities fostering economic growth**?
क्या यह समान अवसरों से उत्पन्न आर्थिक विकास से संबंधित है?
- Is it rooted in **ownership and a sense of security** within the region?
क्या यह स्वामित्व और सुरक्षा की भावना पर आधारित है?
- Or is it an **amalgamation of social justice, ownership, equality, opportunities, and infrastructure** that leads to progress?
या यह सामाजिक न्याय, स्वामित्व, समानता, अवसर और आधारभूत संरचना के समन्वय से उत्पन्न होता है?
- Can true development materialise when **symbolic changes occur without material changes**?
क्या प्रतीकात्मक परिवर्तन बिना वास्तविक परिवर्तन के सच्चे विकास को संभव बना सकते हैं?
- While Bihar is known for **progressive political stance on social justice, dignity, and equality**, it ranks lowest in **socio-economic indicators**.
यद्यपि बिहार सामाजिक न्याय, गरिमा और समानता के प्रति प्रगतिशील राजनीतिक दृष्टिकोण के लिए जाना जाता है, फिर भी यह सामाजिक-आर्थिक सूचकांकों में सबसे नीचे है।
- Bihar's **per capita income** in 2024–25 was around **₹70,000**, compared to India's **₹2.05 lakh**.
बिहार की प्रति व्यक्ति आय वर्ष 2024–25 में लगभग ₹70,000 थी, जबकि भारत की लगभग ₹2.05 लाख थी।
- In the **Human Development Index (HDI)**, Bihar ranked lowest at **0.650**, compared to India's **0.685**.
मानव विकास सूचकांक में बिहार का स्थान 0.650 के साथ सबसे नीचे था, जबकि भारत का 0.685 था।
- The paper argues that when **social justice movements are linked to elite and upper castes**, real socio-economic change is not possible.
अध्ययन यह दर्शाता है कि जब सामाजिक न्याय आंदोलन उच्च वर्गों और उच्च जातियों से जुड़े रहते हैं, तब वास्तविक सामाजिक-आर्थिक परिवर्तन संभव नहीं होता।

Socio-economic conditions (सामाजिक-आर्थिक स्थिति)

- The situation is worse for **women, backward castes, Scheduled Castes, and Scheduled Tribes**.
स्थिति महिलाओं, पिछड़ी जातियों, अनुसूचित जातियों और अनुसूचित जनजातियों के लिए और भी खराब है।
- There is **extreme inequality in land ownership**, with many lacking even **house-site ownership**.
भूमि स्वामित्व में अत्यधिक असमानता है और कई परिवारों के पास आवासीय भूमि भी नहीं है।
- Nearly **two-thirds of SC and ST households are landless**.
लगभग दो-तिहाई अनुसूचित जाति और जनजाति परिवार भूमिहीन हैं।
- Despite this, Bihar shows **strong political awareness and electoral participation**.
इसके बावजूद बिहार में राजनीतिक जागरूकता और चुनावी भागीदारी मजबूत है।



The political evolution (राजनीतिक विकास)

- Bihar's politics evolved around the slogan “**roti aur izzat**”.
बिहार की राजनीति रोटी और इज्जत के नारे के इर्द-गिर्द विकसित हुई।
- Pre-independence movements included **peasant struggles, socialist reforms, and backward caste assertions**.
स्वतंत्रता पूर्व आंदोलनों में किसान संघर्ष, समाजवादी सुधार और पिछड़ी जातियों का उभार शामिल था।
- The abolition of **Zamindari system** empowered backward groups.
जमींदारी प्रथा के उन्मूलन ने पिछड़े वर्गों को सशक्त बनाया।
- This led to demands for **reservations and representation**.
इससे आरक्षण और प्रतिनिधित्व की मांग बढ़ी।
- Leaders like **Ram Manohar Lohia and Jayaprakash Narayan** promoted **political inclusion of backward classes**.
राम मनोहर लोहिया और जयप्रकाश नारायण जैसे नेताओं ने पिछड़े वर्गों की राजनीतिक भागीदारी को बढ़ावा दिया।
- From the **1970s to 1990s**, leaders like **Lalu Prasad Yadav** led a **silent revolution** breaking upper-caste dominance.
1970 से 1990 के दशक में लालू प्रसाद यादव जैसे नेताओं ने एक **मूक क्रांति** के माध्यम से उच्च जातियों के प्रभुत्व को समाप्त किया।
- This enabled backward communities to secure their place through **reservation policies**.
इससे पिछड़े वर्गों को आरक्षण नीतियों के माध्यम से राजनीतिक और सामाजिक स्थान प्राप्त हुआ।

The dichotomy (द्वैत)

- While this evolution delivered **political representation** for backward castes, it left **agrarian structures intact**, perpetuating inequality from **unequal land distribution**.
यद्यपि इस विकास ने पिछड़ी जातियों को राजनीतिक प्रतिनिधित्व प्रदान किया, लेकिन इसने **कृषि संरचनाओं को यथावत बनाए रखा**, जिससे भूमि के असमान वितरण के कारण असमानता बनी रही।
- **Zamindari abolition** helped **middle peasantry** like Yadavs, Kurmis, and Koeris gain some land, but the **Backward Classes Federation** prioritised **reservations over deeper reforms, ignoring rural land disparities**.
जमींदारी उन्मूलन ने यादव, कुर्मी और कोइरी जैसे **मध्यम कृषक वर्ग** को कुछ भूमि प्राप्त करने में सहायता की, परंतु **पिछड़ा वर्ग महासंघ** ने **गहन सुधारों की बजाय आरक्षण को प्राथमिकता दी**, जिससे ग्रामीण भूमि असमानताएँ बनी रहीं।
- Even in power, **wealthy landowning elites** from backward castes dominated parties, maintaining **economic hierarchies**.
सत्ता में आने के बाद भी **भूमिधारी समृद्ध अभिजात वर्ग** ने दलों पर प्रभुत्व बनाए रखा और **आर्थिक असमानता** को बनाए रखा।
- By 2020, candidates' **average assets** topped ₹4-6 crore, far exceeding the **rural household average**.
वर्ष 2020 तक उम्मीदवारों की **औसत संपत्ति** ₹4-6 करोड़ तक पहुँच गई, जो **ग्रामीण परिवारों की औसत संपत्ति** से कहीं अधिक थी।
- According to **PLFS 2023-24**, the national **literacy rate** was 80.9%, while Bihar was at 74.3% with a significant **gender gap**.
पीरियॉडिक लेबर फोर्स सर्वेक्षण 2023-24 के अनुसार राष्ट्रीय साक्षरता दर 80.9% थी, जबकि बिहार 74.3% पर था और इसमें महत्वपूर्ण लैंगिक अंतर था।
- In Nayanagar, **Bhumihar households**, though only 22% of the population, owned over 95% of **agricultural land**.
नयनागर में **भूमिहार परिवार**, जो केवल 22% थे, के पास 95% से अधिक **कृषि भूमि** थी।



- The State of Kerala shows the importance of **structural reforms alongside ideology**.
केरल राज्य यह दर्शाता है कि विचारधारा के साथ संरचनात्मक सुधार आवश्यक हैं।
- Implementation of **land reforms and equitable distribution** improved **ownership and security**.
भूमि सुधार और समान वितरण ने स्वामित्व और सुरक्षा की भावना को बढ़ाया।
- This led to better **education, literacy, infrastructure, and living standards**.
इससे शिक्षा, साक्षरता, आधारभूत संरचना और जीवन स्तर में सुधार हुआ।
- This contrast highlights limits of **symbolic or policy-driven inclusion**.
यह अंतर प्रतीकात्मक या नीतिगत समावेशन की सीमाओं को उजागर करता है।
- **Reservation alone** achieves little without **material transformation**.
केवल आरक्षण बिना वास्तविक परिवर्तन के सीमित प्रभावी होता है।
- In agrarian Bihar, where **land and assets dominate**, reservation alone is insufficient.
कृषि प्रधान बिहार में, जहाँ भूमि और संपत्ति प्रमुख हैं, केवल आरक्षण पर्याप्त नहीं है।
- The study highlights the need to dismantle **agrarian inequalities** for overall development.
यह अध्ययन समग्र विकास के लिए कृषि असमानताओं को समाप्त करने की आवश्यकता को रेखांकित करता है।
- Otherwise, **social justice will remain aspirational**.
अन्यथा, सामाजिक न्याय केवल एक आकांक्षा बनकर रह जाएगा।

28A. Fertiliser security strong, stable, well-managed: Centre

उर्वरक सुरक्षा मजबूत, स्थिर और सुव्यवस्थित: केंद्र

- For Kharif 2026, the **Ministry of Fertilisers** has assessed a requirement of **390.54 LMT**, the current available stock of **190 LMT** is **49% of the requirement**, says **Additional Secretary**.

खरीफ 2026 के लिए उर्वरक मंत्रालय ने 390.54 LMT की आवश्यकता का आकलन किया है, वर्तमान उपलब्ध स्टॉक 190 LMT है जो आवश्यकता का 49% है, अतिरिक्त सचिव ने कहा।

- Amid criticism by the **Opposition** that the **Centre** had failed to ensure availability of cooking gas and fertilisers, the **Union**

Fertiliser security strong, stable, well-managed: Centre

For Kharif 2026, the Ministry of Fertilisers has assessed requirement of 390.54 LMT, the current available stock of 190 LMT is 49% of the requirement, says Additional Secretary

GS III: Economy
The Hindu Bureau
NEW DELHI

Amid criticism by the Opposition that the Centre had failed to ensure availability of cooking gas and fertilisers, the Union Fertilisers Ministry said here on Monday that the country's fertiliser security remained "strong, stable, and well-managed," with availability consistently exceeding requirement across all major fertilisers.

'Prices unchanged'

Addressing an inter-ministerial briefing on the impact of the recent developments in West Asia on the availability and production of fertilisers, Aparna S. Sharma, Additional Secretary, Department of Fertilisers, said retail prices of Urea, Di Ammonium Phosphate (DAP) and Triple Superphosphate (TSP) would remain unchanged at



Clearing the air: Ms. Sharma said a total of 190.21 LMT of fertilisers was available, compared with 169.24 LMT last year. R. VENGADESH

₹266.5, ₹1,350 and ₹1,300 per bag respectively.

The overall stock position of fertilisers in the country is improved, with urea stock of 71.58 lakh metric tonnes (LMT) as of now compared with 70.67 LMT on the same day last year.

DAP stock remains at 22.35 LMT, compared with 15.07 LMT last year. 57.56 LMT of Nitrogen (N), Phosphorus (P), and Potassium (K) fertilisers are available.

Last year, the stock was

44.49 LMT. Stock of Single Super Phosphate (SSP) is 26.26 LMT. This was 26.14 LMT last year. 12.46 LMT of Muriate of potash (MOP) is available, compared with 12.87 LMT last year, on the same date.

Ms. Sharma said a total of 190.21 LMT of fertilisers was available, compared with 169.24 LMT last year.

For Kharif 2026, the Ministry has assessed fertiliser requirement of 390.54 LMT and the current avail-

able stock of 190 LMT is 49% of the requirement.

The Ministry said this was significantly higher than the usual level of about 33%. "This reflects improved planning, advance stocking, and efficient logistics management by the government," the Additional Secretary said.

She added that issues relating to natural gas availability for domestic urea production had also been addressed, with steady supply being maintained to fertiliser plants and additional LNG/RLNG being arranged as required.

"At present -97% LNG/RLNG is available with fertiliser plants. Most of the urea plants are running at optimum level," she said.

India secured 13.07 LMT Urea in the global urea tender in February and now the government has diversified import sources and secured 25 LMT of urea through global tenders.

Fertilisers Ministry said here on Monday that the country's fertiliser security remained "strong, stable, and well-managed," with availability consistently exceeding requirement across all major fertilisers.

विपक्ष द्वारा यह आलोचना किए जाने के बीच कि केंद्र रसोई गैस और उर्वरकों की उपलब्धता सुनिश्चित करने



में विफल रहा है, केंद्रीय उर्वरक मंत्रालय ने सोमवार को कहा कि देश की उर्वरक सुरक्षा “मजबूत, स्थिर और सुव्यवस्थित” बनी हुई है, और सभी प्रमुख उर्वरकों में उपलब्धता लगातार आवश्यकता से अधिक है।

‘Prices unchanged’ ‘कीमते अपरिवर्तित’

- Addressing an inter-ministerial briefing on the impact of the recent developments in **West Asia** on the availability and production of fertilisers, **Aparna S. Sharma**, Additional Secretary, Department of Fertilisers, said retail prices of **Urea, Di Ammonium Phosphate (DAP) and Triple Superphosphate (TSP)** would remain unchanged at ₹266.5, ₹1,350 and ₹1,300 per bag respectively.

पश्चिम एशिया में हाल के घटनाक्रमों के उर्वरकों की उपलब्धता और उत्पादन पर प्रभाव को लेकर आयोजित अंतर-मंत्रालयी ब्रीफिंग को संबोधित करते हुए, **अपर्णा एस. शर्मा**, अतिरिक्त सचिव, उर्वरक विभाग ने कहा कि यूरिया, डाय अमोनियम फॉस्फेट (DAP) और ट्रिपल सुपरफॉस्फेट (TSP) की खुदरा कीमते क्रमशः ₹266.5, ₹1,350 और ₹1,300 प्रति बैग पर अपरिवर्तित रहेंगी।

- Stock of **Single Super Phosphate (SSP)** is 26.26 LMT.
सिंगल सुपर फॉस्फेट (SSP) का स्टॉक 26.26 LMT है।
- 12.46 LMT of **Muriate of Potash (MOP)** is available, compared with 12.87 LMT last year, on the same date.
उसी तारीख पर पिछले वर्ष 12.87 LMT की तुलना में म्यूरेट ऑफ पोटाश (MOP) का 12.46 LMT उपलब्ध है।

China blocks Meta acquisition of AI start-up Manus amid U.S. tech rivalry

As **GS III: Economy**
HONG KONG

China on Monday blocked U.S. tech giant Meta’s acquisition of the artificial intelligence startup Manus, in an unexpected move to reverse a deal that apparently aroused Beijing’s concerns about the transfer of advanced technology.

In a one-line statement, China’s National Development and Reform Commission, the country’s top planning agency, said it was prohibiting a foreign acquisition of Manus and had required all the parties to withdraw from the deal.

The decision by the commission’s Office of the Working Mechanism for Security Review of Foreign



Artificial apprehensions: The decision reflects Beijing’s concerns about transfer of advanced technology. REUTERS

Investment came after Chinese authorities said they were looking into the deal earlier this year.

The commission did not elaborate on the reasons for the ban.

The announcement came less than a month be-

fore U.S. President Donald Trump’s planned visit to Beijing to meet Chinese leader Xi Jinping in May, in a sign that China’s communist leaders are tightening scrutiny of the AI industry amid intensifying geopolitical rivalry with the United

States over the technology. Meta announced in December that it was acquiring Manus, which has Chinese roots but is based in Singapore, in a rare case of a major U.S. tech group buying an AI company with strong links to China. Its deal with Manus, whose “general-purpose” AI agent can perform multistep complex work autonomously, was expected to help expand AI offerings across Meta’s platforms.

Meta said on Monday that the Manus transaction “complied fully with applicable law.”

“We anticipate an appropriate resolution to the inquiry,” the California-based company said in a statement.



28A. China blocks Meta acquisition of AI start-up Manus amid U.S. tech rivalry अमेरिका-चीन तकनीकी प्रतिद्वंद्विता के बीच चीन ने Meta द्वारा AI स्टार्टअप Manus के अधिग्रहण को रोका

- China** on Monday blocked **U.S. tech giant Meta's acquisition** of the artificial intelligence startup **Manus**, in an unexpected move to reverse a deal that apparently aroused **Beijing's concerns** about the transfer of advanced technology.

चीन ने सोमवार को अमेरिकी टेक दिग्गज Meta के अधिग्रहण को रोक दिया, जो कि कृत्रिम बुद्धिमत्ता स्टार्टअप Manus से जुड़ा था, यह एक अप्रत्याशित कदम था जिसने उस सौदे को पलट दिया जिससे बीजिंग की उन्नत तकनीक हस्तांतरण को लेकर चिंताएँ बढ़ गई थीं।
- In a one-line statement, **China's National Development and Reform Commission**, the country's top planning agency, said it was prohibiting a **foreign acquisition of Manus** and had required all the parties to withdraw from the deal.

एक पंक्ति के बयान में, चीन के राष्ट्रीय विकास और सुधार आयोग ने कहा कि वह Manus के विदेशी अधिग्रहण पर प्रतिबंध लगा रहा है और सभी पक्षों को इस सौदे से हटने का निर्देश दिया गया है।
- The **decision by the commission's Office of the Working Mechanism for Security Review of Foreign Investment** came after **Chinese authorities** said they were looking into the deal earlier this year.

यह निर्णय आयोग के विदेशी निवेश की सुरक्षा समीक्षा तंत्र कार्यालय द्वारा लिया गया, जब चीनी अधिकारियों ने इस वर्ष की शुरुआत में इस सौदे की जांच करने की बात कही थी।
- The **commission did not elaborate on the reasons for the ban**.

आयोग ने प्रतिबंध के कारणों पर विस्तार से जानकारी नहीं दी।

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TOPICS COVERED		
28A	CAR-T cell therapy senses 'faint' targets to clear solid tumours CAR-T कोशिका चिकित्सा ठोस ट्यूमर को समाप्त करने हेतु 'सूक्ष्म' लक्ष्यों को पहचानती है	
28A	TRAI attempts to promote public WiFi hotspots, again TRAI सार्वजनिक WiFi हॉटस्पॉट को बढ़ावा देने का फिर प्रयास	
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CAR-T cell therapy senses 'faint' targets to clear solid tumours

Scientists have developed a highly sensitive receptor that can detect trace amounts of proteins on solid tumours, overcoming a major biological hurdle to using CAR T-cell therapy against cancers such as kidney or ovarian cancer; this can help eliminate previously undetectable tumour cells

GS III: S&T

Anirban Mukhopadhyay

Chimeric antigen receptor (CAR) T-cell therapy, an approach that modifies a patient's own immune cells to hunt down cancer, has transformed treatment for blood cancers such as leukaemia and lymphoma. But the same strategy has struggled when applied to solid tumours such as kidney or ovarian cancer.

One of the biggest obstacles is antigen heterogeneity. Tumours are not made of identical cells. Instead, they resemble a patchwork: some cells display the protein that CAR-T cells detect while others appear to lack it. CAR-T cells only destroy 'visible' targets, so the invisible cells survive and allow the cancer to grow back.

Now, a study published in *Science* on February 26 has suggested these supposedly invisible cells may not be invisible after all. Many tumour cells thought to lack the target protein actually carry small amounts – too little for current CAR-T cells to detect.

The hidden protein

The study conducted by researchers in Columbia University and the Sloan Kettering Cancer Centre in New York focused on a protein called CD70. It is expressed by the tumours in about 70-80% of kidney and ovarian cancers and roughly a quarter of pancreatic cancers, making it an attractive target for immune therapy.

But in real world scenarios, some cells carry large quantities of CD70 while others appear negative in standard laboratory tests.

The researchers suspected that these negative cells might still produce small amounts of the protein.

To check this, they examined individual tumour cells and studied how the gene for CD70 was being regulated. They discovered that it was being suppressed by an enzyme called EZH2, which chemically modifies proteins around DNA.

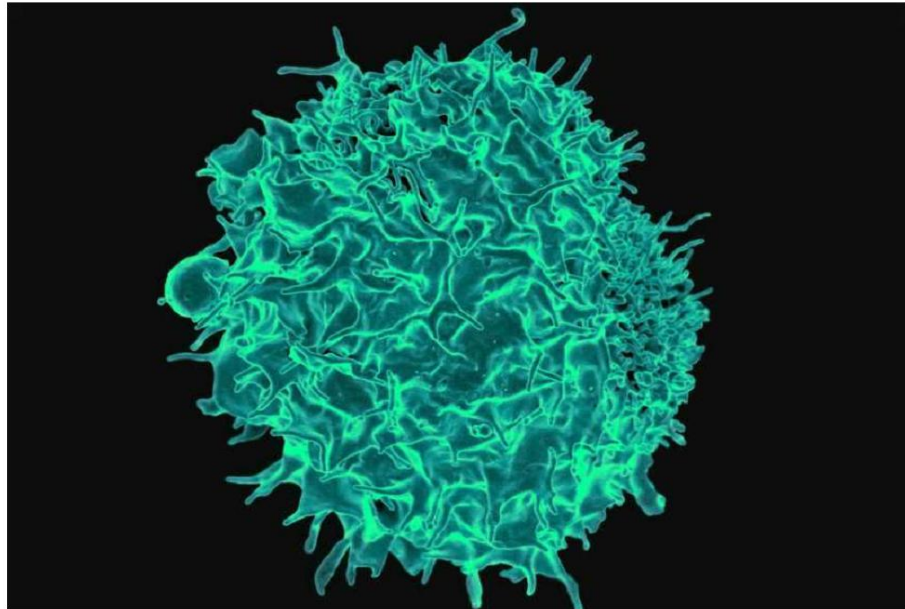
These modifications tighten the DNA structure, making it difficult for the cell to read the gene and reducing CD70 production to very low levels. This effectively dimmed the signal, making the cells undetectable to current immune therapies.

Detailed imaging in two kidney cancer models found more than 80-90% of tumour cells that appeared CD70-negative by conventional tests still carried detectable amounts of the protein.

Scott Lowe, a cancer biologist at the Sloan Kettering Institute, said tumours may keep these tiny amounts of the protein because they still need it to survive. "If the cancer cells need some of the protein to stay viable, there may be evolutionary pressure to keep it at very low levels rather than lose it completely," he said.

The researchers called this phenomenon 'pseudo-heterogeneity' – the target protein is present in nearly all tumour cells but sometimes at levels too low for detection.

If cancer cells hide the target rather than eliminate it, the solution may be to



In CAR T-cell therapy, a patient's T cells (one shown) are isolated, engineered to target specific cancer cells, then reinfused to mount their attack. NIAID/UNSPASH

build immune cells that detect faint signals.

Making T-cells more sensitive

To do this, the researchers developed a new receptor design called an HLA-independent T-cell (HIT) receptor.

Traditional CAR-T cells use receptors with molecular components that tell the immune cell when to attack. These triggers usually require a strong signal, meaning many copies of the target protein must be present on a cancer cell to elicit a response from T-cells.

The HIT receptor takes a different approach. Instead of changing the strength of the signal, it connects the cancer-detecting sensor directly to the T-cell's natural activation pathway – the internal system T-cells normally use to recognise infected cells – while bypassing the HLA system, the genetic ID tag that T-cells usually require to identify a target.

By co-opting this natural machinery, the receptor becomes able to detect antigens at much lower densities than a synthetic CAR.

A cancer biologist who peer-reviewed the study for the journal said anonymously that the finding could change how CAR-T therapies are designed: "If this principle holds for other tumour targets, it could change how we design CAR-T therapies. Instead of searching for perfectly uniform targets, we may need receptors that can detect very low levels of antigen."

Testing the idea

The team tested the approach using xenograft models, in which real human tumour tissue is implanted in mice. These models closely mimic the complexity of cancers found in patients.



If the cancer cells need some of the protein to stay viable, there may be evolutionary pressure to keep it at very low levels rather than lose it completely.

SCOTT LOWE
Cancer biologist at the Sloan Kettering Institute

In kidney cancer models, conventional CAR-T cells initially shrank tumours but eventually failed. The remaining cancer cells, those with extremely low CD70 levels, survived and allowed the tumour to grow back.

The T-cells with the HIT receptor however eliminated these previously undetectable tumour cells. The researchers also observed complete and lasting tumour eradication in several models of kidney, ovarian, and pancreatic cancer with these T-cells.

Power versus safety

Increasing sensitivity raised one concern, however: "When you make immune cells better at detecting weak signals, you also have to be careful they don't start reacting to normal cells that carry small amounts of the same protein," the researcher quoted earlier said.

This problem is often called the "Goldilocks challenge" of cell therapy. To evaluate this risk, the researchers analysed a large single-cell atlas of 30 human tissues and 222 different cell types, finding that CD70 activity was largely absent from most vital organs such as the heart, lungs, and brain.

A significant exception was activated immune cells, which naturally express

CD70 during immune responses. But even in those tissues, the protein appeared only in a small fraction of cells, typically less than 5%.

In experimental models, the engineered T-cells did attack some activated immune cells but the researchers called the effects temporary and manageable.

The biologist noted that future therapies will have to include additional safeguards: "If these treatments move into patients, researchers will likely add safety systems such as molecular switches so doctors can turn the cells off if necessary."

A new hope

Professor Lowe said the finding fits a broader pattern cancer biologists have been observing for years.

There is strong evidence that changes in how genes are turned on or off in cancer cells (without changing the DNA itself) can help tumour cells survive targeted therapies, he said. "These cells, often called drug-tolerant persisters, can tolerate treatment and later allow the tumour to regrow."

The researcher quoted earlier has tempered expectations for now. "It is still a long way from bedside application but if this strategy works in clinical trials, it could help tackle the biggest hurdle in cancer immunotherapy," he said.

As he suggested, for patients with kidney or ovarian tumours, where treatment options are still limited, being able to uncover and eliminate these hidden cells could make a real difference.

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28A. CAR-T cell therapy senses 'faint' targets to clear solid tumours

CAR-T कोशिका चिकित्सा ठोस ट्यूमर को समाप्त करने हेतु 'सूक्ष्म' लक्ष्यों को पहचानती है

- Scientists have developed a highly **sensitive receptor** that can detect **trace amounts of proteins** on **solid tumours**, overcoming a major **biological hurdle** to using **CAR T-cell therapy** against cancers such as **kidney** or **ovarian cancer**; this can help eliminate previously **undetectable tumour cells**

वैज्ञानिकों ने एक अत्यंत संवेदनशील रिसेप्टर विकसित किया है जो ठोस ट्यूमर पर प्रोटीन की सूक्ष्म मात्रा का पता लगा सकता है, जिससे जैविक बाधा को पार किया जा सकता है जो CAR T-कोशिका चिकित्सा के उपयोग में किडनी या डिम्बग्रंथि कैंसर जैसे रोगों के विरुद्ध आती थी; यह पहले से अज्ञात ट्यूमर कोशिकाओं को समाप्त करने में सहायक हो सकता है

Chimeric antigen receptor (CAR) T-cell therapy (काइमेरिक एंटीजन रिसेप्टर (CAR) टी-सेल थेरेपी)

- Chimeric antigen receptor (CAR) T-cell therapy, an approach that modifies a patient's own immune cells to hunt down cancer, has transformed treatment for blood cancers such as **leukaemia** and **lymphoma**.

काइमेरिक एंटीजन रिसेप्टर (CAR) टी-सेल थेरेपी, एक ऐसी विधि है जो रोगी की अपनी प्रतिरक्षा कोशिकाओं को संशोधित कर कैंसर को नष्ट करने के लिए उपयोग करती है, जिसने रक्त कैंसर जैसे ल्यूकेमिया और लिम्फोमा के उपचार को बदल दिया है।

- But the same strategy has struggled when applied to solid tumours such as **kidney** or **ovarian cancer**.

लेकिन यही रणनीति ठोस ट्यूमर जैसे किडनी या ओवरी कैंसर पर लागू होने पर संघर्ष करती रही है।

- One of the biggest obstacles is **antigen heterogeneity**.

सबसे बड़ी बाधाओं में से एक एंटीजन विषमता (**antigen heterogeneity**) है।

- Tumours are not made of identical cells.

ट्यूमर समान कोशिकाओं से नहीं बने होते।

- Instead, they resemble a patchwork: some cells display the protein that CAR-T cells detect while others appear to lack it.

इसके बजाय, वे एक पैचवर्क की तरह होते हैं: कुछ कोशिकाएँ वह प्रोटीन प्रदर्शित करती हैं जिसे CAR-T कोशिकाएँ पहचानती हैं जबकि अन्य में यह नहीं दिखता।

- CAR-T cells only destroy 'visible' targets, so the invisible cells survive and allow the cancer to grow back.

CAR-T कोशिकाएँ केवल 'दिखाई देने वाले' लक्ष्यों को नष्ट करती हैं, इसलिए अदृश्य कोशिकाएँ जीवित रहती हैं और कैंसर को फिर से बढ़ने देती हैं।

- It is expressed by the tumours in about 70-80% of kidney and ovarian cancers and roughly a quarter of pancreatic cancers, making it an attractive target for immune therapy.

यह प्रोटीन लगभग 70-80% किडनी और ओवरी कैंसर तथा लगभग एक-चौथाई अग्नाशय कैंसर में पाया जाता है, जिससे यह इम्यून थेरेपी के लिए आकर्षक लक्ष्य बनता है।

- They discovered that it was being suppressed by an **enzyme called EZH2**, which chemically modifies proteins around DNA.

उन्होंने पाया कि इसे EZH2 नामक एंजाइम द्वारा दबाया जा रहा था, जो DNA के आसपास प्रोटीनों को रासायनिक रूप से संशोधित करता है।

- These modifications tighten the DNA structure, making it difficult for the cell to read the gene and reducing **CD70 production to very low levels**.

ये संशोधन DNA की संरचना को कस देते हैं, जिससे कोशिका के लिए जीन को पढ़ना कठिन हो जाता है और CD70 का उत्पादन बहुत कम हो जाता है।

- This effectively dimmed the signal, making the cells undetectable to current immune therapies.



इससे संकेत प्रभावी रूप से मंद हो जाता है, जिससे ये कोशिकाएँ वर्तमान इम्यून थेरेपी के लिए पहचान से बाहर हो जाती हैं।

Detailed imaging (विस्तृत इमेजिंग)

- Detailed imaging in two kidney cancer models found more than 80-90% of tumour cells that appeared CD70-negative by conventional tests still carried detectable amounts of the protein. दो किडनी कैंसर मॉडलों में विस्तृत इमेजिंग से पाया गया कि पारंपरिक परीक्षणों में CD70-नकारात्मक दिखने वाली 80-90% से अधिक ट्यूमर कोशिकाओं में भी इस प्रोटीन की पहचान योग्य मात्रा मौजूद थी।
- Scott Lowe, a cancer biologist at the Sloan Kettering Institute, said tumours may keep these tiny amounts of the protein because they still need it to survive. Sloan Kettering Institute के कैंसर जीवविज्ञानी **Scott Lowe** ने कहा कि ट्यूमर इन प्रोटीन की छोटी मात्रा को बनाए रख सकते हैं क्योंकि उन्हें जीवित रहने के लिए इसकी आवश्यकता होती है।
- The researchers called this phenomenon 'pseudo-heterogeneity' — the target protein is present in nearly all tumour cells but sometimes at levels too low for detection. शोधकर्ताओं ने इस घटना को 'pseudo-heterogeneity' कहा — लक्ष्य प्रोटीन लगभग सभी ट्यूमर कोशिकाओं में मौजूद होता है, लेकिन कभी-कभी इतना कम होता है कि पहचान में नहीं आता।

Making T-cells more sensitive (टी-कोशिकाओं को अधिक संवेदनशील बनाना)

- To do this, the researchers developed a new receptor design called an HLA-independent T-cell (HIT) receptor. इसके लिए शोधकर्ताओं ने एक नया रिसेप्टर डिज़ाइन विकसित किया जिसे HLA-independent T-cell (HIT) receptor कहा गया।
- Traditional CAR-T cells use receptors with molecular components that tell the immune cell when to attack. पारंपरिक CAR-T कोशिकाएँ ऐसे रिसेप्टर का उपयोग करती हैं जिनमें आणविक घटक होते हैं जो प्रतिरक्षा कोशिका को हमला करने का संकेत देते हैं।
- These triggers usually require a strong signal, meaning many copies of the target protein must be present on a cancer cell to elicit a response from T-cells. ये संकेत आमतौर पर मजबूत होते हैं, अर्थात् T-कोशिकाओं की प्रतिक्रिया के लिए कैंसर कोशिका पर लक्ष्य प्रोटीन की कई प्रतियाँ होनी चाहिए।
- The HIT receptor takes a different approach. HIT रिसेप्टर एक अलग दृष्टिकोण अपनाता है।
- Instead of changing the strength of the signal, it connects the cancer-detecting sensor directly to the T-cell's natural activation pathway — the internal system T-cells normally use to recognise infected cells — while bypassing the HLA system, the genetic ID tag that T-cells usually require to identify a target. संकेत की तीव्रता बदलने के बजाय, यह कैंसर पहचानने वाले सेंसर को सीधे T-कोशिका की प्राकृतिक सक्रियण प्रणाली से जोड़ता है — वह आंतरिक प्रणाली जिससे T-कोशिकाएँ सामान्यतः संक्रमित कोशिकाओं को पहचानती हैं — और साथ ही HLA प्रणाली को बायपास करता है, जो सामान्यतः लक्ष्य पहचानने के लिए आवश्यक आनुवंशिक पहचान टैग होता है।
- By co-opting this natural machinery, the receptor becomes able to detect antigens at much lower densities than a synthetic CAR. इस प्राकृतिक तंत्र का उपयोग करके, यह रिसेप्टर सिंथेटिक CAR की तुलना में बहुत कम घनत्व पर भी एंटीजन को पहचानने में सक्षम हो जाता है।

Testing the idea (विचार का परीक्षण)



- The team tested the approach using **xenograft models**, in which real human tumour tissue is implanted in mice.
टीम ने इस दृष्टिकोण का परीक्षण **xenograft मॉडल** का उपयोग करके किया, जिसमें वास्तविक मानव ट्यूमर ऊतक को चूहों में प्रत्यारोपित किया जाता है।
- These models closely mimic the complexity of cancers found in patients.**
ये मॉडल रोगियों में पाए जाने वाले कैंसर की जटिलता का निकटतम अनुकरण करते हैं।
- In kidney cancer models, conventional CAR-T cells initially shrank tumours but eventually failed.**
किडनी कैंसर मॉडलों में, पारंपरिक CAR-T कोशिकाओं ने प्रारंभ में ट्यूमर को छोटा किया लेकिन अंततः असफल रहीं।
- The remaining cancer cells, those with extremely low CD70 levels, survived and allowed the tumour to grow back.**
शेष कैंसर कोशिकाएँ, जिनमें CD70 का स्तर अत्यंत कम था, जीवित रहीं और ट्यूमर को फिर से बढ़ने दिया।
- The T-cells with the HIT receptor however eliminated these previously undetectable tumour cells.**
हालांकि HIT रिसेप्टर वाली T-कोशिकाओं ने इन पहले से अदृश्य ट्यूमर कोशिकाओं को समाप्त कर दिया।
- The researchers also observed complete and lasting tumour eradication in several models of kidney, ovarian, and pancreatic cancer with these T-cells.**
शोधकर्ताओं ने इन T-कोशिकाओं के साथ किडनी, ओवरी और अग्नशय कैंसर के कई मॉडलों में **पूर्ण और स्थायी ट्यूमर उन्मूलन** भी देखा।

Power versus safety (शक्ति बनाम सुरक्षा)

- Increasing **sensitivity** raised one concern, however: **“When you make immune cells better at detecting weak signals, you also have to be careful they don’t start reacting to normal cells that carry small amounts of the same protein,”** the researcher quoted earlier said.

संवेदनशीलता बढ़ाने से एक चिंता उत्पन्न हुई: “जब आप प्रतिरक्षा कोशिकाओं को कमजोर संकेतों को बेहतर पहचानने योग्य बनाते हैं, तो यह भी सुनिश्चित करना होता है कि वे सामान्य कोशिकाओं पर प्रतिक्रिया न करने लगे जिनमें उसी प्रोटीन की थोड़ी मात्रा होती है,” पहले उद्धृत शोधकर्ता ने कहा।

- This problem is often called the **“Goldilocks challenge” of cell therapy.**

इस समस्या को अक्सर कोशिका चिकित्सा का **“गोल्डीलॉक्स चुनौती”** कहा जाता है।

- In experimental models, the **engineered T-cells** did attack some **activated immune cells** but the researchers called the effects **temporary and manageable.**

प्रयोगात्मक मॉडलों में, संशोधित टी-कोशिकाओं ने कुछ सक्रिय प्रतिरक्षा कोशिकाओं पर हमला किया, लेकिन शोधकर्ताओं ने इन प्रभावों को **अस्थायी और नियंत्रित योग्य** बताया।

28A. TRAI attempts to promote public WiFi hotspots, again

TRAI सार्वजनिक WiFi हॉटस्पॉट को बढ़ावा देने का फिर प्रयास

TRAI attempts to promote public WiFi hotspots, again

GS III: S&T

NEWS ANALYSIS

Aroon Deep
NEW DELHI

Since at first it did not succeed, TRAI’s trying again. The Telecom Regulatory Authority of India (TRAI) came out with a consultation paper seeking a response to the question it asked in 2016: how can public WiFi hotspots take off? As the three private telcos steadily implement tariff hikes, this may be a timely shot at a familiar problem for the government.

Public hotspots have been beset by many issues. For one, WiFi access/gigabyte is far cheaper than even Indian mobile data prices but mobile data is still pretty expensive, constraining demand at scale. A second issue is telcos and Internet service providers’ aggressive campaign against public WiFi, by charging them enterprise-leased line rates costing lakhs a year, pricing out small shops where access points can make a difference.

Hotspot ID friction

But the bigger issue may be the government’s insistence on complete visibility of the identity of every individual connecting to a WiFi hotspot with an OTP or some other form of ID verification. This norm was put in place in 2009 and has no equals in most



Public hotspots have been beset by many issues.

of the world. The 2009 requirements followed terrorist attacks in Ahmedabad and Mumbai, but their utility in signals intelligence and combating crime is questionable.

TRAI’s paper moots a “super-aggregator” to facilitate “inter-hotspot roaming” and “a centralised platform-for-authentication” authentication.

ISP pushback

Further centralisation and more efficient surveillance of WiFi hotspots has been tried. The results speak for themselves. The PM-WANI architecture targeted 10 lakh hotspots under a Public Data Office-type arrangement. To date, less than half that number has been rolled out, four years after the deadline.

Fixed line connections still cost money to build and is usually the post-network build-out generation that leverages the abundance of the networks to

support public goods like WiFi hotspots. India had only about 4.6 crore fixed line Internet connections as of March.

The commercial paranoias among licensed operators is still an obstruction. TRAI is asking what commercial sops could be given to shop owners and establishments. Prohibition of leased line-level tariffs for hotspot providers may have eased some deployment friction. The regulator also flagged right-of-way issues and coordination with municipal bodies as a friction point.

Free hotspots

Building WiFi hotspots in India is not comparable with doing so in a developed nation. The issue is deployers want a business case and can’t (or won’t) generally fold WiFi into other operating costs. WiFi hotspots are usually free elsewhere. This alone distinguishes our hotspot efforts from any other market.

But, persistence is in the interests of the Indian Internet. Mobile networks can get crowded, and of-flooding heavy usage to conveniently-accessible and negligibly-priced WiFi networks can free up licensed spectrum for mobility. These are sticky issues around which the regulator has held two substantive consultations in the last 10 years already. Perhaps the third TRAI paper is the charm.



- Since at first it did not succeed, TRAI's trying again.
शुरुआत में सफलता नहीं मिलने के कारण, TRAI फिर से प्रयास कर रहा है।
- The Telecom Regulatory Authority of India (TRAI) came out with a consultation paper seeking a response to the question it asked in 2016: **how can public WiFi hotspots take on?**
Telecom Regulatory Authority of India (TRAI) ने एक परामर्श पत्र जारी किया, जिसमें 2016 के प्रश्न का उत्तर मांगा गया: सार्वजनिक WiFi हॉटस्पॉट कैसे सफल हो सकते हैं?
- As the three private telcos steadily implement tariff hikes, this may be a timely shot at a familiar problem for the government.
जैसे-जैसे तीन निजी टेलीकॉम कंपनियां लगातार टैरिफ बढ़ा रही हैं, यह सरकार के लिए एक पुराने मुद्दे पर समयानुकूल कदम हो सकता है।
- Public hotspots have been beset by many issues.
सार्वजनिक हॉटस्पॉट कई समस्याओं से घिरे हुए हैं।
- For one, WiFi access/gigabyte is far cheaper than even Indian mobile data prices but mobile data is still pretty inexpensive, constraining demand at scale.
एक तो, WiFi डेटा प्रति गीगाबाइट भारतीय मोबाइल डेटा से सस्ता है, लेकिन मोबाइल डेटा भी काफी सस्ता है, जिससे बड़े पैमाने पर मांग सीमित रहती है।
- A second issue is telcos and Internet service providers' aggressive campaign against public WiFi, by charging them enterprise-leased line rates costing lakhs a year, pricing out small shops where access points can make a difference.
दूसरी समस्या यह है कि टेलीकॉम और इंटरनेट सेवा प्रदाता सार्वजनिक WiFi के खिलाफ आक्रामक अभियान चलाते हैं, और उन्हें महंगे एंटरप्राइज-लीज्ड लाइन रेट्स लगाते हैं, जिससे छोटे दुकानदार बाहर हो जाते हैं।
- **Hotspot ID friction / हॉटस्पॉट पहचान में बाधा**
- **But the bigger issue may be the government's insistence on complete visibility of the identity of every individual connecting to a WiFi hotspot with an OTP or some other form of ID verification.**
लेकिन बड़ी समस्या यह है कि सरकार हर WiFi उपयोगकर्ता की पहचान OTP या ID सत्यापन से पूरी तरह सुनिश्चित करना चाहती है।
- This norm was put in place in 2009 and has no equals in most of the world.
यह नियम 2009 में लागू किया गया था और दुनिया के अधिकांश हिस्सों में इसका कोई समान उदाहरण नहीं है।
- The 2009 requirements followed terrorist attacks in Ahmedabad and Mumbai.
2009 के ये नियम अहमदाबाद और मुंबई में हुए आतंकी हमलों के बाद लागू किए गए थे।
- but their utility in signals intelligence and combating crime is questionable.
लेकिन अपराध रोकने और खुफिया जानकारी के लिए उनकी उपयोगिता संदिग्ध है।
- TRAI's paper moots a "super-aggregator" to facilitate "inter-hotspot roaming" and "a centralised platform-for-authentication" authentication.
TRAI के परामर्श पत्र में "सुपर-एग्रीगेटर" का प्रस्ताव है, जो "इंटर-हॉटस्पॉट रोमिंग" और "केंद्रीकृत प्रमाणीकरण प्लेटफॉर्म" को सक्षम बनाएगा।
- **ISP pushback / ISP का विरोध**
- Further centralisation and more recent surveillance of WiFi hotspots has been tried.
अधिक केंद्रीकरण और बेहतर निगरानी का प्रयास पहले भी किया जा चुका है।
- The results speak for themselves.
इसके परिणाम स्वयं स्पष्ट हैं।
- The **PM-WANI architecture targeted 10 lakh hotspots under a Public Data Office- type arrangement.**
PM-WANI ढांचे के तहत 10 लाख हॉटस्पॉट स्थापित करने का लक्ष्य रखा गया था।
- To date, less than half that number has been rolled out, four years after the deadline.
अब तक समयसीमा के चार साल बाद भी आधे से कम हॉटस्पॉट ही स्थापित हो पाए हैं।



- Fixed line connections still cost money to build and are usually the post-network build-out generation that leverages the abundance of the networks to support public goods like WiFi hotspots.
फिक्सड लाइन कनेक्शन बनाना अभी भी महंगा है और आमतौर पर बाद में ही नेटवर्क का उपयोग सार्वजनिक सेवाओं जैसे WiFi के लिए होता है।
- India had only about 4.6 crore fixed line Internet connections as of March. मार्च तक भारत में लगभग **4.6 करोड़ फिक्सड लाइन इंटरनेट कनेक्शन** ही थे।
- The commercial paranoia among licensed operators is still an obstruction. लाइसेंसधारी ऑपरेटरों की **व्यावसायिक चिंताएं** अभी भी एक बड़ी बाधा हैं।
- TRAI is asking what commercial sops could be given to shop owners and establishments. **TRAI** यह पूछ रहा है कि दुकानदारों और संस्थानों को कौन से व्यावसायिक प्रोत्साहन दिए जा सकते हैं।
- Prohibition of leased line-level tariffs for hotspot providers may have eased some deployment friction. **हॉटस्पॉट प्रदाताओं के लिए लीड लाइन टैरिफ हटाने से कुछ समस्याएं कम हो सकती थीं।**
- The regulator also tagged right-of-way issues and coordination with municipal bodies as a friction point. **नियामक ने राइट-ऑफ-वे और नगर निकायों के साथ समन्वय को भी समस्या बताया।**
- **Free hotspots / मुफ्त हॉटस्पॉट**
- Building WiFi hotspots in India is not comparable with doing so in a developed nation. भारत में WiFi हॉटस्पॉट बनाना **विकसित देशों** जैसा नहीं है।
- The issue is deployers want a business case and can't (or won't) generally fold WiFi into other operating costs. **समस्या यह है कि निवेशक व्यावसायिक लाभ चाहते हैं और WiFi को अन्य खर्चों में शामिल नहीं करते।**
- WiFi hotspots are usually free elsewhere. **अन्य देशों में WiFi हॉटस्पॉट आमतौर पर मुफ्त होते हैं।**
- This alone distinguishes our hotspot exports from any other market. **यही बात हमारे प्रयासों को अन्य बाजारों से अलग बनाती है।**
- But, persistence is in the interests of the Indian Internet. **फिर भी, निरंतर प्रयास भारतीय इंटरनेट के हित में है।**
- Mobile networks can get crowded, and offloading heavy usage to conveniently-accessible and negligibly-priced WiFi networks can free up licensed spectrum for mobility. **मोबाइल नेटवर्क भीड़भाड़ वाले हो सकते हैं और भारी उपयोग को सस्ते WiFi पर स्थानांतरित करने से स्पेक्ट्रम खाली हो सकता है।**

Iran war disrupts circuit board supply chain

AS III S&T
Reuters
BEIJING/SEOUL

The conflict in the Middle East has disrupted supplies of crucial raw materials and pushed up prices of the printed circuit boards (PCB) used in almost all electronic devices, from smartphones and computers to AI servers, industry sources and executives said. The disruption is a fresh blow to electronics manufacturers which are already grappling with soaring memory chip costs and highlights the broadening impact of the Iran war that has wreaked havoc on supply chains, plastics and oil supplies.

Iran struck Saudi Arabia's Jubail petrochemical complex in early April, forcing a halt in production of high-purity poly-



Costly item: An employee uses a pair of tweezers on a printed circuit board at a factory in Dongguan, China. REUTERS

phenyleneether (PPE) resin - a critical base material used to manufacture PCB laminates.

Out of action

SABIC, which accounts for approximately 70% of the world's high-purity PPE supply and operates in the Jubail complex on the Gulf

coast, has been unable to resume output, severely tightening the availability of the material worldwide, according to one source. Shipping in and out of the Gulf has also been severely disrupted by the war.

PCB prices have been climbing since late last year, driven by a growing

The global PCB industry is projected to increase by 12.5% to reach \$95.8 billion in 2026: Prismark

appetite for AI servers. Demand has been accelerating sharply since March as manufacturers scramble to secure raw material supplies and soften the impact of skyrocketing costs, three industry sources told Reuters.

Prices surged 40%

In April alone, PCB prices surged as much as 40% from March, Goldman Sachs analysts said in a recent note. Cloud service providers are willing to accept further increases as they expect demand will outstrip supplies over the

coming years, they added. The global PCB industry is projected to increase by 12.5% to reach \$95.8 billion in 2026, according to a recent report from Prismark.

Daeduck Electronics, a South Korean PCB maker whose customers include Samsung Electronics, SKHynix and AMD, has begun discussions with customers over price increases, a senior executive at the company told Reuters.

The executive, who declined to be named due to sensitivity of the subject, said his priority changed from meeting customers to suppliers, as the waiting time for chemical materials such as epoxy resin have stretched to 15 weeks from three weeks previously.

The sharp rise in PCB prices was also driven by a

shortage of other key materials, including glass fiber and copper foil, according to one source. Copper foil prices have surged as much as 30% so far this year, with the rally gaining momentum in March, the source added. Copper accounts for around 60% of total raw material costs in PCB manufacturing, according to Victory Giant Technology, a major Chinese PCB supplier for Nvidia. The Chinese firm warned earlier this month that the Middle East conflict could push up prices for key materials including resin and copper.

Multi-layer PCBs can cost around 1,394 yuan (\$204) per square metre, with higher-end models for AI servers costing around 13,475 yuan, according to Victory Giant.



28A. Iran war disrupts circuit board supply chain

ईरान युद्ध ने सर्किट बोर्ड आपूर्ति श्रृंखला को बाधित किया

- The conflict in the Middle East has disrupted supplies of crucial raw materials and pushed up prices of the **printed circuit boards (PCB)** used in almost all **electronic devices**, from **smartphones and computers to AI servers**, industry sources and executives said.
मध्य पूर्व में संघर्ष ने महत्वपूर्ण कच्चे माल की आपूर्ति को बाधित कर दिया है और लगभग सभी इलेक्ट्रॉनिक उपकरणों, जैसे स्मार्टफोन, कंप्यूटर और AI सर्वर में उपयोग होने वाले PCB (प्रिंटेड सर्किट बोर्ड) की कीमतों को बढ़ा दिया है।
- Iran struck Saudi Arabia's **Jubail petrochemical complex** in early April, forcing a halt in production of **high-purity polyphenyleneether (PPE) resin** — a critical base material used to **manufacture PCB laminates**.
ईरान ने अप्रैल की शुरुआत में सऊदी अरब के **जुबैल पेट्रोकेमिकल कॉम्प्लेक्स** पर हमला किया, जिससे उच्च-शुद्धता वाले **PPE रेज़िन** का उत्पादन रुक गया, जो PCB बनाने के लिए आवश्यक कच्चा माल है।

Out of action / उत्पादन ठप

- SABIC**, which accounts for approximately 70% of the world's high-purity **PPE supply and operates in the Jubail complex on the Gulf coast**, has been unable to resume output, severely tightening the availability of the material worldwide, according to one source.
SABIC, जो दुनिया की लगभग 70% उच्च-शुद्धता **PPE** आपूर्ति करता है और जुबैल कॉम्प्लेक्स में कार्यरत है, उत्पादन फिर से शुरू नहीं कर पाया है, जिससे वैश्विक स्तर पर इसकी उपलब्धता कम हो गई है।
- Shipping in and out of the Gulf has also been severely disrupted by the war.
खाड़ी क्षेत्र में आने-जाने वाली **शिपिंग** भी युद्ध के कारण गंभीर रूप से प्रभावित हुई है।
- The sharp rise in PCB prices was also driven by a shortage of other key materials, including **glass fiber and copper foil**, according to one source.
PCB की कीमतों में वृद्धि का कारण अन्य महत्वपूर्ण सामग्री जैसे **ग्लास फाइबर और कॉपर फॉइल** की कमी भी है।
- Copper foil prices have surged as much as 30% so far this year, with the rally gaining momentum in March, the source added.
इस वर्ष अब तक **कॉपर फॉइल की कीमतें** 30% तक बढ़ चुकी हैं और मार्च में इसमें तेजी आई है।
- Copper accounts for around 60% of total raw material costs in PCB manufacturing, according to **Victory Giant Technology**.
PCB निर्माण में कुल कच्चे माल की लागत का लगभग 60% हिस्सा **कॉपर** का होता है, **Victory Giant Technology** के अनुसार।

DeepSeek's latest AI model draws subdued market response

ISSUE: SAT

Reuters
BEIJING

Market reaction to DeepSeek's preview of its long-awaited next-generation artificial intelligence model has so far been subdued compared with the Chinese start-up's outsized global breakthrough last year after the launch of its low-cost AI models. The release and overseas reception of DeepSeek-V3 and R1, which the Hangzhou-based company said were trained at a fraction of the computing power used by U.S. rivals, triggered a global tech share sell-off as investors questioned the logic behind massive spending on AI infrastructure. That moment was widely viewed by analysts as a

"black swan" event that forced a sudden rethinking of assumptions about cost, competition, and China's ability to innovate under U.S. chip restrictions.

Muted reaction

But the muted reaction so far to DeepSeek-V4, launched on Friday, highlights how quickly those assumptions have shifted. Markets and industries have grown accustomed to low-cost, highly efficient models developed under computing constraints, reducing the element of surprise.

"This announcement followed a rather predictable path," said Lian Jye Su, chief analyst at Omdia, noting that advances in model architectures and efficiency have since been widely



Flop show: The DeepSeek logo is seen in this illustration. REUTERS

explored across industry and academia. Benchmark data support that view. According to ArtificialAnalysis, DeepSeek-V4 Pro shows significant improvement over

previous versions but overall ranks among leading open-weight models rather than clearly surpassing rivals, with competitors such as Kimi and Qwen narrowing the gap.

That contrasts with last year, when DeepSeek appeared to leap ahead of domestic peers, driving rapid adoption in China and amplifying its global impact.

China's DeepSeek is offering developers 75% discount on newly-unveiled DeepSeek-V4-Pro

Analysts say the earlier shock was driven by a convergence of factors: lofty valuations of U.S. tech firms, expectations of continued dominance by a handful of players, and the emergence of a relatively unknown Chinese startup delivering unexpectedly strong results.

Those conditions are no longer present.

More realistic

"The expectation that new players will emerge is now baked into valuations," Su said, adding that markets

have become more realistic about both the capabilities and limits of AI.

At the same time, competition within China has intensified, with multiple firms releasing increasingly capable models, eroding DeepSeek's relative lead.

On Monday, stock markets in South Korea and Taiwan hit new highs, buoyed by broad optimism for AI-related stocks.

Tech supremacy

Alfredo Montufar-Helu, managing director at AnKura China Advisors, said the significance of V4 lies less in market impact and more in the U.S.-China race for tech supremacy.

He pointed to DeepSeek's adaptation of V4 to run best on Huawei chips, as tightening U.S. export

controls are designed to cut off the Chinese market's access to cutting-edge U.S. chips that power AI model development.

"The 'wow factor' was last year - that's already priced in," he said.

"What matters now is whether China can continue advancing on AI development, and potentially do so with its own chips - the geopolitical implications would be significant."

Meanwhile, China's DeepSeek is offering developers a 75% discount on its newly unveiled AI model, DeepSeek-V4-Pro, until May 5, latest reports said. The company is also cutting prices for input cache hits across its entire DeepSeek API lineup to one-tenth of the original price, it said in a post on X.



28A. DeepSeek's latest AI model draws subdued market response

DeepSeek के नवीनतम AI मॉडल को बाजार से सीमित प्रतिक्रिया मिली

- The release and overseas reception of **DeepSeek-V3 and R1**, which the Hangzhou-based company said were trained at a fraction of the computing power used by U.S. rivals, triggered a global tech share sell-off as investors questioned the logic behind massive spending on AI infrastructure.

DeepSeek-V3 और R1 की रिलीज़ और विदेशों में उनकी स्वीकृति, जिन्हें Hangzhou स्थित कंपनी ने अमेरिकी प्रतिस्पर्धियों की तुलना में बहुत कम कंप्यूटिंग शक्ति पर प्रशिक्षित बताया, ने वैश्विक टेक शेयरों में गिरावट ला दी क्योंकि निवेशकों ने **AI अवसंरचना** पर भारी खर्च के तर्क पर सवाल उठाया।

- That moment was widely viewed by analysts as a **"black swan" event** that forced a sudden repricing of assumptions about cost, competition, and China's ability to innovate under U.S. chip restrictions.

उस समय को विश्लेषकों ने व्यापक रूप से **"ब्लैक स्वान"** घटना माना, जिसने लागत, प्रतिस्पर्धा और अमेरिकी चिप प्रतिबंधों के तहत चीन की नवाचार क्षमता के बारे में धारणाओं का पुनर्मूल्यांकन करने को मजबूर किया।

GS Paper III: Environment

28 April 2026

TOPICS COVERED

28A Light pollution threatens the world's clearest skies
प्रकाश प्रदूषण दुनिया के सबसे स्वच्छ आकाशों के लिए खतरा है

Light pollution threatens the world's clearest skies

GS III: Environment
Associated Press

It takes a moment for the eyes to adjust. A faint spark appears in the darkness; then another, brighter one. Soon, stars, planets and entire constellations emerge. Before long, a whole galaxy stretches across the sky, visible to the naked eye.

In Chile's Atacama Desert, the night sky feels infinite. Considered the driest place on the earth, its darkness is also one of the clearest windows to the universe.

A rare combination of dry climate, high altitude, and isolation from urban light pollution makes the Atacama an unrivalled hub for world-class astronomy and home to the world's largest ground-based astronomical projects.

"The conditions in the Atacama Desert are unique in the world," said Chiara Mazzucchelli, president of the Chilean Astronomical Society. "There are more than 300 clear nights per year, meaning no clouds and no rain."

But these skies may be at risk.

A rare combination of dry climate, high altitude, and isolation from light pollution makes the Atacama a hub for astronomy and home to some of the largest astronomical projects

Last year, the desert became a battleground between scientists and an energy firm proposing a green power complex just kilometres from the Paranal Observatory. Managed by the European Southern Observatory (ESO), the site also is the future home to what is to be the most powerful optical telescope.

Although the energy project was cancelled in January following an appeal from astronomers and physicists, it exposed concerns that existing sky preservation laws are outdated and unclear. Since then, several environmental regulations have come under review.

The so-called Photon Valley in Chile is a high-altitude corridor where several observatories operate side by side using some of the most sophisticated instruments ever engineered.

"ESO's telescopes in particular are the most powerful astronomical facilities on the planet," said Itziar de Gregorio-Monsalvo, the ESO representative in Chile.

Every year, the Atacama Desert draws thousands of astronomers and scientists from around the world. "We are lucky to be here," said Julia Bodensteiner, an assistant professor at University of Amsterdam.

Walking across the Atacama's rocky, uneven terrain is no easy task. At altitudes exceeding 3,000 m, oxygen becomes a luxury, while scorching days give way to relentlessly cold nights. But for space observation, the more than 105,000 sq. km of desert are the perfect setting.

The exceptional conditions of the Atacama have enabled some of the most ambitious astronomical projects ever conceived, like the Extremely Large Telescope, ELT – a \$1.5 billion endeavor by ESO scheduled for completion in 2030.

With 798 mirrors and a light-gathering area of nearly 1,000 square metres, the ELT will be 20 times more powerful than today's leading telescopes and 15-times sharper than Hubble Space Telescope.

Twenty years ago, the Atacama Desert was "an ocean of darkness," recalled Eduardo Unda-Sanzana, director of the Astronomy Center at the University of Antofagasta.

Over the years, however, the landscape has changed drastically. Driven by urban sprawl, industrial development, and the arrival of mining and wind farms, the desert has become coveted territory where balance is not always easy to reach.

28A. Light pollution threatens the world's clearest skies

प्रकाश प्रदूषण दुनिया के सबसे स्वच्छ आकाशों के लिए खतरा है

Atacama Desert and Astronomy (अटाकामा मरुस्थल और खगोल विज्ञान)

- It takes a moment for the eyes to adjust.

आँखों को अनुकूल होने में थोड़ा समय लगता है।

- A faint spark appears in the darkness; then another, brighter one. अंधकार में एक हल्की चिंगारी दिखाई देती है; फिर एक और, अधिक प्रकाशमान।

- Soon, stars, planets and entire constellations emerge.

जल्द ही तारे, ग्रह और तारामंडल दिखाई देने लगते हैं।

- Before long, a whole galaxy stretches across the sky, visible to the naked eye.

कुछ ही समय में, पूरा आकाशगंगा समूह आकाश में फैल जाता है, जो नंगी आँखों से दिखाई देता है।



- In Chile's Atacama Desert, the night sky feels infinite.
चिली के अटाकामा मरुस्थल में रात का आकाश अनंत प्रतीत होता है।
- Considered the driest place on the earth, its darkness is also one of the clearest windows to the universe.
पृथ्वी का सबसे शुष्क स्थान माने जाने वाला यह क्षेत्र, अपनी अंधकारमय स्थिति के कारण ब्रह्मांड का सबसे स्पष्ट दृश्य प्रदान करता है।
- A rare combination of dry climate, high altitude, and isolation from urban light pollution makes the Atacama an unrivalled hub for world-class astronomy and home to the world's largest ground-based astronomical projects.
शुष्क जलवायु, उच्च ऊँचाई और शहरी प्रकाश प्रदूषण से दूरी का दुर्लभ संयोजन अटाकामा को विश्व-स्तरीय खगोल विज्ञान का प्रमुख केंद्र बनाता है और यह विश्व की सबसे बड़ी भूमि-आधारित खगोलीय परियोजनाओं का घर है।
- "There are more than 300 clear nights per year, meaning no clouds and no rain."
"यहाँ प्रति वर्ष 300 से अधिक साफ रातें होती हैं, अर्थात् न बादल होते हैं और न वर्षा।"
- But these skies may be at risk.
लेकिन यह आकाश अब खतरे में पड़ सकता है।
- Last year, the desert became a battleground between scientists and an energy firm proposing a green power complex just kilometres from the Paranal Observatory.
पिछले वर्ष, यह मरुस्थल वैज्ञानिकों और एक ऊर्जा कंपनी के बीच संघर्ष का क्षेत्र बन गया, जिसने Paranal Observatory के पास एक हरित ऊर्जा परियोजना का प्रस्ताव दिया था।
- Managed by the European Southern Observatory (ESO), the site also is the future home to what is to be the most powerful optical telescope.
यह स्थल European Southern Observatory (ESO) द्वारा संचालित है और यहाँ भविष्य में सबसे शक्तिशाली ऑप्टिकल टेलीस्कोप स्थापित किया जाना है।
- The so-called Photon Valley in Chile is a high-altitude corridor where several observatories operate side by side using some of the most sophisticated instruments ever engineered.
चिली का तथाकथित फोटॉन वैली एक उच्च-ऊँचाई क्षेत्र है जहाँ कई वेधशालाएँ अत्याधुनिक उपकरणों के साथ साथ-साथ कार्य करती हैं।
- "ESO's telescopes in particular are the most powerful astronomical facilities on the planet," said Itziar de Gregorio-Monsalvo, the ESO representative in Chile.
"विशेष रूप से ESO के टेलीस्कोप पृथ्वी पर सबसे शक्तिशाली खगोलीय उपकरण हैं," चिली में ESO की प्रतिनिधि Itziar de Gregorio-Monsalvo ने कहा।