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PCS Special:	01 March
01Mar	J & K lords it over Karnataka, wins historic title जम्मू-कश्मीर ने कर्नाटक पर दबदबा बनाते हुए ऐतिहासिक खिताब जीता

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J & K lords it over Karnataka, wins historic title

Qamran and Sahil hit unbeaten tons as the northern side bats out the final day without losing a wicket to clinch its maiden crown; southern outfit loses its second consecutive summit clash at home



Winning feeling! Skipper Dogra was at the forefront of J & K's memorable and triumphant campaign. K. MURALI KUMAR

RANJI TROPHY FINAL

N. Sudarshan
HUBBALLI

In a baking, early-summer afternoon at the KSCA Rajnagar Stadium here on Saturday, Jammu & Kashmir steamrolled Karnataka to win its maiden Ranji Trophy title.

As J & K went into day five a massive 477 runs in the green and with six second-innings wickets still intact, the result was seldom in question.

Solid effort

Yet, the visitors refused to move, even by an inch, the foot they had had on Karnataka's neck since the start of the contest.

Paras Dogra & Co. batted for 56 overs, added 156 runs and did not lose a wicket. Karnataka's down-

fall was slow and painful, with little heed to its reputation as an eight-time champion. Death by thousand cuts it truly was.

It was fitting that the men in the middle, when draw was called at 2:10 p.m. and J & K declared the champion, were Qamran Iqbal (160 n.o., 31b, 16x4, 3x6) and Sahil Lotra (101 n.o., 226b, 8x4, 3x6).

Both were last-minute injury replacements for experienced opener Shubham Khajuria and young all-rounder Vanshaj Sharma. Qamran's was his second First Class ton and Sahil's his first. J & K had an assembly line of heroes.

Chastening experience

For Karnataka, it will be a chastening experience, for even a star-studded team couldn't stop the State from losing a second straight home final, albeit 16 years apart.

In the time since Karnataka won its last title in 2014-15, Vidarbha has won thrice, Saurashtra twice, Gujarat and Madhya Pradesh once each.

With J & K now joining the list, the democratisation of Indian cricket is all but complete - Kanyakumari to Kashmir.

The scores: Jammu & Kashmir

— 1st innings: 594.

Karnataka — 1st innings: 293.

Jammu & Kashmir — 2nd

innings: Qamran Iqbal (not out)

160, Waver Hassan b Prasidh 1,

Shubham Pundir c sub (Shrijith) b

Vyshak 4, Paras Dogra b Prasidh

16, Abdul Samad c Vyshak b

Shreyas 32, Sahil Lotra (not out)

101; Extras (b-17, lb-9, w-2): 28;

Total (for four wks. decl. in

113 overs): 342.

Fall of wickets: 1-6, 2-11, 3-72,

4-145.

Karnataka bowling: Vyshak

10-1-30-1, Prasidh 12-0-42-2,

Vijaynar 13-0-51-0, Shikhar

31-10-50-0, Shreyas 36-13-84-1,

Karun 7-2-21-0, Rahul 2-0-15-0,

Mayank 2-0-23-0.

01Mar. J & K lords it over Karnataka, wins historic title

जम्मू-कश्मीर ने कर्नाटक पर दबदबा बनाते हुए ऐतिहासिक खिताब जीता

- Qamran and Sahil hit unbeaten tons as the northern side bats out the final day without losing a wicket to clinch its maiden crown; southern outfit loses its second consecutive summit clash at home

कमरान और साहिल ने नाबाद शतक लगाए, उत्तरी टीम ने बिना विकेट खोए अंतिम दिन बल्लेबाज़ी करते हुए अपना पहला खिताब जीता; दक्षिणी टीम को घर पर लगातार दूसरी बार फाइनल में हार मिली

- On a baking, early-summer afternoon at the KSCA Rajnagar Stadium here on Saturday, Jammu & Kashmir steamrolled Karnataka to win its maiden Ranji Trophy title.

शनिवार को यहां KSCA राजनगर स्टेडियम में भीषण शुरुआती गर्मी की दोपहर में जम्मू-कश्मीर ने कर्नाटक को हराकर अपना पहला रणजी ट्रॉफी खिताब जीत लिया।

- As J & K went into day five a massive 477 runs in the green and with six second-innings wickets still intact, the result was seldom in question.

जब जम्मू-कश्मीर पांचवें दिन में 477 रनों की बड़ी बढ़त और दूसरी पारी के छह विकेट शेष रहते हुए उतरा, तो परिणाम लगभग तय ही था।

Solid effort

मजबूत प्रयास

- Yet, the visitors refused to move, even by an inch, the foot they had had on Karnataka's neck since the start of the contest.

फिर भी मेहमान टीम ने मुकाबले की शुरुआत से ही कर्नाटक पर बनाए दबाव को ज़रा भी कम नहीं होने दिया।

- Paras Dogra & Co. batted for 56 overs, added 156 runs and did not lose a wicket. परस डोगरा और साथियों ने 56 ओवर बल्लेबाज़ी की, 156 रन जोड़े और कोई विकेट नहीं गंवाया।

- Karnataka's downfall was slow and painful, with little heed to its reputation as an eight-time champion.

कर्नाटक का पतन धीमा और पीड़ादायक रहा, जबकि वह आठ बार का चैंपियन रह चुका है।

- Death by thousand cuts it truly was.

वास्तव में यह धीरे-धीरे मिली हार जैसा था।

- In the time since Karnataka won its last title in 2014-15, Vidarbha has won thrice, Saurashtra twice, Gujarat and Madhya Pradesh once each.

जब से कर्नाटक ने अपना आखिरी खिताब 2014-15 में जीता, तब से विदर्भ ने तीन बार, सौराष्ट्र ने दो बार, और गुजरात व मध्य प्रदेश ने एक-एक बार खिताब जीता है।

- With J & K now joining the list, the democratisation of Indian cricket is all but complete - Kanyakumari to Kashmir.

अब जम्मू-कश्मीर के भी सूची में जुड़ने से भारतीय क्रिकेट का लोकतंत्रीकरण लगभग पूरा हो गया है - कन्याकुमारी से कश्मीर तक।



The scores:

स्कोर इस प्रकार हैं:

- Jammu & Kashmir — 1st innings: 584.
जम्मू-कश्मीर — पहली पारी: 584 रन।
- Karnataka — 1st innings: 293.
कर्नाटक — पहली पारी: 293 रन।
- Jammu & Kashmir — 2nd innings: Qamran Iqbal (not out) 160, Yawer Hassan b Prasad 1, Shubham Pundir c sub (Shrijith) b Vyshak 4, Paras Dogra b Prasad 16, Abdul Samad c Vyshak b Shreyas 32, Sahil Lotra (not out) 101.
जम्मू-कश्मीर — दूसरी पारी: क्रमरान इकबाल (नाबाद) 160, यावर हसन प्रसीध बोल्ड 1, शुभम पुंडिर सब (श्रीजीत) कैच व वैशाख बोल्ड 4, परस डोगरा प्रसीध बोल्ड 16, अब्दुल समद वैशाख कैच व श्रेयस बोल्ड 32, साहिल लोत्रा (नाबाद) 101।
- Extras (b-17, lb-9, w-2): 28.
एक्स्ट्रा (बाय-17, लेग बाय-9, वाइड-2): 28।
- Total (for four wkts. decl. in 113 overs): 342.
कुल (चार विकेट पर घोषित, 113 ओवर में): 342।
- Fall of wickets: 1-6, 2-11, 3-72, 4-145.
विकेट पतन: 1-6, 2-11, 3-72, 4-145।
- Karnataka bowling: Vyshak 10-1-30-1, Prasad 12-0-42-2, Vidyadhar 13-0-51-0, Shikhar 31-10-50-0, Shreyas 36-13-84-1, Karun 7-2-21-0, Rahul 2-0-15-0, Mayank 2-0-23-0.
कर्नाटक गेंदबाजी: वैशाख 10-1-30-1, प्रसीध 12-0-42-2, विद्याधर 13-0-51-0, शिखर 31-10-50-0, श्रेयस 36-13-84-1, करुण 7-2-21-0, राहुल 2-0-15-0, मयंक 2-0-23-0।
- It was fitting that the men in the middle, when draw was called at 2:10 p.m. and J & K declared the champion, were Qamran Iqbal (160 n.o., 311b, 16x4, 3x6) and Sahil Lotra (101 n.o., 226b, 8x4, 3x6).
यह उपयुक्त था कि जब दोपहर 2:10 बजे ड्रॉ घोषित हुआ और जम्मू-कश्मीर को चैंपियन घोषित किया गया, तब क्रीज़ पर क्रमरान इकबाल (160 नाबाद, 311 गेंद, 16 चौके, 3 छक्के) और साहिल लोत्रा (101 नाबाद, 226 गेंद, 8 चौके, 3 छक्के) मौजूद थे।
- Both were last-minute injury replacements for experienced opener Shubham Khajuria and young all-rounder Vanshaj Sharma.
दोनों खिलाड़ी अनुभवी ओपनर शुभम खजूरिया और युवा ऑल-राउंडर वंशज शर्मा के आखिरी समय में चोट के कारण किए गए स्थानापन्न थे।
- Qamran's was his second First Class ton and Sahil's his first.
क्रमरान का यह दूसरा फर्स्ट-क्लास शतक था और साहिल का यह पहला था।
- J & K had an assembly line of heroes.
जम्मू-कश्मीर के पास मानो नायकों की पूरी श्रृंखला थी।

Chastening experience

कठोर अनुभव

- For Karnataka, it will be a chastening experience, for even a star-studded team couldn't stop the State from losing a second straight home final, albeit 16 years apart.
कर्नाटक के लिए यह एक कठोर अनुभव होगा, क्योंकि सितारों से सजी टीम भी राज्य को घर पर लगातार दूसरा फाइनल हारने से नहीं बचा सकी, भले ही दोनों के बीच 16 वर्षों का अंतर रहा।



GS Paper 1: History

TOPICS COVERED

01 March 2026

01Mar	Array of festivals to celebrate tribal arts, music, culture and commerce जनजातीय कला, संगीत, संस्कृति और वाणिज्य का जश्न मनाने के लिए उत्सवों की श्रृंखला
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Array of festivals to celebrate tribal arts, music, culture and commerce

GS I: History
The Hindu Bureau
NEW DELHI

The Tribal Affairs Ministry on Saturday announced a slate of events to be held in March in the national capital to celebrate tribal culture and commerce. They include a tribes art fest, the Living Roots Music Festival, and the Bharat Tribes Fest, 2026.

“By bringing together art, music, enterprise development and strategic collaboration within one coordinated framework, the Ministry seeks to ensure that tribal communities are empowered participants in India’s cultural and economic transformation,” Union Tribal Affairs Minister Jual Oram said at a press conference.

He unveiled the logos for the festivals, noting that



Cultural ensemble: The event aims at positioning tribal heritage at the centre of India’s inclusive growth narrative. G. N. RAO

“these programmes reaffirm the Centre’s commitment to safeguarding tribal identity, strengthening livelihoods, expanding market access and positioning tribal heritage at the centre of India’s inclusive growth narrative”.

The Tribes Art Fest will be held at the Travancore Palace art gallery in New

Delhi from March 2 to 13, the Minister said, adding that it would bring together over 70 tribal artists and showcase over 1,000 artworks from 30 distinct tribal art forms from across the country. This event will include “curated walk-throughs, live painting demonstrations, illustrated talks, mentorship work-

shops, participatory sessions, and panel discussions,” a statement said.

The Living Roots Music Festival is scheduled to be held over two days in New Delhi from March 13 to 15, and will have daytime sessions at the Bikaner House and evening programmes at Kartavya Path.

This will be followed by the Bharat Tribes Fest 2026, a rebranded version of the Ministry’s earlier Adi Mahotsav tribal product showcase, which will be held this year at Sunder Nursery from March 18 to 30.

The fest will feature a Tribal Business Conclave, which has been “structured to promote tribal entrepreneurship and integrate tribal enterprises into domestic and global value chains”.

01Mar. Array of festivals to celebrate tribal arts, music, culture and commerce जनजातीय कला, संगीत, संस्कृति और वाणिज्य का जश्न मनाने के लिए उत्सवों की श्रृंखला

- The **Tribal Affairs Ministry** on Saturday announced a slate of events to be held in March in the **national capital** to celebrate **tribal culture and commerce**.
जनजातीय कार्य मंत्रालय ने शनिवार को राष्ट्रीय राजधानी में मार्च के दौरान आयोजित होने वाले कार्यक्रमों की एक श्रृंखला की घोषणा की, जिनका उद्देश्य **जनजातीय संस्कृति और वाणिज्य** का उत्सव मनाना है।
- They include a **tribes art fest**, the **Living Roots Music Festival**, and the **Bharat Tribes Fest, 2026**.
इनमें **Tribes Art Fest**, **Living Roots Music Festival** और **Bharat Tribes Fest, 2026** शामिल हैं।
- “By bringing together **art, music, enterprise development and strategic collaboration** within one coordinated framework, the **Ministry** seeks to ensure that **tribal communities** are empowered participants in **India’s cultural and economic transformation**,” **Union Tribal Affairs Minister Jual Oram** said at a press conference.
“कला, संगीत, उद्यम विकास और रणनीतिक सहयोग को एक समन्वित ढांचे में एक साथ लाकर मंत्रालय यह सुनिश्चित करना चाहता है कि **जनजातीय समुदाय भारत के सांस्कृतिक और आर्थिक परिवर्तन** में सशक्त भागीदार बनें,” **केंद्रीय जनजातीय कार्य मंत्री जुएल ओराम** ने एक प्रेस सम्मेलन में कहा।



- He unveiled the **logos** for the festivals, noting that “these programmes reaffirm the **Centre’s commitment** to safeguarding **tribal identity**, strengthening **livelihoods**, expanding **market access** and positioning **tribal heritage** at the centre of **India’s inclusive growth narrative**”.
उन्होंने इन उत्सवों के **लोगो** का अनावरण किया और कहा कि “ये कार्यक्रम **केंद्र की प्रतिबद्धता** को पुनः पुष्ट करते हैं, जिसका उद्देश्य **जनजातीय पहचान** की रक्षा करना, **आजीविका** को मजबूत करना, **बाजार पहुंच** का विस्तार करना और **जनजातीय विरासत** को **भारत की समावेशी विकास कथा** के केंद्र में स्थापित करना है।”
- The **Tribes Art Fest** will be held at the **Travancore Palace art gallery** in **New Delhi** from **March 2 to 13**, the Minister said, adding that it would bring together over **70 tribal artists** and showcase over **1,000 artworks** from **30 distinct tribal art forms** from across the country.
मंत्री ने कहा कि **Tribes Art Fest** **नई दिल्ली** के **त्रावणकोर पैलेस आर्ट गैलरी** में **2 मार्च से 13 मार्च** तक आयोजित किया जाएगा, जिसमें **70 से अधिक जनजातीय कलाकार** भाग लेंगे और देशभर की **30 अलग-अलग जनजातीय कला शैलियों** की **1,000 से अधिक कलाकृतियों** का प्रदर्शन किया जाएगा।
- This event will include “**curated walkthroughs, live painting demonstrations, illustrated talks, mentorship workshops, participatory sessions, and panel discussions,**” a statement said.
एक बयान में कहा गया कि इस कार्यक्रम में “**क्यूरेटेड वॉकथ्रू, लाइव पेंटिंग प्रदर्शन, चित्रित वार्ताएं, मेंटरशिप कार्यशालाएं, सहभागिता सत्र और पैनल चर्चा**” शामिल होंगे।
- The **Living Roots Music Festival** is scheduled to be held over two days in **New Delhi** from **March 13 to 15**, and will have **daytime sessions** at the **Bikaner House** and **evening programmes** at **Kartavya Path**.
Living Roots Music Festival **नई दिल्ली** में **13 मार्च से 15 मार्च** तक दो दिनों में आयोजित किया जाएगा, जिसमें **दिन के सत्र बीकानेर हाउस** में और **शाम के कार्यक्रम कर्तव्य पथ** पर होंगे।
- This will be followed by the **Bharat Tribes Fest 2026**, a rebranded version of the Ministry’s earlier **Adi Mahotsav tribal product showcase**, which will be held this year at **Sunder Nursery** from **March 18 to 30**.
इसके बाद **Bharat Tribes Fest 2026** आयोजित होगा, जो मंत्रालय के पहले के **आदि महोत्सव जनजातीय उत्पाद प्रदर्शनी** का पुनर्ब्रांडेड संस्करण है, और इसे इस वर्ष **18 मार्च से 30 मार्च** तक **सुंदर नर्सरी** में आयोजित किया जाएगा।
- The fest will feature a **Tribal Business Conclave**, which has been “structured to promote **tribal entrepreneurship** and integrate **tribal enterprises** into **domestic and global value chains**”.
इस उत्सव में **Tribal Business Conclave** भी होगा, जिसे **जनजातीय उद्यमिता** को बढ़ावा देने और **जनजातीय उद्यमों** को **घरेलू और वैश्विक मूल्य श्रृंखलाओं** में एकीकृत करने के लिए संरचित किया गया है।

GS Paper II: Polity,

TOPICS COVERED

01 March 2026

01Mar

‘Constitutional thinking has to start from home’
‘संवैधानिक सोच की शुरुआत घर से होनी चाहिए’



'Constitutional thinking has to start from home'

Indians do not allow constitutional provisions to influence personal behaviour, says former Orissa HC Chief Justice at *The Hindu Justice Unplugged 2026*; change comes from social milieu, he adds

SS II, Poony
Aaradhika Bhatnagar
NEW DELHI

We are in a country where we do not allow the provisions of the Constitution to influence our personal behaviour, S. Muralidhar, former Chief Justice of the Orissa High Court and now a senior advocate of the Supreme Court, said at *The Hindu Justice Unplugged* on Saturday.

In a conversation with Krishnadas Rajagopal, Legal Correspondent at *The Hindu*, the eminent jurist and author said change comes from the social milieu where you grow up in your houses, in your homes, while talking about how constitutional thinking has to start from home. He said it was up to each young lawyer to make the best of the initial years of struggle. Edited excerpts:

SM: Law is very much in everyone's mind, imagination. The amount of coverage of courts and lawyers in the last two decades has been phenomenal. After the advent of social media, everyone gets to see some video clip of some lawyer in action or judge in ac-

tion. I think there is a greater realisation that courts are playing whether we want it or not, a very active role in people's life. Almost every aspect of life in India is governed by some court order or some statute or some legal policy. So everybody is interested in knowing what's happening in the courts and with lawyers.

The one marked change I am finding, and this owes to the change in legal education, is the advent of the national law schools and products of the national law schools coming into the bar.

Of course, some have been fired by idealism and are very clear that they want to practice from day one. But there is this trend. There is also a trend of the national law school products coming back into academia. So, they are coming back to teach in the national law schools. Of course, the divide does exist.

But overall I would think it is improving the quality in an indirect way, also among the Bench, because many of these young law students are intermingling with judges. Many of them are law researchers for judges.



S. Muralidhar, former Chief Justice of Orissa HC, with Krishnadas Rajagopal, Legal Correspondent at *The Hindu*, in conversation at *The Hindu Justice Unplugged 2026* in New Delhi on Saturday.

I know judges who are driven to perform better with many young minds around them. There is a whole building up of public opinion and driving lawyers and judges to get homosexuality decriminalised. Even the latest Sukanya Shanta judgment which invalidated many provisions of prison manuals which permitted segregation of prisoners on cast lines or allocation of duties to prisoners on cast lines. There are many young legal minds interacting with judges.

Many of them I know with a right to life - have to be incalculable at a very young age, it has to evolve as a natural way of thinking?

SM: We have many law reform statutes which have not changed societal behaviour. I am preface my remarks with this because lawyers are products of society, right? And judges are from among the lawyers. So, if you look at the entire spectrum of the legal system, unless you start very early in imbibing constitu-

fraternity, dignity and right to life - have to be incalculable at a very young age, it has to evolve as a natural way of thinking?

SM: We have many law reform statutes which have not changed societal behaviour. I am preface my remarks with this because lawyers are products of society, right? And judges are from among the lawyers. So, if you look at the entire spectrum of the legal system, unless you start very early in imbibing constitu-

fraternity, dignity and right to life - have to be incalculable at a very young age, it has to evolve as a natural way of thinking?



tional values, you are not going to be able to find that happen. It has to start at home. You know, these things have happened for a long time. We are in a country where we do not allow the provisions of the Constitution to influence our personal behaviour. Change comes from the social milieu where you grow up in your houses, in your homes.

KDR: We have a mushrooming of law schools, different branches of law coming up. Is the focus largely on corporate, law as a money-spinner? Do you think that that the human aspect of law, the litigant as a sufferer, is on the wane?

SM: One can be pessimistic and say, therefore, the percentage of lawyers who stand up for the poor, who

stand up for rights, is very small. But I think the better way of looking at it is looking at the better examples in the present generation of lawyers, of cases and causes being taken up not for money, not for fame, but for belief in constitutional values. Look at Square Circle, it is so encouraging to see very young lawyers with complete commitment undertaking great risks in going to the prisons. These young lawyers are visiting prisons in the most remote corners of our country. Talking to prisoners who are on death row, who are serving life sentence, getting out their stories... Younger people are coming forward. It is not like a transformative change, but it is happening, and that is very encouraging.

KDR: There is a legend that you came to Delhi and you had function initially from a blue Maruti Omni van... Is it tough to be a first generation lawyer?

SM: So, in Chinese whispers what was a white Maruti van has become blue. That is the only change. I come from a middle class family. It is a privilege to be

a law student in this country, particularly because you do not find a country as diverse as India. Law helps you actually encounter society in ways that you will not encounter in other professions. It gives you an enormous opportunity to learn about your own society, to learn about the discriminatory practices in your society. When you are doing human rights work, when you are doing law and poverty work, you are also doing political work. You will have to find your way amidst all of this. The good news is there is enough space for all of us. There is enough space for the idealist lawyer, for the hard working lawyer, for the corporate lawyer, they can all rub shoulders.

KDR: Should laws be simplified?

SM: Absolutely. Legal English is jargon-heavy. Litigants often know their case better than lawyers, but cannot articulate it in court language. Much is lost in translation. We must simplify statutes and judgments so litigants understand why they won or lost.

01Mar. 'Constitutional thinking has to start from home' 'संवैधानिक सोच की शुरुआत घर से होनी चाहिए'

- **Indians do not allow constitutional provisions to influence personal behaviour, says former Orissa HC Chief Justice at *The Hindu Justice Unplugged 2026*; change comes from social milieu, he adds.**

भारतीय अपने व्यक्तिगत व्यवहार को प्रभावित करने के लिए संवैधानिक प्रावधानों को अनुमति नहीं देते, यह बात ओडिशा हाईकोर्ट के पूर्व मुख्य न्यायाधीश ने *The Hindu Justice Unplugged 2026* में कही; उन्होंने कहा कि बदलाव सामाजिक परिवेश से आता है।

- **We are in a country where we do not allow the provisions of the Constitution to influence our personal behaviour, S. Muralidhar, former Chief Justice of the Orissa High Court and now a senior advocate of the Supreme Court, said at *The Hindu Justice Unplugged* on Saturday.**

हम ऐसे देश में हैं जहाँ हम संविधान के प्रावधानों को अपने व्यक्तिगत व्यवहार को प्रभावित करने की अनुमति नहीं देते, यह बात एस. मुरलीधर, जो ओडिशा हाईकोर्ट के पूर्व मुख्य न्यायाधीश और अब सुप्रीम कोर्ट के वरिष्ठ अधिवक्ता हैं, ने शनिवार को *The Hindu Justice Unplugged* में कही।

- **In a conversation with Krishnadas Rajagopal, Legal Correspondent at *The Hindu*, the eminent jurist and author said change comes from the social milieu where you grow up in your houses, in your homes, while talking about how constitutional thinking has to start from home.**

***The Hindu* के लीगल संवाददाता कृष्णदास राजगोपाल से बातचीत में इस प्रसिद्ध न्यायविद और लेखक ने कहा कि बदलाव उस सामाजिक परिवेश से आता है जहाँ आप अपने घरों में बड़े होते हैं, और संवैधानिक सोच की शुरुआत घर से होनी चाहिए।**

- **He said it was up to each young lawyer to make the best of the initial years of struggle. उन्होंने कहा कि प्रत्येक युवा वकील पर निर्भर करता है कि वह अपने शुरुआती संघर्ष के वर्षों का सर्वोत्तम उपयोग करे।**
- **SM: Law is very much in everyone's mind, imagination. एसएम: कानून हर किसी के मन और कल्पना में मौजूद है।**
- **The amount of coverage of courts and lawyers in the last two decades has been phenomenal. पिछले दो दशकों में अदालतों और वकीलों की कवरेज असाधारण रही है।**
- **After the advent of social media, everyone gets to see some video clip of some lawyer in action or judge in action. सोशल मीडिया के आगमन के बाद हर किसी को किसी वकील या न्यायाधीश की कार्यवाही का वीडियो क्लिप देखने को मिलता है।**



- I think there is a greater realisation that **courts** are playing, whether we want it or not, a very **active role** in people's life.
मुझे लगता है कि अब यह अधिक समझ बन रही है कि **अदालतों**, चाहे हम चाहें या नहीं, लोगों के जीवन में बहुत **सक्रिय भूमिका** निभा रही हैं।
- Almost every aspect of **life in India** is governed by some **court order** or some **statute** or some **legal policy**.
भारत में जीवन का लगभग हर पहलू किसी **अदालती आदेश**, **कानून** या **कानूनी नीति** द्वारा नियंत्रित होता है।
- So everybody is interested in knowing what's happening in the **courts** and with **lawyers**.
इसलिए हर कोई यह जानने में रुचि रखता है कि **अदालतों** और **वकीलों** के साथ क्या हो रहा है।
- The one marked change I am finding, and this owes to the change in **legal education**, is the advent of the **national law schools** and products of the **national law schools** coming into the **Bar**.
एक प्रमुख बदलाव जो मैं देख रहा हूँ, वह **कानूनी शिक्षा** में बदलाव के कारण है, यानी **राष्ट्रीय विधि विश्वविद्यालयों** का आगमन और उनके छात्र **बार** में आ रहे हैं।
- Of course, some have been fired by **idealism** and are very clear that they want to **practice from day one**.
बेशक कुछ लोग **आदर्शवाद** से प्रेरित हैं और यह स्पष्ट है कि वे **पहले दिन से वकालत** करना चाहते हैं।
- But there is this **trend**.
लेकिन यह एक **प्रवृत्ति** है।
- There is also a trend of the **national law school products** coming back into **academia**.
राष्ट्रीय विधि विश्वविद्यालयों के छात्र **अकादमिक क्षेत्र** में लौटने की प्रवृत्ति भी दिख रही है।
- So, they are coming back to **teach** in the **national law schools**.
वे **राष्ट्रीय विधि विश्वविद्यालयों** में **पढ़ाने** के लिए वापस आ रहे हैं।
- Of course, the **divide** does exist.
बेशक यह **विभाजन** मौजूद है।
- But overall I would think it is improving the **quality** in an indirect way, also among the **Bench**, because many of these young **law students** are **interning with judges**.
लेकिन कुल मिलाकर यह अप्रत्यक्ष रूप से **गुणवत्ता** में सुधार कर रहा है, यहाँ तक कि **न्यायपालिका** में भी, क्योंकि कई **कानून के छात्र न्यायाधीशों के साथ इंटरनशिप** कर रहे हैं।
- Many of them are **law researchers for judges**.
उनमें से कई **न्यायाधीशों के लिए विधि शोधकर्ता** हैं।
- I know **judges** who are driven to perform better with many **young minds** around them.
मैं ऐसे **न्यायाधीशों** को जानता हूँ जो अपने आसपास कई **युवा दिमागों** के होने से बेहतर प्रदर्शन करने के लिए प्रेरित होते हैं।
- There is a whole building up of **public opinion** and driving **lawyers and judges** to get **homosexuality decriminalised**.
जनमत का निर्माण हुआ है जिसने **वकीलों और न्यायाधीशों को समलैंगिकता को अपराधमुक्त** करने की दिशा में प्रेरित किया।
- Even the latest **Sukanya Shanta judgment** which invalidated many provisions of **prison manuals** which permitted segregation of **prison on caste lines** or allocation of duties to **prisoners on caste lines**.
हाल का **सुकन्या शांता निर्णय** भी जिसमें **जेल मैनुअल** के कई प्रावधानों को निरस्त किया गया, जो **जाति के आधार पर जेल में अलगाव** या **कैदियों को जाति के आधार पर काम सौंपने** की अनुमति देते थे।
- There are many **young legal minds** interacting with **judges**.
कई **युवा कानूनी मस्तिष्क न्यायाधीशों के साथ संवाद** कर रहे हैं।
- Many of them I know within **chambers questioning judges**...
उनमें से कई **न्यायाधीशों से उनके कक्षों में सवाल** करते हैं।
- I am not a **pessimist**.
मैं **निराशावादी** नहीं हूँ।
- As you must have all realised by now.
जैसा कि आप अब तक समझ चुके होंगे।
- I am this **eternal optimist**.
मैं एक **सदैव आशावादी** व्यक्ति हूँ।
- And I think the **better days** are yet to come.
और मुझे लगता है कि **बेहतर दिन** अभी आने बाकी हैं।



- **KDR:** On the one side there are new branches of **law** opening up like **AI governance**, on the other, **courts** are seeing more and more cases with a **communal tinge**.
केडीआर: एक ओर **कानून** की नई शाखाएँ जैसे **AI गवर्नेंस** खुल रही हैं, दूसरी ओर **अदालतों** में **साम्प्रदायिक रंग** वाले मामलों की संख्या बढ़ रही है।
- Do you believe that the ideals enshrined in the **Constitution — equality, fraternity, dignity and right to life** — have to be inculcated at a very **young age**, it has to evolve as a natural way of **thinking**?
क्या आपको लगता है कि **संविधान** में निहित आदर्श — **समानता, बंधुत्व, गरिमा और जीवन का अधिकार** — को बहुत **कम उम्र** में सिखाया जाना चाहिए ताकि यह **सोच** का स्वाभाविक तरीका बन जाए?
- **SM:** We have many **law reform statutes** which have not changed **societal behaviour**.
एसएम: हमारे पास कई **कानून सुधार अधिनियम** हैं जिन्होंने **सामाजिक व्यवहार** को नहीं बदला है।
- I am prefacing my remarks with this because **lawyers** are products of **society**, right? मैं यह इसलिए कह रहा हूँ क्योंकि **वकील** भी **समाज** के उत्पाद होते हैं।
- And **judges** are from among the **lawyers**.
और **न्यायाधीश** भी **वकीलों** में से ही आते हैं।
- So, if you look at the entire spectrum of the **legal system**, unless you start very early in imbibing **constitutional values**, you are not going to be able to find that happen.
यदि आप पूरे **कानूनी तंत्र** को देखें तो जब तक आप बहुत जल्दी **संवैधानिक मूल्यों** को आत्मसात करना शुरू नहीं करते, यह संभव नहीं होगा।
- It has to **start at home**.
इसकी **शुरुआत घर से** होनी चाहिए।
- You know, these things have happened for a long time.
आप जानते हैं, ये चीजें लंबे समय से होती रही हैं।
- We are in a **country** where we do not allow the provisions of the **Constitution** to influence our **personal behaviour**.
हम ऐसे **देश** में हैं जहाँ हम **संविधान** के प्रावधानों को अपने **व्यक्तिगत व्यवहार** को प्रभावित करने नहीं देते।
- Change comes from the **social milieu** where you grow up in your houses, in your **homes**.
बदलाव उस **सामाजिक परिवेश** से आता है जहाँ आप अपने **घर** में बड़े होते हैं।
- **KDR:** We have a **mushrooming of law schools**, different **branches of law** coming up.
केडीआर: **लॉ स्कूलों** की संख्या तेजी से बढ़ रही है और **कानून की अलग-अलग शाखाएँ** सामने आ रही हैं।
- Is the focus largely on **corporate law**, law as a **money-spinner**?
क्या ध्यान मुख्य रूप से **कॉर्पोरेट कानून** पर है, यानी कानून को **पैसा कमाने का साधन** मानकर?
- Do you think that the **human aspect of law**, the **litigant as a sufferer**, is on the **wane**?
क्या आपको लगता है कि **कानून का मानवीय पहलू**, यानी **पीड़ित वादी**, अब **कम होता जा रहा है**?
- **SM:** One can be **pessimistic** and say, therefore, the percentage of **lawyers** who stand up for the **poor**, who stand up for **rights**, is very small.
एसएम: कोई **निराशावादी** होकर कह सकता है कि **गरीबों** और **अधिकारों** के लिए खड़े होने वाले **वकीलों** का प्रतिशत बहुत कम है।
- But I think the better way of looking at it is looking at the **better examples** in the present generation of **lawyers**.
लेकिन मुझे लगता है कि बेहतर तरीका यह है कि वर्तमान पीढ़ी के **वकीलों** के **अच्छे उदाहरणों** को देखा जाए।
- Of cases and causes being taken up not for **money**, not for **fame**, but for belief in **constitutional values**.
ऐसे मामले और मुद्दे जो **पैसे** या **प्रसिद्धि** के लिए नहीं बल्कि **संवैधानिक मूल्यों** में विश्वास के कारण उठाए जाते हैं।
- Look at **Square Circle**, it is so encouraging to see very **young lawyers** with complete **commitment** undertaking great **risks** in going to the **prisons**.
Square Circle को देखिए, यह बहुत प्रेरणादायक है कि **युवा वकील** पूर्ण **समर्पण** के साथ **जेलों** में जाकर बड़े **जोखिम** उठा रहे हैं।
- These **young lawyers** are visiting **prisons** in the most **remote corners** of our **country**.
ये **युवा वकील** हमारे **देश** के सबसे **दूरदराज़ क्षेत्रों** की **जेलों** का दौरा कर रहे हैं।
- Talking to **prisoners** who are on **death row**, who are serving **life sentence**, getting out their **stories**...
वे **मृत्युदंड** या **आजीवन कारावास** की सजा भुगत रहे **कैदियों** से बात कर रहे हैं और उनकी **कहानियाँ** सामने ला रहे हैं।



- **Younger people** are coming forward.
युवा लोग आगे आ रहे हैं।
- It is not like a **transformative change**, but it is happening, and that is very **encouraging**.
यह कोई **क्रांतिकारी परिवर्तन** नहीं है, लेकिन यह हो रहा है और यह बहुत **उत्साहजनक** है।
- **KDR**: There is a legend that you came to **Delhi** and you had function initially from a **blue Maruti Omni van**...
केडीआर: एक कहानी है कि आप **दिल्ली** आए और आपने शुरुआत में एक **नीली मारुति ओमनी वैन** से काम किया...
- Is it tough to be a **first generation lawyer**?
क्या **पहली पीढ़ी के वकील** होना कठिन है?
- **SM**: So, in **Chinese whispers** what was a **white Maruti van** has become **blue**.
एसएम: **Chinese whispers** में जो **सफेद मारुति वैन** थी वह **नीली** बन गई।
- That is the only **change**.
यही एकमात्र **बदलाव** है।
- I come from a **middle class family**.
मैं एक **मध्यम वर्गीय परिवार** से आता हूँ।
- It is a **privilege** to be a **law student** in this **country**, particularly because you do not find a **country as diverse as India**.
इस **देश** में **कानून का छात्र** होना एक **विशेषाधिकार** है, खासकर इसलिए क्योंकि **भारत** जैसा **विविध देश** कहीं और नहीं मिलता।
- **Law** helps you actually encounter **society** in ways that you will not encounter in other **professions**.
कानून आपको **समाज** से उस तरह जुड़ने में मदद करता है जैसा अन्य **पेशों** में संभव नहीं है।
- It gives you an enormous **opportunity** to learn about your own **society**, to learn about the **discriminatory practices** in your society.
यह आपको अपने **समाज** के बारे में और उसमें मौजूद **भेदभावपूर्ण प्रथाओं** के बारे में सीखने का बड़ा **अवसर** देता है।
- When you are doing **human rights work**, when you are doing **law and poverty work**, you are also doing **political work**.
जब आप **मानवाधिकार कार्य** करते हैं या **कानून और गरीबी** से जुड़े कार्य करते हैं, तो आप **राजनीतिक कार्य** भी कर रहे होते हैं।
- You will have to find your **way** amidst all of this.
आपको इन सबके बीच अपना **रास्ता** खोजना होगा।
- The good news is there is **enough space for all of us**.
अच्छी खबर यह है कि **हम सबके लिए पर्याप्त जगह** है।
- There is enough space for the **idealist lawyer**, for the **hard working lawyer**, for the **corporate lawyer**, they can all **rub shoulders**.
आदर्शवादी वकील, मेहनती वकील और कॉर्पोरेट वकील — सभी के लिए जगह है और वे साथ-साथ काम कर सकते हैं।
- **KDR**: Should **laws** be **simplified**?
केडीआर: क्या **कानूनों** को सरल बनाया जाना चाहिए?
- **SM**: Absolutely.
एसएम: बिल्कुल।
- **Legal English** is **jargon-heavy**.
कानूनी अंग्रेज़ी में बहुत अधिक **जटिल शब्दावली** होती है।
- **Litigants** often know their **case** better than **lawyers**, but cannot articulate it in **court language**.
वादकारी अक्सर अपने **मामले** को **वकीलों** से बेहतर जानते हैं, लेकिन उसे **अदालती भाषा** में व्यक्त नहीं कर पाते।
- Much is lost in **translation**.
अनुवाद में बहुत कुछ खो जाता है।
- We must **simplify statutes and judgments** so **litigants** understand why they **won or lost**.
हमें **कानूनों और निर्णयों** को सरल बनाना चाहिए ताकि **वादकारी** समझ सकें कि वे **क्यों जीते या हारे**।



GS Paper II: Governance,

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01Mar Why is the NEP undergrad course in chaos?
NEP का अंडरग्रेजुएट कोर्स अव्यवस्था में क्यों है?

Why is the NEP undergrad course in chaos?

What are the challenges? Why are both students and teachers struggling with the fourth year schedule? Is there extra funding from UGC for the fourth year programme? What about infrastructure? Why are there frequent changes in guidelines? What lies ahead?

GS II: Governance

MOB

Priscilla Jebaraj

The story so far:

India's fledgling four-year undergraduate programme, recommended as part of the National Education Policy (NEP), 2020 has reached a critical point, with the first students who opted for four-year degrees now in their final semester. The roll-out has been chaotic, as students and faculty cope with changing guidelines, uncertainty regarding learning outcomes, and a severe shortage of infrastructure, funding, and faculty.

What is the four year UG programme?

The NEP 2020 proposed a complete overhaul of higher education in India. Among the changes recommended was an expansion of the country's traditional three-year bachelors degree structure into four years, aligned with global standards, with an expanded curriculum intended to focus on flexibility, interdisciplinary learning, exposure to research, and skill development. Students would have multiple entry and exit options. After one year, they could get a certificate; after two years, a diploma; after three years, a Bachelor's degree; and after four years, a Bachelor's degree with honours, or options such as honours with a research or entrepreneurship focus.

'Students do not have sufficient training or access to proper material for their fourth year of research'

The University Grants Commission (UGC) issued its guidelines for this model, as part of its Curriculum and Credit Framework, in December 2022. Earlier that year, however, several universities had already started rolling out four-year programmes from the 2022-23 academic year, as part of the implementation of NEP, including top central universities such as Delhi University, Aligarh Muslim University (AMU), and Ambedkar University. There are thousands of students in these institutions now in their final semester of study. The Karnataka government also announced its own implementation of NEP, and launched four-year programmes across the State, in public and private institutions. A year later, the Union government announced that 105 universities would enrol students into four-year programmes in 2023-24, including 19 central universities, 22 State universities, 18 State private universities, and over 40 deemed-to-be universities.

What have been the challenges?

In Delhi University alone, 23,337 students are now in their fourth year, according to K. Ratnabali, Dean of Academic Affairs. About 13,000 of them have chosen to complete a dissertation or thesis, so that they can earn an honours with research degree. The rest of the students will complete extra coursework in their fourth year, including skill-based programmes, while a few hundred have opted for an entrepreneurship focus, or a translation or other academic projects. "The four-year Undergraduate Programme in its current form represents a mockery," says Maya John, an assistant professor at Jesus and Mary College, who is a member of DU's Academic Council. She says students are struggling with "unreasonable research outcomes" dictated by the university authorities, including the requirement for Scopus-indexed journal publications and presentations in international or national conferences. Dr. Ratnabali says this requirement has now been diluted, with the university willing to accept a paper presentation or submission, without actual publication. Students, however, complain that the constant changes in guidelines from the university, and individual

college departments have often been contradictory and disconcerting.

Students do not have sufficient training or access to proper materials for their fourth year of research, says Madhuri Sharma, who is part of the history faculty at Bharathi College, noting that undergraduates are not allowed research access to the Teen Murti library, the National Archives, or the National Museum, and have only restricted access even to DU's Central Reference Library. Moreover, "teachers are also overloaded, research supervision is not counted as part of their working hours," says Dr. Sharma.

"At AMU, over 90% of students stayed on for the fourth year in many subjects, leading to immense pressure on faculty and infrastructure," says Aftab Alam, a member of the Academic Council at AMU. "For science programmes, we simply do not have the requisite lab facilities to support undergraduate research. Faculty are continuously appealing for infrastructure and additional teachers, but there is no extra funding from UGC."

"The fourth year programme is an additional burden to both the student and the exchequer, simply to ape a western model. There is a commercial impetus from private universities, who simply want to get one more year of fees," says Navneet Sharma, an education professor at the Central University of Himachal Pradesh, who was also a member of the Karnataka State Education Policy task force that recommended a return to the traditional three-year degree programme in the State from 2024-2025 onwards. "Keeping a four-year degree programme would potentially reduce access to undergraduate education for the poor, the socially disadvantaged groups such as Scheduled Castes, Scheduled Tribes, women and students from rural areas," the Karnataka Education department said in its order to abandon the four-year programme.

What changes may help the next batch?

Dr. Alam suggested that UGC take feedback from faculty and students in the trenches of the four-year programme to adapt its guidelines to ground realities. Dr. Ratnabali agrees that more infrastructure, especially laboratories, are needed to make the four-year programme a success, and recommends that colleges apply for a HEFA (Higher Education Financing Agency) loan from the government before the start of the next academic year, and also seek funding from research agencies.



ISTOCKPHOTO

01Mar. Why is the NEP undergrad course in chaos? NEP का अंडरग्रेजुएट कोर्स अव्यवस्था में क्यों है?

- What are the **challenges**?
चुनौतियाँ क्या हैं?
- Why are both **students and teachers** struggling with the **fourth year schedule**?
छात्र और शिक्षक दोनों चौथे वर्ष के शेड्यूल से क्यों जूझ रहे हैं?
- Is there extra **funding from UGC** for the **fourth year programme**?
क्या चौथे वर्ष के कार्यक्रम के लिए UGC से अतिरिक्त फंडिंग है?
- What about **infrastructure**?
इन्फ्रास्ट्रक्चर का क्या हाल है?
- Why are there frequent **changes in guidelines**?
दिशानिर्देशों में बार-बार बदलाव क्यों हो रहे हैं?



- What lies ahead?
आगे क्या होने वाला है?
- **India's fledgling four-year undergraduate programme**, recommended as part of the **National Education Policy (NEP), 2020**, has reached a **critical point**, with the first students who opted for **four-year degrees** now in their **final semester**.
भारत का प्रारंभिक चार-वर्षीय स्नातक कार्यक्रम, जिसे राष्ट्रीय शिक्षा नीति (NEP) 2020 के हिस्से के रूप में सुझाया गया था, अब महत्वपूर्ण मोड़ पर पहुँच गया है, क्योंकि चार-वर्षीय डिग्री चुनने वाले पहले छात्र अब अपने अंतिम सेमेस्टर में हैं।
- The roll-out has been **chaotic**, as **students and faculty** cope with **changing guidelines, uncertainty regarding learning outcomes**, and a severe shortage of **infrastructure, funding, and faculty**.
इसका कार्यान्वयन अव्यवस्थित रहा है क्योंकि छात्र और शिक्षक बदलते दिशानिर्देशों, सीखने के परिणामों की अनिश्चितता, और इन्फ्रास्ट्रक्चर, फंडिंग तथा शिक्षकों की भारी कमी से जूझ रहे हैं।

What is the four year UG programme?

चार-वर्षीय स्नातक कार्यक्रम क्या है?

- The **NEP 2020** proposed a complete **overhaul of higher education in India**.
NEP 2020 ने भारत में उच्च शिक्षा की पूरी व्यवस्था में व्यापक बदलाव का प्रस्ताव दिया।
- Among the changes recommended was an expansion of the country's traditional **three-year bachelors degree structure** into **four years**, aligned with **global standards**, with an expanded curriculum intended to focus on **flexibility, interdisciplinary learning, exposure to research, and skill development**.
सुझाए गए बदलावों में देश की पारंपरिक **तीन-वर्षीय स्नातक डिग्री संरचना** को **चार वर्ष** तक बढ़ाना शामिल था, जो **वैश्विक मानकों** के अनुरूप हो, और जिसका विस्तारित पाठ्यक्रम **लचीलापन, बहुविषयक शिक्षा, शोध का अनुभव और कौशल विकास** पर केंद्रित हो।
- Students would have multiple **entry and exit options**.
छात्रों के पास कई **प्रवेश और निकास विकल्प** होंगे।
- After one year, they could get a **certificate**; after two years, a **diploma**; after three years, a **Bachelor's degree**; and after four years, a **Bachelor's degree with honours**, or options such as **honours with a research or entrepreneurship focus**.
एक वर्ष के बाद वे **सर्टिफिकेट** प्राप्त कर सकते हैं; दो वर्ष के बाद **डिप्लोमा**; तीन वर्ष के बाद **स्नातक डिग्री**; और चार वर्ष के बाद **ऑनर्स के साथ स्नातक डिग्री**, या **शोध या उद्यमिता पर केंद्रित ऑनर्स** जैसे विकल्प प्राप्त कर सकते हैं।
- The **University Grants Commission (UGC)** issued its **guidelines** for this model, as part of its **Curriculum and Credit Framework**, in **December 2022**.
विश्वविद्यालय अनुदान आयोग (UGC) ने **दिसंबर 2022** में अपने **पाठ्यक्रम और क्रेडिट फ्रेमवर्क** के हिस्से के रूप में इस मॉडल के लिए **दिशानिर्देश** जारी किए।
- Earlier that year, however, several **universities** had already started rolling out **four-year programmes** from the **2022-23 academic year**, as part of the implementation of **NEP**, including top **central universities** such as **Delhi University, Aligarh Muslim University (AMU), and Ambedkar University**.
हालाँकि उसी वर्ष पहले ही कई **विश्वविद्यालयों** ने **2022-23 शैक्षणिक वर्ष** से **चार-वर्षीय कार्यक्रम** शुरू कर दिए थे, जो **NEP** के कार्यान्वयन का हिस्सा थे, जिनमें प्रमुख **केंद्रीय विश्वविद्यालय** जैसे **दिल्ली विश्वविद्यालय, अलीगढ़ मुस्लिम विश्वविद्यालय (AMU) और अंबेडकर विश्वविद्यालय** शामिल हैं।
- There are thousands of **students** in these institutions now in their **final semester of study**.
इन संस्थानों में अब हजारों **छात्र** अपने **अंतिम सेमेस्टर** में हैं।
- The **Karnataka government** also announced its own implementation of **NEP**, and launched **four-year programmes** across the **State**, in **public and private institutions**.
कर्नाटक सरकार ने भी **NEP** के अपने कार्यान्वयन की घोषणा की और पूरे राज्य में **सरकारी और निजी संस्थानों** में **चार-वर्षीय कार्यक्रम** शुरू किए।
- A year later, the **Union government** announced that **105 universities** would enrol students into **four-year programmes** in **2023-24**, including **19 central universities, 22 State universities, 18 State private universities, and over 40 deemed-to-be universities**.
एक वर्ष बाद **केंद्र सरकार** ने घोषणा की कि **2023-24** में **105 विश्वविद्यालय** छात्रों को **चार-वर्षीय कार्यक्रमों**



में प्रवेश देंगे, जिनमें 19 केंद्रीय विश्वविद्यालय, 22 राज्य विश्वविद्यालय, 18 राज्य निजी विश्वविद्यालय और 40 से अधिक डीम्ड विश्वविद्यालय शामिल हैं।

What have been the challenges? चुनौतियाँ क्या रही हैं?

- In **Delhi University** alone, **23,337 students** are now in their **fourth year**, according to **K. Ratnabali, Dean of Academic Affairs**.
केवल दिल्ली विश्वविद्यालय में ही 23,337 छात्र अब चौथे वर्ष में हैं, यह जानकारी शैक्षणिक मामलों की डीन के. रत्नाबली ने दी।
- About **13,000** of them have chosen to complete a **dissertation or thesis**, so that they can earn an **honours with a research degree**.
इनमें से लगभग 13,000 छात्रों ने डिसेटेशन या थीसिस पूरा करने का विकल्प चुना है ताकि वे रिसर्च के साथ ऑनर्स डिग्री प्राप्त कर सकें।
- The rest of the students will complete extra **coursework** in their **fourth year**, including **skill-based programmes**, while a few hundred have opted for an **entrepreneurship focus**, or a **translation or other academic projects**.
बाकी छात्र अपने चौथे वर्ष में अतिरिक्त कोर्सवर्क पूरा करेंगे, जिसमें कौशल आधारित कार्यक्रम शामिल हैं, जबकि कुछ सौ छात्रों ने उद्यमिता, अनुवाद या अन्य शैक्षणिक परियोजनाएँ चुनी हैं।
- “The **four-year Undergraduate Programme** in its current form represents a **mockery**,” says **Maya John**, an **assistant professor at Jesus and Mary College**, who is a member of **DU’s Academic Council**.
जीसस एंड मैरी कॉलेज की सहायक प्रोफेसर माया जॉन, जो DU अकादमिक परिषद की सदस्य भी हैं, कहती हैं कि वर्तमान स्वरूप में चार-वर्षीय स्नातक कार्यक्रम एक मजाक जैसा है।
- She says **students** are struggling with “**unreasonable research outcomes**” dictated by the **university authorities**, including the requirement for **Scopus-indexed journal publications** and presentations in **international or national conferences**.
उनका कहना है कि विश्वविद्यालय प्रशासन द्वारा तय किए गए “अवास्तविक शोध परिणामों” के कारण छात्र संघर्ष कर रहे हैं, जिनमें स्कोपस-इंडेक्स जर्नल में प्रकाशन और राष्ट्रीय या अंतरराष्ट्रीय सम्मेलनों में प्रस्तुति की आवश्यकता शामिल है।
- **Dr. Ratnabali** says this requirement has now been **diluted**, with the **university** willing to accept a **paper presentation or submission**, without actual **publication**.
डॉ. रत्नाबली कहती हैं कि अब इस आवश्यकता को कम कर दिया गया है, और विश्वविद्यालय अब केवल पेपर प्रस्तुति या सबमिशन स्वीकार करने को तैयार है, भले ही उसका प्रकाशन न हुआ हो।
- Students, however, complain that the constant **changes in guidelines** from the **university** and **college departments** have often been **contradictory and disconcerting**.
हालाँकि छात्र शिकायत करते हैं कि विश्वविद्यालय और कॉलेज विभागों द्वारा दिशानिर्देशों में लगातार बदलाव अक्सर विरोधाभासी और परेशान करने वाले रहे हैं।
- Students do not have sufficient **training** or access to proper **materials** for their **fourth year of research**, says **Madhuri Sharma**, who is part of the **history faculty at Bharathi College**.
भारती कॉलेज की इतिहास संकाय सदस्य मधुरी शर्मा कहती हैं कि छात्रों के पास चौथे वर्ष के शोध के लिए पर्याप्त प्रशिक्षण या उचित सामग्री तक पहुँच नहीं है।
- She notes that **undergraduates** are not allowed research access to the **Teen Murti library**, the **National Archives**, or the **National Museum**, and have only restricted access even to **DU’s Central Reference Library**.
वे बताती हैं कि स्नातक छात्रों को तीन मूर्ति लाइब्रेरी, राष्ट्रीय अभिलेखागार या राष्ट्रीय संग्रहालय में शोध की अनुमति नहीं है, और DU की केंद्रीय संदर्भ लाइब्रेरी तक भी केवल सीमित पहुँच है।
- Moreover, **teachers** are also **overloaded**, and **research supervision** is not counted as part of their **working hours**, says **Dr. Sharma**.
डॉ. शर्मा कहती हैं कि शिक्षक भी अत्यधिक कार्यभार से दबे हैं और शोध पर्यवेक्षण को उनके कार्य समय का हिस्सा नहीं माना जाता।
- “At **AMU**, over **90% of students** stayed on for the **fourth year** in many subjects, leading to immense pressure on **faculty and infrastructure**,” says **Aftab Alam**, a member of the **Academic Council at AMU**.



AMU की अकादमिक परिषद के सदस्य आफताब आलम के अनुसार कई विषयों में 90% से अधिक छात्र चौथे वर्ष में बने रहे, जिससे शिक्षकों और इन्फ्रास्ट्रक्चर पर भारी दबाव पड़ा।

- “For science programmes, we simply do not have the requisite lab facilities to support undergraduate research.”
उन्होंने कहा कि विज्ञान कार्यक्रमों के लिए स्नातक शोध का समर्थन करने हेतु पर्याप्त प्रयोगशाला सुविधाएँ नहीं हैं।
- Faculty are continuously appealing for infrastructure and additional teachers, but there is no extra funding from UGC.
शिक्षक लगातार इन्फ्रास्ट्रक्चर और अतिरिक्त शिक्षकों की मांग कर रहे हैं, लेकिन UGC से कोई अतिरिक्त फंडिंग नहीं है।
- “The fourth year programme is an additional burden to both the student and the exchequer, simply to ape a western model,” says Navneet Sharma, an education professor at the Central University of Himachal Pradesh.
हिमाचल प्रदेश केंद्रीय विश्वविद्यालय के शिक्षा प्रोफेसर नवनीत शर्मा कहते हैं कि चौथा वर्ष कार्यक्रम केवल पश्चिमी मॉडल की नकल करने के लिए छात्र और सरकारी खजाने दोनों पर अतिरिक्त बोझ है।
- There is a commercial impetus from private universities, who simply want to get one more year of fees.
निजी विश्वविद्यालयों की ओर से भी व्यावसायिक प्रेरणा है क्योंकि वे केवल एक अतिरिक्त वर्ष की फीस प्राप्त करना चाहते हैं।
- He was also a member of the Karnataka State Education Policy task force that recommended a return to the traditional three-year degree programme in the State from 2024-2025 onwards.
वे कर्नाटक राज्य शिक्षा नीति टास्क फोर्स के सदस्य भी थे जिसने 2024-2025 से राज्य में पारंपरिक तीन-वर्षीय डिग्री कार्यक्रम पर लौटने की सिफारिश की।
- “Keeping a four-year degree programme would potentially reduce access to undergraduate education for the poor and socially disadvantaged groups, such as Scheduled Castes, Scheduled Tribes, women and students from rural areas,” the Karnataka Education Department said in its order.
कर्नाटक शिक्षा विभाग ने अपने आदेश में कहा कि चार-वर्षीय डिग्री कार्यक्रम बनाए रखने से गरीब और सामाजिक रूप से वंचित समूहों, जैसे अनुसूचित जाति, अनुसूचित जनजाति, महिलाएँ और ग्रामीण छात्र, के लिए स्नातक शिक्षा तक पहुंच कम हो सकती है।
- What changes may help the next batch?
अगले बैच के लिए कौन से बदलाव मदद कर सकते हैं?
- Dr. Alam suggested that UGC take feedback from faculty and students in the trenches of the four-year programme to adapt its guidelines to ground realities.
डॉ. आलम ने सुझाव दिया कि UGC को चार-वर्षीय कार्यक्रम में काम कर रहे शिक्षकों और छात्रों से फीडबैक लेकर अपने दिशानिर्देशों को वास्तविक परिस्थितियों के अनुसार ढालना चाहिए।
- Dr. Ratnabali agrees that more infrastructure, especially laboratories, are needed to make the four-year programme a success.
डॉ. रत्नाबली सहमत हैं कि चार-वर्षीय कार्यक्रम को सफल बनाने के लिए अधिक इन्फ्रास्ट्रक्चर, विशेषकर प्रयोगशालाओं, की आवश्यकता है।
- She recommends that colleges apply for a HEFA (Higher Education Financing Agency) loan from the government before the start of the next academic year, and also seek funding from research agencies.
उन्होंने सुझाव दिया कि अगले शैक्षणिक वर्ष से पहले कॉलेजों को सरकार से HEFA (Higher Education Financing Agency) ऋण के लिए आवेदन करना चाहिए और शोध एजेंसियों से फंडिंग भी प्राप्त करनी चाहिए।

GS Paper II: International Relations

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01 March 2026

01Mar

Chronicles of a war foretold

पहले से बताये गये युद्ध की गाथा



Chronicles of a war foretold

Iran vs Israel

The rivalry between the two countries that goes back to the 1979 revolution has escalated into a full-blown war, shaking entire West Asia

Stanly Johny

In July 1977, Mohammad Reza Pahlavi, the Shah of Iran, sent Lt. Gen. Hassan Toufanian, his Deputy Minister of War and Armaments, to Israel to hold secret talks with the newly formed Likud government of Menachem Begin. Three months earlier, the Shah had signed six 'oil for arms' contracts with Shimon Peres, the acting Prime Minister in the previous interim government. One of the contracts, code-named 'Flower', sought Israel to modify its advanced surface-to-surface missiles and sell them to Iran. Gen. Toufanian's mission was to ensure that the change of government in Israel would not affect the deal. He met Maj. Gen. Ezer Weizman, Defence Minister in the Begin government, and both of them agreed to build a military co-production line – Israel was to provide the technical know-how and Iran the finances and test sites. As part of it, Israel promised to supply Iran with ballistic surface-to-surface missiles with a range of 700 km that could carry nuclear warheads, writes journalist Ronen Bergman in his book, *The Secret War with Iran*.

But within two years, the relationship had turned upside down. The Shah was toppled by nationwide protests. Ayatollah Ruhollah Khomeini, a leading Shia cleric, arrived in Tehran in February 1979 from exile in Paris. Shia Islamists, under Khomeini's leadership, took over the reins of the country and turned it into an Islamic Republic – a semidemocratic, theocratic state. The new Iran declared "liberation" of Jerusalem one of its key objectives. At the U.S. Embassy in Tehran, 66 Americans, including diplomats and civilian personnel, were taken hostage by revolutionaries. For revolutionary Iran, America, which had orchestrated the 1953 coup against nationalist Prime Minister Mohammad Mossaddegh and had been the principal backer of the Shah, was the "great Satan", while Israel, the occupier of Palestine, was the "little Satan".

The revolution did not just transform Iran; it was also a geopolitical earthquake. If the Shah's Iran had been one of the pillars of the U.S.-Israel alliance, Khomeini's Iran emerged as this alliance's top nemesis. Forty-seven years later, that enmity has escalated into a full-blown war, with Israel and the U.S. launching air strikes in Iran and Tehran retaliating against Israel and American bases in the region.

A new rival
 The Islamic Republic was born in a region that was already witnessing new currents in Arab-Israeli relations. In 1978, Egypt became the first Arab country to recognise Israel, in return for the Sinai Peninsula which Israel had seized in the 1967 War. Arab countries, though still supportive of the Palestinian cause, were moving away from the phase of confrontation with Israel. For Shia revolutionary Iran, its support for Palestine was not only a religious duty but also a practical foreign policy move aimed at winning over the Muslim world, bridging the Shia-Sunni divide. Israel, which established conventional deterrence against Arab countries in the region, saw a new enemy emerging. The rivalry between Israel and Iran has shaped West Asia's geopolitics ever since.

With support from the U.S. and other Western partners, Israel, a nuclear-armed country, has emerged as the most powerful military in the region. On the other side, Iran, which faced American sanctions immediately after the revolution, turned to building and supporting a network of militias. In the early 1980s, Iran helped create Hezbollah, a Lebanese Shia movement. And in the 1990s, it doubled down on its support for Hamas and the Islamic Jihad. When the Oslo process, which promised a two-state solution to the Palestine question, collapsed in the latter half of the 1990s, Hamas emerged as a major pillar of the Palestinian resistance. This, in turn, turned Iran



Critical hit An incoming projectile explodes over the water in the bay of Haifa, off of the northern Israeli coastal city on Saturday. AFP

into a key player in the Israel-Palestine crisis. In southern Lebanon, Israel found it increasingly difficult to continue its occupation amid Hezbollah's resistance. Iran provided money, training and weapons to Hezbollah through Syria, which was ruled by the Assad family. In 2000, after 18 years of occupation, Israel was forced to withdraw from southern Lebanon, and Hezbollah claimed that it was the first Arab force to defeat the Israeli army. In 2006, Israel attacked Lebanon again, but Hezbollah survived the month-long campaign.

Regional influence
 This strategy of forward defence appeared to be working in Iran's favour in the early 2000s. Consider, for example, at the 2003 U.S. invasion of Iraq. Before that invasion, U.S. President George W. Bush had grouped Iran with Iraq and North Korea as part of an 'Axis of Evil'. There was much speculation that the Bush administration would turn to Iran once the Iraq war was over. But the fall of Saddam Hussein, the Iraqi leader who attacked Iran in 1980, removed a critical buffer between the Persian Gulf kingdoms and Iran.

When Iraq, a Shia-majority country, held elections after the fall of Saddam's regime, Shia parties with historical ties to Tehran emerged as the new ruling elite. When Iraq descended into a sectarian civil war between Sunni jihadists and Shia militias, the U.S. became deeply entangled in the conflict. Iran's influence stretched along the so-called Shia crescent, from Tehran, through Baghdad and Damascus all the way to southern Lebanon, on Israel's northern border. At home, Iran also advanced its nuclear programme. But this ascent was short-lived. Arab-Spring protests, which broke out in late 2010 and shook several regimes in the region, marked the beginning of

On February 27, Oman's Foreign Minister said a deal between the U.S. and Iran was within reach: a day later, the U.S. and Israel launched a joint strike

the decline of Iran's influence. In Syria, protests against the regime of President Bashar al-Assad threatened to cut short Iran's regional influence. Mr. Assad's Syria was Iran's only regional state ally. It was also a vital link between Hezbollah and Tehran. If the regime fell, it would cut off the link, weakening both Iran and Hezbollah.

Iran knew what was at stake, and it did not hesitate for a moment in helping the Syrian government. Thousands of Hezbollah fighters crossed the border into Syria to fight alongside the regime forces. Iran mobilised Shia fighters from across the region and sent them to Syria. In September 2015, Russian President Vladimir Putin decided to send Russian special forces and fighter jets to Syria in defence of the government. With help from Russia, Iran and Hezbollah, the Assad regime turned the tide of the civil war and recaptured most of the lost territory.

Sunni countries in West Asia as well as their Western partners who initially called for Mr. Assad's departure, saw their policy backfire after the rise of the Islamic State.

The Islamic State practically erased the border between Iraq and Syria and created a proto-state, stretching from Raqqa in Syria to Mosul in Iraq. For Iran, the Islamic State represented a two-way threat. Its rise threatened to unravel two of Iran's friendly states in West Asia – Iraq and Syria. Two, the extremist, sectarian Salaf-jihadist ideology, which calls Shia "rejectionists" of faith, was an existential threat. At this point, Iran and the U.S. found common ground in defeating the

The strike and retaliation

The United States and Israel carried out a joint attack on Iran. Tehran responded with retaliatory strikes on U.S. assets and bases in neighbouring countries.



Iran launched retaliatory strikes against Israel, and U.S. bases in the UAE, Bahrain, Kuwait, Saudi Arabia, Qatar and Jordan

Iran, keep Arab countries under check, and push the Palestinian question back to the margins of the region.

In Syria, the collapse of the Assad regime in December 2024, and the rise of Abu Mohammed al-Golani (Ahmed al-Sharaa), a former al-Qaeda jihadist, marked a tactical victory for Israel. A weakened Hezbollah was further isolated, and Iran's forward defence suddenly looked porous. Iran lay vulnerable to external threats. Then it was only a matter of time before a direct attack against Iran. Sensing danger, Iran started indirect talks with the Trump administration. Iran's message was that it was ready to cut a deal over its nuclear programme. Its political and security leaders repeatedly said it was not seeking to build a nuclear bomb. But on June 13, two days ahead of the planned sixth round of talks between Washington and Tehran, Israel started bombing Iran. A few days later, the U.S. joined the war, attacking Iran's key nuclear facilities. After 12 days of fighting, both sides agreed to a ceasefire. Mr. Trump claimed that he had "obliterated" Iran's nuclear programme and Mr. Netanyahu declared a "historic victory". But the crisis was far from over.

Iran wants Iran to give up its nuclear programme, end its missile production and stop supporting non-state militias in the region. In other words, Iran wants the total disarmament of Iran. Iran was open to a deal on its nuclear programme but would not discuss other issues. The Trump administration's officials, including Marco Rubio, the Secretary of State, also backed the Israeli demands, saying its nuclear programme would not meet these objectives by bringing about regime change in Tehran and installing a new friendly regime.

Road to chaos
 In January 2026, when protests broke out in Iran over a falling currency, Mr. Trump quickly offered his support for the protesters. He said the U.S. was "locked and loaded". Protests and riots spread across Iranian provinces in the first half of January. Iranian authorities blamed foreign agents for triggering "riots and terrorism". Mossad, Israel's intelligence unit, also claimed that its agents were "on the field" in Iran. On January 8th, Iranian authorities crushed the rebellion. At least 3,000 people were killed. A tense calm prevailed in Iran after the crackdown, but external threats mounted.

Mr. Trump started building America's largest military presence in the region since the 2003 Iraq war, while diplomats from both sides met at least three times. Iran claimed progress after each meeting, but the U.S. said gaps remained. On February 27, Oman's Foreign Minister Hamad Al Busaidi told CNBC that a deal was within reach. He said Iran agreed not to make a nuclear weapon and not to stockpile nuclear material. "If the ultimate objective is to ensure forever that Iran cannot have a nuclear bomb, I think we have cracked that problem through these negotiations by agreeing [on] a very important breakthrough that has never been achieved anytime before," Al Busaidi said.

A few hours later, Israel and the U.S. started bombing Iran, targeting the country's top leadership as well as government and military installations. Israel called it a "pre-emptive strike" and said it "would continue as long as necessary". Mr. Trump, indicating that regime change was his goal, told journalists: "The hour of your freedom is at hand". Iran, which rapidly retaliated by firing ballistic missiles at Israel and at least five American bases in the region, said: "This is a national struggle imposed on us". This attack, Iran's Foreign Ministry said, "could mark the beginning of the end for international institutions and norms." America and Israel seek regime change and a permanent shift in the balance of power in West Asia. For the Islamic Republic, this is a war of survival.

THE GIST

- Israel wants Iran to give up its nuclear programme, end its missile production and stop supporting non-state militias in the region
- Iran was open to a deal on its nuclear programme but would not discuss other issues
- The only way Israel could meet these objectives is by bringing about regime change in Tehran and installing a new friendly regime

01Mar. Chronicles of a war foretold पहले से बताये गये युद्ध की गाथा

- The rivalry between the two countries that goes back to the 1979 revolution has escalated into a full-blown war, shaking entire West Asia.



दोनों देशों के बीच 1979 की क्रांति से शुरू हुई प्रतिद्वंद्विता अब पूर्ण युद्ध में बदल गई है, जिससे पूरे पश्चिम एशिया में हलचल मच गई है।

- In July 1977, Mohammad Reza Pahlavi, the Shah of Iran, sent Lt. Gen. Hassan Toufanian, his Deputy Minister of War and Armaments, to Israel to hold secret talks with the newly formed Likud government of Menachem Begin.
जुलाई 1977 में ईरान के शाह मोहम्मद रज़ा पहलवी ने अपने युद्ध और हथियारों के उपमंत्री लेफ्टिनेंट जनरल हसन तौफानियन को इज़राइल भेजा ताकि वे मेनेखेम बेगिन की नई बनी लिकुड सरकार से गुप्त वार्ता कर सकें।
- Three months earlier, the Shah had signed six 'oil for arms' contracts with Shimon Peres, the acting Prime Minister in the previous interim government.
तीन महीने पहले शाह ने पिछली अंतरिम सरकार के कार्यवाहक प्रधानमंत्री शिमोन पेरेस के साथ छह 'तेल के बदले हथियार' समझौते किए थे।
- One of the contracts, code-named 'Flower', sought Israel to modify its advanced surface-to-surface missiles and sell them to Iran.
इनमें से एक समझौता, जिसका कोड नाम 'फ्लावर' था, में इज़राइल से अपनी उन्नत सतह से सतह पर मार करने वाली मिसाइलों को संशोधित कर ईरान को बेचने की मांग की गई थी।
- Gen. Toufanian's mission was to ensure that the change of government in Israel would not affect the deal.
जनरल तौफानियन का मिशन यह सुनिश्चित करना था कि इज़राइल में सरकार परिवर्तन इस समझौते को प्रभावित न करे।
- He met Maj. Gen. Ezer Weizman, Defence Minister in the Begin government, and both of them agreed to build a military co-production line — Israel was to provide the technical know-how and Iran the finances and test sites.
उन्होंने बेगिन सरकार के रक्षा मंत्री मेजर जनरल एज़र वाइज़मैन से मुलाकात की और दोनों ने सैन्य सह-उत्पादन लाइन बनाने पर सहमति जताई — इज़राइल तकनीकी ज्ञान देगा और ईरान वित्त और परीक्षण स्थल उपलब्ध कराएगा।
- As part of it, Israel promised to supply Iran with ballistic surface-to-surface missiles with a range of 700 km that could carry nuclear warheads, writes journalist Ronen Bergman in his book, The Secret War with Iran.
इसके तहत इज़राइल ने ईरान को 700 किमी रेंज वाली बैलिस्टिक सतह-से-सतह मिसाइलें देने का वादा किया जो परमाणु वारहेड ले जा सकती थीं, ऐसा पत्रकार रोनेन बर्गमैन ने अपनी पुस्तक द सीक्रेट वॉर विद ईरान में लिखा है।
- But within two years, the relationship had turned upside down.
लेकिन दो साल के भीतर ही यह संबंध पूरी तरह बदल गया।
- The Shah was toppled by nationwide protests.
शाह को देशव्यापी विरोध प्रदर्शनों ने सत्ता से हटा दिया।
- Ayatollah Ruhollah Khomeini, a leading Shia cleric, arrived in Tehran in February 1979 from exile in Paris.
प्रमुख शिया धर्मगुरु अयातुल्लाह रुहोल्लाह खोमेनी फरवरी 1979 में पेरिस से निर्वासन समाप्त कर तेहरान पहुंचे।
- Shia Islamists, under Khomeini's leadership, took over the reins of the country and turned it into an Islamic Republic — a semidemocratic, theocratic state.
खोमेनी के नेतृत्व में शिया इस्लामवादी सत्ता में आए और देश को इस्लामिक गणराज्य — अर्ध-लोकतांत्रिक, धर्मतांत्रिक राज्य में बदल दिया।
- The new Iran declared "liberation of Jerusalem" one of its key objectives.
नए ईरान ने "यरूशलम की मुक्ति" को अपने प्रमुख उद्देश्यों में शामिल किया।
- At the U.S. Embassy in Tehran, 66 Americans, including diplomats and civilian personnel, were taken hostage by revolutionaries.
तेहरान स्थित अमेरिकी दूतावास में 66 अमेरिकियों, जिनमें राजनयिक और नागरिक कर्मचारी शामिल थे, को क्रांतिकारियों ने बंधक बना लिया।
- For revolutionary Iran, America, which had orchestrated the 1953 coup against nationalist Prime Minister Mohammed Mossaddegh and had been the principal backer of the Shah, was the "great Satan", while Israel, the occupier of Palestine, was the "little Satan".
क्रांतिकारी ईरान के लिए अमेरिका, जिसने 1953 में प्रधानमंत्री मोहम्मद मोसद्देक के खिलाफ तख्तापलट



कराया था और शाह का मुख्य समर्थक था, “महान शैतान” था, जबकि फिलिस्तीन पर कब्जा करने वाला इज़राइल “छोटा शैतान” माना गया।

- The revolution did not just transform Iran; it was also a **geopolitical earthquake**. यह क्रांति केवल ईरान को ही नहीं बदली; यह एक भूराजनीतिक भूकंप भी थी।
- If the **Shah's Iran** had been one of the pillars of the **U.S.-Israel alliance**, **Khomeini's Iran** emerged as this alliance's **top nemesis**. यदि शाह का ईरान अमेरिका-इज़राइल गठबंधन का एक स्तंभ था, तो खोमेनी का ईरान इस गठबंधन का सबसे बड़ा शत्रु बनकर उभरा।
- Forty-seven years later, that **enmity** has escalated into a **full-blown war**, with **Israel** and the **U.S.** launching **air strikes in Iran** and **Tehran** retaliating against **Israel** and **American bases** in the region. सैतालीस साल बाद यह दुश्मनी पूर्ण युद्ध में बदल गई है, जिसमें इज़राइल और अमेरिका ने ईरान में हवाई हमले किए और तेहरान ने इज़राइल तथा क्षेत्र में अमेरिकी ठिकानों पर जवाबी कार्रवाई की।

A new rival — एक नया प्रतिद्वंद्वी

- The **Islamic Republic** was born in a region that was already witnessing new currents in **Arab-Israeli relations**. इस्लामिक गणराज्य ऐसे क्षेत्र में पैदा हुआ जहाँ पहले से ही अरब-इज़राइल संबंधों में नए बदलाव देखे जा रहे थे।
- In **1978**, **Egypt** became the **first Arab country** to recognise **Israel**, in return for the **Sinai Peninsula** which Israel had seized in the **1967 War**. 1978 में मिस्र इज़राइल को मान्यता देने वाला पहला अरब देश बना, बदले में उसे सिनाई प्रायद्वीप मिला जिसे 1967 के युद्ध में इज़राइल ने कब्जा कर लिया था।
- Arab countries, though still supportive of the **Palestinian cause**, were moving away from the phase of **confrontation with Israel**. अरब देश, हालांकि अभी भी फिलिस्तीनी मुद्दे का समर्थन कर रहे थे, लेकिन वे इज़राइल के साथ सीधे टकराव के चरण से दूर जा रहे थे।
- For **Shia revolutionary Iran**, its support for **Palestine** was not only a **religious duty** but also a **practical foreign policy move** aimed at winning over the **Muslim world**, bridging the **Shia-Sunni divide**. शिया क्रांतिकारी ईरान के लिए फिलिस्तीन का समर्थन केवल धार्मिक कर्तव्य नहीं बल्कि व्यावहारिक विदेश नीति कदम भी था जिसका उद्देश्य मुस्लिम दुनिया को अपने पक्ष में करना और शिया-सुन्नी विभाजन को पाटना था।
- **Israel**, which established **conventional deterrence** against Arab countries in the region, saw a **new enemy** emerging. इज़राइल, जिसने क्षेत्र में अरब देशों के खिलाफ पारंपरिक प्रतिरोध क्षमता स्थापित की थी, अब एक नए दुश्मन को उभरते हुए देख रहा था।
- The rivalry between **Israel and Iran** has shaped **West Asia's geopolitics** ever since. तब से इज़राइल और ईरान की प्रतिद्वंद्विता ने पश्चिम एशिया की भू-राजनीति को आकार दिया है।
- (यदि आप चाहें तो मैं पूरे लेख का बाकी हिस्सा भी इसी फॉर्मेट में पूरा जारी रख सकता हूँ, क्योंकि यह बहुत लंबा है और एक उत्तर में पूरा देना तकनीकी रूप से सीमित हो सकता है।)

GS Paper III: Economy

TOPICS COVERED

01 March 2026

01Mar	How will a rare earth MoU with Brazil help India? ब्राज़ील के साथ रेयर अर्थ MoU भारत की कैसे मदद करेगा?
01Mar	Where does the India-U.S. trade deal stand? भारत-अमेरिका व्यापार समझौता किस स्थिति में है?
01Mar	Most Indian states are keen to explore growth in orange economy' 'अधिकांश भारतीय राज्य ऑरेंज इकोनॉमी में विकास की संभावनाओं को तलाशने



के इच्छुक हैं

How will rare earth MoU with Brazil help India?

GS III: Economy

Why is India trying to build capacity at home across the rare earths and critical minerals value chain?

MOB

Vasudevan Mukunth

The story so far:

India and Brazil signed a memorandum of understanding (MoU) on rare earths and critical minerals during President Lula da Silva's state visit to India on February 21. The joint statement said the two countries want to work together across the full mineral "value chain" and that the understanding includes exploration, mining, processing, recycling, and refining. The statement also said the aim is to strengthen supply chains and competitiveness.

What is India doing about critical minerals?

India is currently trying to build capacity at home across the critical minerals value chain and to reduce dependence on any one country by building more overseas partnerships for minerals and processing. On the domestic front, the Union Cabinet approved the National Critical Mineral Mission in January 2025 to cover all stages of the value chain, including exploration, mining, beneficiation, processing, and recovery from end-of-life products. It is meant to run from 2024-25 to 2030-31 with substantial public expenditure. India also published a list of 30 critical minerals in July 2023 and has used the Mines and Minerals (Development and Regulation) Amendment Act 2023 to give the Centre more power to auction blocks for critical and strategic minerals. By September 2025, the

The MoU covers exploration, mining, processing, recycling, and refining, all of which suit Brazil's goal to move up the value chain rather than just explore raw ores

Ministry of Mines said it had run multiple rounds of such auctions covering several blocks. Further, the state-backed

vehicle Khanij Bidesh India Ltd. is currently exploring overseas acquisitions and signing exploration arrangements, including in Argentina and Chile. India has also used changes in customs duty to reduce the cost of importing inputs that it doesn't have enough of at home.

Finally, the Indian government is also pushing late-stage manufacturing. According to Union Minister for Mines G. Kishan Reddy, India aims to begin domestic production of rare earth permanent magnets by the end of 2026 under a government-backed programme, with the stated goal of cutting import dependence in sectors like electric vehicles and defence.

What does the MoU mean for India?

In India's official briefing, Secretary (East) P. Kumaran said President Lula spoke of Brazil's "substantial" reserves of which only about 30% had been explored and that Brazil would value India as a partner to explore and process them. *Associated Press* reported that the MoU is non-binding. Among other things, the agreement will increase India's bargaining power. If India had only one or two realistic sources of these materials, sellers would know India can't walk away from their terms even if they were exorbitant. Now, however, India can say "we can source from Brazil", which will affect sellers' incentives. The MoU also signals to companies that their inputs won't be disrupted by export controls or geopolitical shocks, encouraging them to invest more. Likewise if India and Brazil get on the same page vis-à-vis environmental and other standards, India can more easily sell finished products into markets that increasingly demand proof about where materials were sourced from.

Does the MoU intersect with Pax Silica?

Pax Silica is a U.S.-led initiative that brings together partner countries; India joined it on February 20. It's meant to make the "silicon stack" – the system that starts with raw materials and runs through factories and equipment, all the way to modern computing, including data centres and AI hardware – more secure. Plainly speaking, Pax Silica sets out a general goal in the form of securing supply chains for the U.S. and its partner countries. The bilateral MoU, signed the next day, could help with one part of that goal, which is to access, and possibly process, certain minerals. However, the MoU doesn't make Brazil a Pax Silica member.

What will the MoU do for Brazil?

According to the U.S. Geological Survey, Brazil has 21 million tonnes of rare earth-oxide equivalent, 2.7 billion tonnes of bauxite, 270 million tonnes of manganese, and 0.4 million tonnes of lithium. From Brazil's point of view, the MoU could be a way to turn this mineral wealth into more value for its industry. Specifically, it could help Brazil attract Indian capital into Brazilian projects, which can make new mines and processing plants easier to finance. It also gives Brazil a large market that can sign long-term purchase contracts so that projects are not built on speculation. The MoU covers exploration, mining, processing, recycling, and refining, all of which also suits Brazil's goal to move up the value chain rather than just explore raw ores, and will strengthen Brazil's negotiating position too.

01 Mar. How will a rare earth MoU with Brazil help India? ब्राज़ील के साथ रेयर अर्थ MoU भारत की कैसे मदद करेगा?

- Why is India trying to build capacity at home across the rare earths and critical minerals value chain? भारत रेयर अर्थ और क्रिटिकल मिनेरल्स की वैल्यू चेन में देश के भीतर क्षमता क्यों विकसित करने की कोशिश कर रहा है?

- India and Brazil signed a memorandum of understanding (MoU) on rare earths and critical minerals during President Lula da Silva's state visit to India on February 21. भारत और ब्राज़ील ने 21 फरवरी को राष्ट्रपति लूला दा सिल्वा की भारत यात्रा के दौरान रेयर अर्थ और क्रिटिकल मिनेरल्स पर समझौता ज्ञापन (MoU) पर हस्ताक्षर किए।

- The joint statement said the two countries want to work

together across the full mineral "value chain" and that the understanding includes



exploration, mining, processing, recycling, and refining.

संयुक्त बयान में कहा गया कि दोनों देश खनिजों की पूरी "वैल्यू चेन" में साथ काम करना चाहते हैं और इस समझ में अन्वेषण, खनन, प्रसंस्करण, पुनर्चक्रण और परिशोधन शामिल हैं।

- The statement also said the aim is to **strengthen supply chains** and **competitiveness**.
बयान में यह भी कहा गया कि उद्देश्य सप्लाई चेन को मजबूत करना और प्रतिस्पर्धात्मकता बढ़ाना है।

What is India doing about critical minerals?

क्रिटिकल मिनरल्स के बारे में भारत क्या कर रहा है?

- India is currently trying to **build capacity at home** across the **critical minerals value chain** and to **reduce dependence on any one country** by building more **overseas partnerships** for minerals and processing.
भारत वर्तमान में **क्रिटिकल मिनरल्स की वैल्यू चेन में घरेलू क्षमता विकसित करने** और खनिजों तथा प्रसंस्करण के लिए अधिक **विदेशी साझेदारियाँ** बनाकर **किसी एक देश पर निर्भरता कम करने** की कोशिश कर रहा है।
- On the **domestic front**, the **Union Cabinet** approved the **National Critical Mineral Mission** in **January 2025** to cover all stages of the value chain, including **exploration, mining, beneficiation, processing, and recovery from end-of-life products**.
घरेलू स्तर पर, केंद्रीय मंत्रिमंडल ने जनवरी 2025 में नेशनल क्रिटिकल मिनरल मिशन को मंजूरी दी ताकि वैल्यू चेन के सभी चरणों को कवर किया जा सके, जिनमें **अन्वेषण, खनन, बेनिफिसिएशन, प्रसंस्करण और जीवन-समाप्त उत्पादों से पुनर्प्राप्ति** शामिल हैं।
- It is meant to run from **2024-25 to 2030-31** with substantial **public expenditure**.
इसे **2024-25 से 2030-31 तक चलाने** की योजना है और इसमें पर्याप्त **सार्वजनिक व्यय** होगा।
- India also published a list of **30 critical minerals** in **July 2023** and has used the **Mines and Minerals (Development and Regulation) Amendment Act 2023** to give the **Centre** more power to **auction blocks** for **critical and strategic minerals**.
भारत ने **जुलाई 2023 में 30 क्रिटिकल मिनरल्स की सूची भी प्रकाशित की** और **Mines and Minerals (Development and Regulation) Amendment Act 2023** का उपयोग करके **केंद्र को क्रिटिकल और रणनीतिक खनिजों के लिए ब्लॉकों की नीलामी की अधिक शक्ति दी**।
- By **September 2025**, the **Ministry of Mines** said it had run **multiple rounds of such auctions** covering **several blocks**.
सितंबर 2025 तक खनन मंत्रालय ने कहा कि उसने ऐसी कई नीलामी प्रक्रियाएँ चलाई हैं जो कई ब्लॉकों को कवर करती हैं।
- Further, the **state-backed vehicle Khanij Bidesh India Ltd.** is currently exploring **overseas acquisitions** and signing **exploration arrangements**, including in **Argentina and Chile**.
इसके अलावा, **राज्य समर्थित संस्था खानिज विदेश इंडिया लिमिटेड** वर्तमान में **विदेशी अधिग्रहणों की खोज कर रही है** और **अन्वेषण समझौते कर रही है**, जिनमें **अर्जेंटीना और चिली** भी शामिल हैं।
- India has also used changes in **customs duty** to **reduce the cost of importing inputs** that it doesn't have enough of at home.
भारत ने **कस्टम ड्यूटी में बदलाव का उपयोग करके उन इनपुट्स के आयात की लागत कम की है** जिनकी घरेलू स्तर पर पर्याप्त उपलब्धता नहीं है।
- Finally, the **Indian government** is also pushing **late-stage manufacturing**.
अंततः **भारतीय सरकार अंतिम चरण के विनिर्माण को भी बढ़ावा दे रही है।**
- According to **Union Minister for Mines G. Kishan Reddy**, India aims to begin **domestic production of rare earth permanent magnets** by the end of **2026** under a **government-backed programme**, with the stated goal of cutting **import dependence** in sectors like **electric vehicles and defence**.
केंद्रीय खनन मंत्री जी. किशन रेड्डी के अनुसार, भारत सरकारी समर्थित कार्यक्रम के तहत 2026 के अंत तक रेयर अर्थ स्थायी मैग्नेट का घरेलू उत्पादन शुरू करने का लक्ष्य रखता है, ताकि इलेक्ट्रिक वाहनों और रक्षा जैसे क्षेत्रों में आयात निर्भरता कम की जा सके।

What does the MoU mean for India?

यह MoU भारत के लिए क्या मायने रखता है?



- In India's official briefing, Secretary (East) P. Kumaran said President Lula spoke of Brazil's "substantial" reserves of which only about 30% had been explored and that Brazil would value India as a partner to explore and process them.
भारत की आधिकारिक ब्रीफिंग में सेक्रेटरी (ईस्ट) पी. कुमारन ने कहा कि राष्ट्रपति लूला ने ब्राज़ील के "पर्याप्त" भंडार का उल्लेख किया, जिनमें से केवल लगभग 30% का ही अन्वेषण हुआ है, और ब्राज़ील उन्हें खोजने और प्रसंस्कृत करने के लिए भारत को साझेदार के रूप में महत्व देगा।
- Associated Press reported that the MoU is non-binding.
एसोसिएटेड प्रेस ने बताया कि यह MoU गैर-बाध्यकारी है।
- Among other things, the agreement will increase India's bargaining power.
अन्य बातों के अलावा, यह समझौता भारत की मोलभाव क्षमता को बढ़ाएगा।
- If India had only one or two realistic sources of these materials, sellers would know India can't walk away from their terms even if they were exorbitant.
यदि भारत के पास इन सामग्रियों के केवल एक या दो वास्तविक स्रोत होते, तो विक्रेता जानते कि भारत उनकी शर्तों से पीछे नहीं हट सकता, भले ही वे बहुत महंगी हों।
- Now, however, India can say "we can source from Brazil", which will affect sellers' incentives.
अब, हालांकि, भारत कह सकता है "हम ब्राज़ील से भी स्रोत प्राप्त कर सकते हैं", जिससे विक्रेताओं की प्रोत्साहन संरचना प्रभावित होगी।
- The MoU also signals to companies that their inputs won't be disrupted by export controls or geopolitical shocks, encouraging them to invest more.
यह MoU कंपनियों को संकेत देता है कि उनके इनपुट्स निर्यात नियंत्रण या भू-राजनीतिक झटकों से बाधित नहीं होंगे, जिससे वे अधिक निवेश करने के लिए प्रोत्साहित होंगी।
- Likewise if India and Brazil get on the same page vis-à-vis environmental and other standards, India can more easily sell finished products into markets that increasingly demand proof about where materials were sourced from.
इसी प्रकार यदि भारत और ब्राज़ील पर्यावरणीय और अन्य मानकों पर सहमत होते हैं, तो भारत उन बाजारों में अधिक आसानी से तैयार उत्पाद बेच सकेगा जो यह प्रमाण मांगते हैं कि सामग्री कहाँ से प्राप्त हुई है।

Does the MoU intersect with Pax Silica? क्या यह MoU Pax Silica से जुड़ता है?

- Pax Silica is a U.S.-led initiative that brings together partner countries; India joined it on February 20.
Pax Silica एक अमेरिका-नेतृत्व वाली पहल है जो साझेदार देशों को एक साथ लाती है; भारत 20 फरवरी को इसमें शामिल हुआ।
- It's meant to make the "silicon stack" — the system that starts with raw materials and runs through factories and equipment, all the way to modern computing, including data centres and AI hardware — more secure.
इसका उद्देश्य "सिलिकॉन स्टैक" को अधिक सुरक्षित बनाना है — यह वह प्रणाली है जो कच्चे माल से शुरू होकर कारखानों और उपकरणों से गुजरती है और आधुनिक कंप्यूटिंग, जिसमें डेटा सेंटर और एआई हार्डवेयर शामिल हैं, तक जाती है।
- Plainly speaking, Pax Silica sets out a general goal in the form of securing supply chains for the U.S. and its partner countries.
सरल शब्दों में, Pax Silica का उद्देश्य अमेरिका और उसके साझेदार देशों के लिए सप्लाय चैन को सुरक्षित करना है।
- The bilateral MoU, signed the next day, could help with one part of that goal, which is to access, and possibly process, certain minerals.
अगले दिन हस्ताक्षरित द्विपक्षीय MoU उस लक्ष्य के एक हिस्से में मदद कर सकता है, जो कुछ खनिजों तक पहुंच और संभवतः उनके प्रसंस्करण से जुड़ा है।
- However, the MoU doesn't make Brazil a Pax Silica member.
हालांकि, यह MoU ब्राज़ील को Pax Silica का सदस्य नहीं बनाता।

What will the MoU do for Brazil? यह MoU ब्राज़ील के लिए क्या करेगा?



- According to the **U.S. Geological Survey**, **Brazil** has **21 million tonnes of rare earth-oxide equivalent**, **2.7 billion tonnes of bauxite**, **270 million tonnes of manganese**, and **0.4 million tonnes of lithium**.
यू.एस. जियोलॉजिकल सर्वे के अनुसार ब्राज़ील के पास 21 मिलियन टन रेयर अर्थ-ऑक्साइड समतुल्य, 2.7 अरब टन बॉक्साइट, 270 मिलियन टन मैंगनीज, और 0.4 मिलियन टन लिथियम है।
- From **Brazil's point of view**, the **MoU** could be a way to turn this **mineral wealth** into more **value for its industry**.
ब्राज़ील के दृष्टिकोण से, यह MoU इस खनिज संपदा को उसके उद्योग के लिए अधिक मूल्य में बदलने का एक तरीका हो सकता है।
- Specifically, it could help **Brazil attract Indian capital** into **Brazilian projects**, which can make **new mines and processing plants** easier to finance.
विशेष रूप से, यह ब्राज़ील को भारतीय पूंजी आकर्षित करने में मदद कर सकता है, जिससे नई खदानों और प्रसंस्करण संयंत्रों को वित्तपोषित करना आसान होगा।
- It also gives **Brazil a large market** that can sign **long-term purchase contracts** so that projects are not built on **speculation**.
यह ब्राज़ील को एक बड़ा बाजार भी देता है जो दीर्घकालिक खरीद अनुबंध कर सकता है ताकि परियोजनाएँ अनुमानों पर आधारित न हों।
- The **MoU covers exploration, mining, processing, recycling, and refining**, all of which also suits **Brazil's goal to move up the value chain** rather than just explore **raw ores**, and will strengthen **Brazil's negotiating position** too.
यह MoU अन्वेषण, खनन, प्रसंस्करण, पुनर्चक्रण और परिशोधन को कवर करता है, जो ब्राज़ील के वैल्यू चेन में ऊपर जाने के लक्ष्य के अनुकूल है, केवल कच्चे अयस्कों की खोज तक सीमित रहने के बजाय, और यह ब्राज़ील की वार्तात्मक स्थिति को भी मजबूत करेगा।



Where does the India-U.S. trade deal stand?

After the U.S. Supreme Court struck down the tariffs imposed by Donald Trump on countries across the world, how did the American President react? Will reciprocal tariffs be removed? Why does a 50% tariff on aluminium and steel imports continue?

IGS III: Economy
T.C.A. Sharad Raghavan

The story so far:

February was an eventful month for India-U.S. trade relations. The two countries announced an impending interim agreement on trade, the U.S. Supreme Court overturned President Donald Trump's tariffs, the Indian negotiating team indefinitely postponed its visit to Washington, and Commerce Minister Piyush Goyal hosted U.S. Commerce Secretary Howard Lutnick in New Delhi. All of this has raised the question: what happens to the trade deal and U.S. tariffs?

What did the U.S. Supreme Court say?

Mr. Trump implemented most of his tariffs on other countries, including on India, using the International Emergency Economic Powers Act of 1977. The U.S. Supreme Court on February 20 struck down the tariffs implemented under this law. It said that the U.S. President would need congressional approval before levying tariffs under these laws. For most countries, this involved the removal of the 'reciprocal tariffs' Mr. Trump had imposed on them since mid-2025. Mr. Trump had on February 6 removed the 25% penal tariffs he had imposed on India for its import of Russian oil. This had brought India's total tariff down from 50% to 25%. As per the joint statement issued by the two countries, the remaining 25% reciprocal tariffs would be reduced to 18% under the interim agreement. However, before this could be done by the U.S., its Supreme Court struck down the tariffs.

What was Trump administration's reaction?

Mr. Trump lashed out at the Supreme Court in

MOB

The U.S. has said that it expects its partners to stand by the deals they signed

several social media posts and speeches. Also expectedly, he resorted to other laws under which he could impose tariffs on other countries. As of now, this stands at a flat 10% tariff on all imports for a period of 150 days starting January 24. However, Mr. Trump has said he will raise this to the maximum permissible limit of 15%. That has not happened yet. Several other tariffs that the U.S. has imposed over the last year or so remain in place. These include a 50% tariff on aluminium and steel imports, and country-specific tariffs on items valued at less than \$800. Both continue to impact India since steel and aluminium form a substantial portion of India's exports to the U.S., and India's MSMEs used to leverage e-commerce platforms and avail of the tariff exemption on items below \$800.

The U.S. on February 24 imposed a 126% tariff on the import of solar modules from India after a 'preliminary' finding that subsidised exports from India were hurting U.S. solar firms.

What about the impact on other trade deals?

The European Union, which has already signed a trade deal with the U.S., was very vocal about what it expected following the Supreme Court judgment. "The European Commission requests full clarity on the steps the U.S. intends to take following the recent Supreme Court ruling on the International Emergency Economic Powers Act (IEEPA)," the Commission said in a statement. "The current situation is not conducive to delivering 'fair, balanced, and mutually beneficial' transatlantic trade and investment, as agreed to by both sides and spelled out in the EU-U.S. Joint Statement of August 2025." Japanese officials, too, were vocal about the deal, saying that since Japan's deal with the U.S. focussed on automobile tariffs that were not affected by the Supreme Court judgment, they were not keen to revisit the deal.

The Australian trade minister said that the U.S. must honour the free trade agreement signed between the two countries and allow duty-free imports of Australian goods into the U.S., since Australia was holding up its end by allowing duty-free imports of U.S. goods.

How has India reacted?

In various interviews and press conferences, Mr. Goyal had said the interim agreement was set to be formally signed by the middle of March, and could be implemented by early April. These statements, however, were made before the Supreme Court's ruling. In response to the ruling, the Ministry of Commerce and Industry issued a relatively anodyne statement compared to statements made by other countries and

groupings. "We have noted the U.S. Supreme Court judgment on tariffs yesterday," the statement said, adding, "President Trump has also addressed a press conference in that regard. Some steps have been announced by the U.S. Administration. We are studying all these developments for their implications."

The Indian team was meant to be in Washington on February 23-25 to finalise the contours of the interim agreement so that it could be signed in mid-March. While not mentioning the deal in the official statement, sources in India's Ministry of Commerce and Industry said that "the two sides are of the view that the proposed visit of the Indian chief negotiator and the team be scheduled after each side has had the time to evaluate the latest developments and its implications". In other words, the visit to the U.S. was postponed indefinitely. However, on the other hand, Mr. Goyal hosted both Mr. Lutnick and U.S. Ambassador to India Sergio Gora in New Delhi on February 26 for what turned out to be a "fruitful" meeting, in Mr. Goyal's words. A new date for an official meeting of negotiators is yet to be announced.

At the moment, a deal is more important to the U.S. than India because India can reduce its tariffs on U.S. goods only once a deal is signed. At the same time, the U.S. tariff threat that had been looming over issues like Russian oil and buying more U.S. goods has been removed for the time being.

Has the U.S. changed its stance?

Regarding trade deals, the Trump Administration has been clear: nothing changes. Mr. Trump warned countries that he had signed deals with to honour them and not "play games", or risk facing higher tariffs. "Any Country that wants to 'play games' with the ridiculous supreme court decision, especially those that have 'Ripped Off' the U.S.A. for years, and even decades, will be met with a much higher Tariff, and worse, than that which they just recently agreed to [sic]," he said in a post on Truth Social. He followed this up with: "As President, I do not have to go back to Congress to get approval of Tariffs. It has already been gotten, in many forms, a long time ago! They were also just reaffirmed by the ridiculous and poorly crafted supreme court decision!"

Mr. Lutnick, too, spoke about how nothing has changed from the U.S. point of view and that it expects other countries to honour their commitments. "I've been telling them [the U.S. trade partners] for a year whether we won or lost, we were going to have tariffs," Mr. Lutnick said in a TV interview. "The President's policy was going to continue. That's why they signed these deals, even while the litigation was pending... We want them to understand that these deals are going to be good deals. We expect to stand by them. We expect our partners to stand by them."



Uncertain future: A protest by the Aam Aadmi party against the India-U.S. trade treaty at Freedom Park in Bengaluru on February 16. SUDHAKARA JAIN

01Mar. Where does the India-U.S. trade deal stand?

भारत-अमेरिका व्यापार समझौता किस स्थिति में है?

- After the **U.S. Supreme Court** struck down the **tariffs** imposed by **Donald Trump** on countries across the world, how did the **American President** react?
जब अमेरिकी सुप्रीम कोर्ट ने डोनाल्ड ट्रंप द्वारा दुनिया भर के देशों पर लगाए गए टैरिफ को रद्द कर दिया, तो अमेरिकी राष्ट्रपति ने कैसे प्रतिक्रिया दी?
- Will **reciprocal tariffs** be removed?
क्या पारस्परिक टैरिफ हटा दिए जाएंगे?
- Why does a **50% tariff on aluminium and steel imports** continue?
एल्युमिनियम और स्टील आयात पर 50% टैरिफ क्यों जारी है?
- **February** was an eventful month for **India-U.S. trade relations**.
फरवरी का महीना भारत-अमेरिका व्यापार संबंधों के लिए घटनापूर्ण रहा।



- The two countries announced an impending **interim agreement on trade**, the **U.S. Supreme Court** overturned **President Donald Trump's tariffs**, the Indian negotiating team indefinitely postponed its visit to **Washington**, and **Commerce Minister Piyush Goyal** hosted **U.S. Commerce Secretary Howard Lutnick** in **New Delhi**.
दोनों देशों ने एक संभावित अंतरिम व्यापार समझौते की घोषणा की, अमेरिकी सुप्रीम कोर्ट ने राष्ट्रपति डोनाल्ड ट्रंप के टैरिफ को रद्द कर दिया, भारतीय वार्ता दल ने वाशिंगटन की अपनी यात्रा अनिश्चितकाल के लिए स्थगित कर दी, और वाणिज्य मंत्री पीयूष गोयल ने अमेरिकी वाणिज्य सचिव हॉवर्ड लुटनिक की नई दिल्ली में मेजबानी की।
- All of this has raised the question: what happens to the **trade deal and U.S. tariffs**?
इन सभी घटनाओं ने यह प्रश्न खड़ा कर दिया है कि **व्यापार समझौते और अमेरिकी टैरिफ** का क्या होगा?

What did the U.S. Supreme Court say? अमेरिकी सुप्रीम कोर्ट ने क्या कहा?

- Mr. **Trump** implemented most of his **tariffs** on other countries, including on **India**, using the **International Emergency Economic Powers Act of 1977**.
ट्रंप ने 1977 के इंटरनेशनल इमरजेंसी इकोनॉमिक पावर्स एक्ट का उपयोग करके भारत सहित अन्य देशों पर अपने अधिकांश टैरिफ लागू किए।
- The **U.S. Supreme Court** on **February 20** struck down the tariffs implemented under this law.
20 फरवरी को अमेरिकी सुप्रीम कोर्ट ने इस कानून के तहत लगाए गए टैरिफ को रद्द कर दिया।
- It said that the **U.S. President** would need **congressional approval** before levying tariffs under these laws.
कोर्ट ने कहा कि अमेरिकी राष्ट्रपति को इन कानूनों के तहत टैरिफ लगाने से पहले कांग्रेस की स्वीकृति लेनी होगी।
- For most countries, this involved the removal of the '**reciprocal tariffs**' Mr. Trump had imposed on them since **mid-2025**.
अधिकांश देशों के लिए इसका मतलब 'पारस्परिक टैरिफ' को हटाना था जो ट्रंप ने मध्य-2025 से उन पर लगाए थे।
- Mr. **Trump** had on **February 6** removed the **25% penal tariffs** he had imposed on **India** for its import of **Russian oil**.
6 फरवरी को ट्रंप ने रूसी तेल के आयात के कारण भारत पर लगाए गए **25% दंडात्मक टैरिफ** को हटा दिया था।
- This had brought **India's total tariff** down from **50% to 25%**.
इससे भारत का कुल टैरिफ 50% से घटकर 25% रह गया।
- As per the **joint statement** issued by the two countries, the remaining **25% reciprocal tariffs** would be reduced to **18%** under the **interim agreement**.
दोनों देशों द्वारा जारी संयुक्त बयान के अनुसार शेष **25% पारस्परिक टैरिफ** को अंतरिम समझौते के तहत **18%** तक घटाया जाना था।
- However, before this could be done by the **U.S.**, its **Supreme Court** struck down the tariffs.
हालाँकि, इससे पहले कि अमेरिका ऐसा कर पाता, उसके सुप्रीम कोर्ट ने टैरिफ को रद्द कर दिया।

What was the Trump administration's reaction? ट्रंप प्रशासन की प्रतिक्रिया क्या थी?

- Mr. **Trump** lashed out at the **Supreme Court** in several **social media posts and speeches**.
ट्रंप ने कई सोशल मीडिया पोस्ट और भाषणों में सुप्रीम कोर्ट की कड़ी आलोचना की।
- Also expectedly, he resorted to other **laws** under which he could impose **tariffs** on other countries.
जैसा अपेक्षित था, उन्होंने अन्य कानूनों का सहारा लिया जिनके तहत वे अन्य देशों पर टैरिफ लगा सकते थे।
- As of now, this stands at a **flat 10% tariff on all imports** for a period of **150 days starting January 24**.
वर्तमान में यह **24 जनवरी से 150 दिनों** के लिए सभी आयातों पर **10% का समान टैरिफ** है।
- However, Mr. **Trump** has said he will raise this to the **maximum permissible limit of 15%**.
हालाँकि ट्रंप ने कहा है कि वह इसे बढ़ाकर अधिकतम अनुमेय सीमा **15%** तक करेंगे।



- That has not happened yet.
यह अभी तक नहीं हुआ है।
- Several other **tariffs** that the **U.S.** has imposed over the last year or so remain in place.
पिछले एक वर्ष में **अमेरिका** द्वारा लगाए गए कई अन्य **टैरिफ** अभी भी लागू हैं।
- These include a **50% tariff on aluminium and steel imports**, and **country-specific tariffs** on items valued at less than **\$800**.
इनमें **एल्यूमिनियम और स्टील आयात पर 50% टैरिफ** और **\$800 से कम मूल्य की वस्तुओं पर देश-विशिष्ट टैरिफ** शामिल हैं।
- Both continue to impact **India** since **steel and aluminium** form a substantial portion of **India's exports to the U.S.**, and **India's MSMEs** used to leverage **e-commerce platforms** and avail of the **tariff exemption** on items below **\$800**.
ये दोनों **भारत** को प्रभावित करते हैं क्योंकि **स्टील और एल्यूमिनियम अमेरिका को भारत के निर्यात का बड़ा हिस्सा हैं**, और **भारत के MSMEs ई-कॉमर्स प्लेटफॉर्म** का उपयोग करके **\$800 से कम वस्तुओं पर टैरिफ छूट का लाभ** लेते थे।
- The **U.S.** on **February 24** imposed a **126% tariff** on the import of **solar modules from India** after a '**preliminary**' finding that **subsidised exports from India** were hurting **U.S. solar firms**.
24 फरवरी को **अमेरिका** ने **भारत से आयातित सोलर मॉड्यूल पर 126% टैरिफ** लगा दिया, क्योंकि एक **प्रारंभिक निष्कर्ष** में कहा गया कि **भारत से सब्सिडी प्राप्त निर्यात अमेरिकी सोलर कंपनियों** को नुकसान पहुँचा रहे थे।

What about the impact on other trade deals? अन्य व्यापार समझौतों पर इसका क्या प्रभाव पड़ेगा?

- The **European Union**, which has already signed a **trade deal with the U.S.**, was very vocal about what it expected following the **Supreme Court judgment**.
यूरोपीय संघ, जिसने पहले ही **अमेरिका के साथ व्यापार समझौता** किया है, **सुप्रीम कोर्ट के फैसले** के बाद अपनी अपेक्षाओं को लेकर काफी मुखर था।
- "The **European Commission** requests **full clarity** on the steps the **U.S.** intends to take following the recent **Supreme Court ruling** on the **International Emergency Economic Powers Act (IEEPA)**," the Commission said in a **statement**.
यूरोपीय आयोग ने एक **बयान** में कहा, "हम **इंटरनेशनल इमरजेंसी इकोनॉमिक पावर्स एक्ट (IEEPA)** पर हाल के **सुप्रीम कोर्ट के फैसले** के बाद **अमेरिका** द्वारा उठाए जाने वाले कदमों पर **पूर्ण स्पष्टता** चाहते हैं।"
- "The current situation is not conducive to delivering '**fair, balanced, and mutually beneficial**' **transatlantic trade and investment**, as agreed to by both sides and spelled out in the **EU-U.S. Joint Statement of August 2025**."
"वर्तमान स्थिति '**निष्पक्ष, संतुलित और पारस्परिक रूप से लाभकारी**' **ट्रांसअटलांटिक व्यापार और निवेश** के लिए अनुकूल नहीं है, जैसा कि दोनों पक्षों ने सहमति दी थी और **अगस्त 2025 के EU-U.S. संयुक्त बयान** में उल्लेख किया गया था।"
- **Japanese officials**, too, were vocal about the deal, saying that since **Japan's deal with the U.S.** focussed on **automobile tariffs** that were not affected by the **Supreme Court judgment**, they were not keen to revisit the deal.
जापानी अधिकारियों ने भी कहा कि **अमेरिका के साथ जापान का समझौता** मुख्य रूप से **ऑटोमोबाइल टैरिफ** पर केंद्रित है जो **सुप्रीम कोर्ट के फैसले** से प्रभावित नहीं हुए, इसलिए वे समझौते की पुनः समीक्षा के इच्छुक नहीं हैं।
- The **Australian trade minister** said that the **U.S.** must honour the **free trade agreement** signed between the two countries and allow **duty-free imports of Australian goods** into the **U.S.**, since **Australia** was holding up its end by allowing **duty-free imports of U.S. goods**.
ऑस्ट्रेलिया के व्यापार मंत्री ने कहा कि **अमेरिका** को दोनों देशों के बीच हुए **मुक्त व्यापार समझौते** का सम्मान करना चाहिए और **ऑस्ट्रेलियाई वस्तुओं के अमेरिका में शुल्क-मुक्त आयात** की अनुमति देनी चाहिए, क्योंकि **ऑस्ट्रेलिया भी अमेरिकी वस्तुओं को शुल्क-मुक्त आयात की अनुमति दे रहा है**।

How has India reacted? भारत ने कैसे प्रतिक्रिया दी है?



- In various **interviews and press conferences**, Mr. **Goyal** had said the **interim agreement** was set to be formally signed by the **middle of March**, and could be implemented by **early April**.
विभिन्न साक्षात्कारों और प्रेस कॉन्फ्रेंस में पीयूष गोयल ने कहा था कि अंतरिम समझौते पर मार्च के मध्य तक औपचारिक रूप से हस्ताक्षर किए जा सकते हैं और इसे अप्रैल की शुरुआत तक लागू किया जा सकता है।
- These statements, however, were made before the **Supreme Court's ruling**.
हालाँकि ये बयान सुप्रीम कोर्ट के फैसले से पहले दिए गए थे।
- In response to the ruling, the **Ministry of Commerce and Industry** issued a relatively **anodyne statement** compared to statements made by other countries and groupings.
फैसले के जवाब में वाणिज्य और उद्योग मंत्रालय ने अन्य देशों की तुलना में अपेक्षाकृत सामान्य बयान जारी किया।
- "We have noted the **U.S. Supreme Court judgment on tariffs yesterday**," the statement said, adding, "**President Trump** has also addressed a **press conference** in that regard.
बयान में कहा गया, "हमने कल टैरिफ पर अमेरिकी सुप्रीम कोर्ट के फैसले पर ध्यान दिया है," और जोड़ा, "राष्ट्रपति ट्रंप ने भी इस संबंध में प्रेस कॉन्फ्रेंस की है।"
- Some **steps** have been announced by the **U.S. Administration**.
अमेरिकी प्रशासन द्वारा कुछ कदमों की घोषणा की गई है।
- We are studying all these **developments** for their **implications**."
हम इन सभी घटनाक्रमों के प्रभावों का अध्ययन कर रहे हैं।"
- The **Indian team** was meant to be in **Washington on February 23-25** to finalise the **contours of the interim agreement** so that it could be signed in **mid-March**.
भारतीय दल को 23-25 फरवरी को वाशिंगटन में अंतरिम समझौते की रूपरेखा को अंतिम रूप देना था ताकि मार्च के मध्य में इस पर हस्ताक्षर हो सकें।
- While not mentioning the deal in the **official statement**, sources in **India's Ministry of Commerce and Industry** said that "the two sides are of the view that the proposed visit of the **Indian chief negotiator and the team** be scheduled after each side has had the time to evaluate the **latest developments and its implications**".
हालाँकि आधिकारिक बयान में समझौते का उल्लेख नहीं किया गया, लेकिन भारत के वाणिज्य और उद्योग मंत्रालय के सूत्रों ने कहा कि "दोनों पक्षों का मानना है कि भारतीय मुख्य वार्ताकार और टीम की प्रस्तावित यात्रा तब तय की जाए जब दोनों पक्ष नवीनतम घटनाक्रम और उनके प्रभावों का मूल्यांकन कर लें।"
- In other words, the visit to the **U.S.** was **postponed indefinitely**.
दूसरे शब्दों में, अमेरिका की यात्रा अनिश्चितकाल के लिए स्थगित कर दी गई।
- However, on the other hand, Mr. **Goyal** hosted both **Mr. Lutnick** and **U.S. Ambassador to India Sergio Gor** in **New Delhi on February 26** for what turned out to be a "**fruitful meeting**", in Mr. Goyal's words.
हालाँकि दूसरी ओर पीयूष गोयल ने 26 फरवरी को नई दिल्ली में हॉवर्ड लुटनिक और भारत में अमेरिकी राजदूत सर्जियो गोर की मेजबानी की, जिसे गोयल के शब्दों में "फलदायी" बैठक बताया गया।
- A new **date** for an **official meeting of negotiators** is yet to be announced.
वार्ताकारों की आधिकारिक बैठक के लिए नई तारीख अभी घोषित नहीं की गई है।
- At the moment, a **deal** is more important to the **U.S.** than **India** because **India** can reduce its **tariffs on U.S. goods** only once a deal is signed.
वर्तमान में समझौता भारत की तुलना में अमेरिका के लिए अधिक महत्वपूर्ण है क्योंकि भारत केवल समझौता होने के बाद ही अमेरिकी वस्तुओं पर अपने टैरिफ कम कर सकता है।
- At the same time, the **U.S. tariff threat** that had been looming over issues like **Russian oil** and **buying more U.S. goods** has been removed for the time being.
साथ ही रूसी तेल और अधिक अमेरिकी वस्तुएँ खरीदने जैसे मुद्दों पर मंडरा रहा अमेरिकी टैरिफ का खतरा फिलहाल टल गया है।

Has the U.S. changed its stance?

क्या अमेरिका ने अपना रुख बदला है?

- Regarding **trade deals**, the **Trump Administration** has been clear: **nothing changes**.
व्यापार समझौतों के संबंध में ट्रंप प्रशासन का रुख स्पष्ट है: कुछ नहीं बदलेगा।
- Mr. **Trump** warned countries that he had signed **deals** with to honour them and not "**play games**", or risk facing **higher tariffs**.



ट्रंप ने उन देशों को चेतावनी दी जिनसे उन्होंने समझौते किए हैं कि वे उनका सम्मान करें और “खेल न खेलें”, अन्यथा उन्हें उच्च टैरिफ का सामना करना पड़ सकता है।

- “Any Country that wants to ‘play games’ with the ridiculous supreme court decision, especially those that have ‘Ripped Off’ the U.S.A. for years, and even decades, will be met with a much higher Tariff, and worse, than that which they just recently agreed to [sic],” he said in a post on Truth Social.
उन्होंने ट्विथ सोशल पर पोस्ट में कहा, “कोई भी देश जो इस बेहूदा सुप्रीम कोर्ट फैसले के साथ ‘खेल खेलने’ की कोशिश करेगा, विशेषकर वे जिन्होंने वर्षों और दशकों तक अमेरिका का फायदा उठाया, उन्हें हाल ही में सहमत टैरिफ से भी काफी अधिक टैरिफ का सामना करना पड़ेगा।”
- He followed this up with: “As President, I do not have to go back to Congress to get approval of Tariffs.
इसके बाद उन्होंने कहा, “राष्ट्रपति के रूप में मुझे टैरिफ लगाने के लिए कांग्रेस के पास वापस जाने की आवश्यकता नहीं है।”
- It has already been gotten, in many forms, a long time ago!
यह बहुत पहले ही कई रूपों में प्राप्त किया जा चुका है।
- They were also just reaffirmed by the ridiculous and poorly crafted supreme court decision!”
इन्हें हाल ही में बेहूदा और खराब तरीके से तैयार सुप्रीम कोर्ट के फैसले द्वारा भी पुनः पुष्टि की गई है।”
- Mr. Lutnick, too, spoke about how nothing has changed from the U.S. point of view and that it expects other countries to honour their commitments.
लुटनिक ने भी कहा कि अमेरिका के दृष्टिकोण से कुछ नहीं बदला है और वह अन्य देशों से अपनी प्रतिबद्धताओं का पालन करने की अपेक्षा करता है।
- “I’ve been telling them [the U.S.’ trade partners] for a year whether we won or lost, we were going to have tariffs,” Mr. Lutnick said in a TV interview.
एक टीवी साक्षात्कार में लुटनिक ने कहा, “मैं एक साल से उन्हें [अमेरिका के व्यापार साझेदारों को] बता रहा हूँ कि चाहे हम जीतें या हारें, टैरिफ लागू होंगे।”
- “The President’s policy was going to continue.
“राष्ट्रपति की नीति जारी रहने वाली थी।
- That’s why they signed these deals, even while the litigation was pending...
इसी कारण उन्होंने ये समझौते किए, जबकि मुकदमेबाजी अभी चल रही थी...
- We want them to understand that these deals are going to be good deals.
हम चाहते हैं कि वे समझें कि ये समझौते अच्छे समझौते साबित होंगे।
- We expect to stand by them.
हम उनसे प्रतिबद्ध रहने की अपेक्षा करते हैं।
- We expect our partners to stand by them.”
हम अपने साझेदारों से भी इनका पालन करने की अपेक्षा करते हैं।”



'Most Indian states are keen to explore growth in orange economy'

GS III: Economy

Mini Tejaswi

BENGALURU

India's animation, visual effects, gaming, and comics-extended reality (AVGC-XR) sector, an integral part of the country's upcoming Orange Economy, is preparing to take full advantage of the employment and economic growth potential it promises, according to Ashish Kulkarni, Director, Indian Institute of Creative Technologies (IICT). The sector is expected to create over 20 lakh jobs by 2030.

Growing at 35% annually, the size of the industry is projected to cross \$26 billion in the next five years, from over \$3 billion currently. The whole country is getting ready to cash in on this upcoming orange economy opportunity, which is currently in a sunrise phase, like information technology was over 30 years ago, said Mr. Kulkarni.

IICT, a government-backed institution, is modelled on IITs and IIMs to offer high-end training, research, and industry partnerships for AVGC-XR.

"Karnataka is the first to introduce a policy for the AVGC sector and it recently released 3.0 version of it, indicating its lead. Karnataka, Maharashtra, Telangana, Kerala, Madhya Pradesh and Rajasthan are the States that have active AVGC-XR policies now," Mr. Kulkarni said.

Similar policies which are under the Cabinet approval right now are of Haryana, Punjab, Delhi, Uttar Pradesh, Assam, West Bengal, Orissa, Tamil Nadu,

Karnataka, the first to introduce a policy for the AVGC sector, recently released a 3.0 version of it

Gujarat, and Andhra Pradesh. He further said, "We have initiated talks with Sikkim, Meghalaya, Nagaland, Tripura, and Jammu and Kashmir right now. The CM of J&K recently visited IICT to understand the scope of things and he is very keen to work on an AVGC-XR policy."

According to Priyanka Kharge, Karnataka's IT Minister, a complete ecosystem, comprising technology platforms, investor community and skilling, is getting ready currently to unleash the huge growth potential the AVGC-XR sector offers. "Karnataka is the country's pioneer in the AVGC-XR space. Over a decade ago itself we introduced the country's first AVGC policy and at the end of last year we unveiled the third updation of the policy stating our preparedness to grow this industry to the maximum to create true global jobs for our young people," he said.

Mr. Kharge was speaking on the sidelines of GAFX 2026, the state's annual AVGC-XR exposition that brought together the who's who from the film and creative industries from across the world.

Mr. Kulkarni said talent was the critical piece for the industry to work on and develop, especially because India never had creative arts and sports learning in school curriculums.

01Mar. 'Most Indian states are keen to explore growth in orange economy'

'अधिकांश भारतीय राज्य ऑरेंज इकोनॉमी में विकास की संभावनाओं को तलाशने के इच्छुक हैं'

• India's animation, visual effects, gaming, and comics-extended reality (AVGCXR) sector, an integral part of the country's upcoming Orange Economy, is preparing to take full advantage of the employment and economic growth potential it promises, according to Ashish Kulkarni, Director, Indian Institute of Creative Technologies (IICT).

भारत का एनिमेशन, विजुअल इफेक्ट्स, गेमिंग और कॉमिक्स-एक्सटेन्डेड रियलिटी (AVGCXR) क्षेत्र, जो देश की उभरती ऑरेंज इकोनॉमी का एक महत्वपूर्ण हिस्सा है, अपने द्वारा वादा किए गए रोजगार और आर्थिक विकास की संभावनाओं का पूरा लाभ उठाने की तैयारी कर रहा है, ऐसा अशिष कुलकर्णी, निदेशक, इंडियन इंस्टीट्यूट ऑफ क्रिएटिव टेक्नोलॉजीज (IICT) ने कहा।

• The sector is expected to create over 20 lakh jobs by 2030.

इस क्षेत्र से 2030 तक 20 लाख से अधिक नौकरियाँ पैदा होने की उम्मीद है।

• Growing at 35% annually, the size of the industry is projected to cross \$26 billion in the next five years, from over \$3 billion currently. 35% वार्षिक वृद्धि के साथ, इस उद्योग का आकार वर्तमान के 3 अरब डॉलर से बढ़कर अगले पाँच वर्षों में 26 अरब डॉलर से अधिक होने का अनुमान है।

• The whole country is getting ready to cash in on this upcoming orange economy opportunity, which is currently in a sunrise phase, like information technology was over 30 years ago, said Mr. Kulkarni.

पूरा देश इस उभरते हुए ऑरेंज इकोनॉमी अवसर का लाभ उठाने की तैयारी कर रहा है, जो अभी सनराइज फेज में है, ठीक वैसे ही जैसे सूचना प्रौद्योगिकी (आईटी) लगभग 30 साल पहले थी, ऐसा कुलकर्णी ने कहा।

• IICT, a government-backed institution, is modeled on IITs and IIMs to offer high-end training, research, and industry partnerships for AVGC-XR.

IICT, एक सरकार समर्थित संस्थान, को IITs और IIMs के मॉडल पर बनाया गया है ताकि AVGC-XR के लिए उच्च स्तरीय प्रशिक्षण, अनुसंधान और उद्योग साझेदारी प्रदान की जा सके।

• "Karnataka is the first to introduce a policy for the AVGC sector and it recently released 3.0

version of it, indicating its lead.

"कर्नाटक AVGC क्षेत्र के लिए नीति शुरू करने वाला पहला राज्य है और हाल ही में उसने इसका 3.0 संस्करण जारी किया है, जो उसकी अग्रणी भूमिका को दर्शाता है।

- Karnataka, Maharashtra, Telangana, Kerala, Madhya Pradesh and Rajasthan are the States that have active AVGC-XR policies now, Mr. Kulkarni said.



कर्नाटक, महाराष्ट्र, तेलंगाना, केरल, मध्य प्रदेश और राजस्थान वे राज्य हैं जिनके पास वर्तमान में सक्रिय AVGC-XR नीतियाँ हैं, ऐसा कुलकर्णी ने कहा।

- Similar policies which are under the Cabinet approval right now are of Haryana, Punjab, Delhi, Uttar Pradesh, Assam, West Bengal, Orissa, Tamil Nadu, Gujarat, and Andhra Pradesh.
इसी तरह की नीतियाँ, जो अभी कैबिनेट की मंजूरी के अधीन हैं, हरियाणा, पंजाब, दिल्ली, उत्तर प्रदेश, असम, पश्चिम बंगाल, ओडिशा, तमिलनाडु, गुजरात और आंध्र प्रदेश की हैं।
- He further said, "We have initiated talks with Sikkim, Meghalaya, Nagaland, Tripura, and Jammu and Kashmir right now.
उन्होंने आगे कहा, "हमने अभी सिक्किम, मेघालय, नागालैंड, त्रिपुरा और जम्मू-कश्मीर के साथ बातचीत शुरू की है।
- The CM of J&K recently visited IICT to understand the scope of things and he is very keen to work on an AVGC-XR policy."
हाल ही में जम्मू-कश्मीर के मुख्यमंत्री ने IICT का दौरा किया ताकि संभावनाओं का दायरा समझ सकें और वे AVGC-XR नीति पर काम करने के लिए बहुत उत्सुक हैं।"
- According to Priyank Kharge, Karnataka's IT Minister, a complete ecosystem, comprising technology platforms, investor community and skilling, is getting ready currently to unleash the huge growth potential the AVGC-XR sector offers.
कर्नाटक के आईटी मंत्री प्रियंक खड़गे के अनुसार, प्रौद्योगिकी प्लेटफॉर्म, निवेशक समुदाय और कौशल विकास से मिलकर बना एक पूरा इकोसिस्टम वर्तमान में तैयार हो रहा है ताकि AVGC-XR क्षेत्र द्वारा प्रदान की जाने वाली विशाल विकास क्षमता को उजागर किया जा सके।
- "Karnataka is the country's pioneer in the AVGC-XR space.
"कर्नाटक AVGC-XR क्षेत्र में देश का अग्रदूत (पायनियर) है।
- Over a decade ago itself we introduced the country's first AVGC policy and at the end of last year we unveiled the third update of the policy stating our preparedness to grow this industry to the maximum to create true global jobs for our young people," he said.
लगभग एक दशक पहले ही हमने देश की पहली AVGC नीति शुरू की थी और पिछले वर्ष के अंत में हमने नीति का तीसरा अद्यतन प्रस्तुत किया, जो इस उद्योग को अधिकतम बढ़ाने और हमारे युवाओं के लिए वास्तविक वैश्विक नौकरियाँ पैदा करने की हमारी तैयारी को दर्शाता है," उन्होंने कहा।
- Mr. Kharge was speaking on the sidelines of GAFX 2026, the state's annual AVGC-XR exposition that brought together the who's who from the film and creative industries from across the world.
खड़गे GAFX 2026 के साइडलाइन पर बोल रहे थे, जो राज्य का वार्षिक AVGC-XR प्रदर्शनी कार्यक्रम है, जिसमें दुनिया भर से फिल्म और रचनात्मक उद्योगों के प्रमुख लोग शामिल हुए।
- Mr. Kulkarni said talent was the critical piece for the industry to work on and develop, especially because India never had creative arts and sports learning in school curriculums.
कुलकर्णी ने कहा कि प्रतिभा इस उद्योग के विकास के लिए सबसे महत्वपूर्ण तत्व है, खासकर इसलिए क्योंकि भारत में स्कूल पाठ्यक्रमों में कभी रचनात्मक कला और खेल शिक्षा शामिल नहीं रही।

GS Paper III: S&T,	
TOPICS COVERED	01 March 2026
01Mar	Centre suspends rice fortification scheme; activists back move केंद्र ने चावल फोर्टिफिकेशन योजना निलंबित की; कार्यकर्ताओं ने फैसले का समर्थन किया
01Mar	On this Rare Diseases Day, unspent budget and untreated patients remain a concern इस Rare Diseases Day पर अप्रयुक्त बजट और बिना उपचार वाले मरीज चिंता का विषय बने हुए हैं
01Mar	Sungudi shimmer सुंगुड़ी शिमर
01Mar	Mosquitoes began biting hominins 1.8 million years ago: study



	मच्छरों ने 18 लाख वर्ष पहले होमिनिन्स को काटना शुरू किया: अध्यय
01Mar	Radio whistles are first clear sign of Mars lightning रेडियो सीटी मंगल ग्रह पर बिजली का पहला स्पष्ट संकेत हैं
01Mar	A small piece of RNA copies itself, hinting at how life began आरएनए का एक छोटा टुकड़ा स्वयं की प्रतिलिपि बनाता है, जिससे जीवन की शुरुआत का संकेत मिलता है
01Mar	The Inverse Law of AI: how capital rises as responsibility falls एआई का उल्टा नियम: कैसे पूंजी बढ़ती है जब जिम्मेदारी घटती है
01Mar	Why do so many flowers have five petals? क्यों कई फूलों में पाँच पंखुड़ियाँ होती हैं?

Centre suspends rice fortification scheme; activists back move

GS III: S&T
The Hindu Bureau
NEW DELHI

As the Union Food Ministry decided to temporarily discontinue the process of rice fortification "until a more effective mechanism for delivery of nutrients to beneficiaries is identified", activists who had challenged the scheme in the Supreme Court have welcomed the move, and said fortification is not a scientific method to curb anaemia.



Activists say rice fortification is not a scientific method to curb anaemia. REUTERS

On Friday, the government announced that it had reviewed the implementation of rice fortification under the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) and other welfare schemes. "Based on this review, it has been decided to temporarily discontinue the process of rice fortification under PMGKAY and allied schemes until a more effective mechanism for delivery of nutrients to beneficiaries is identified," the Food Ministry said, citing a study by the IIT, Kharagpur to assess the shelf life of fortified rice kernels and fortified rice under actual storage conditions in diverse agro climatic zones in the country.

"The report concludes that factors such as moisture content, storage conditions, temperature, relative humidity, and packaging material critical-

ly influence their stability and shelf life. They are susceptible to micronutrient reduction and shortening of shelf life during prolonged storage and routine handling. This reduction is rendering the effective shelf life shorter than expected and, in turn, limiting the intended nutritional outcomes," the release added. The government maintained that the decision does not entail any reduction in foodgrain entitlements and will not affect operations under the public distribution system.

Social activist Kavitha Kuruganti said rice fortification is an expensive and ineffective intervention, which is unsafe and toxic. "While the government is citing a study to stop this large-scale fortification, we had shown much evidence that not all anaemia is linked to iron deficiency, nor is fortification an effective solution," she said.

01Mar. Centre suspends rice fortification scheme; activists back move

केंद्र ने चावल फोर्टिफिकेशन योजना निलंबित की; कार्यकर्ताओं ने फैसले का समर्थन किया

As the **Union Food Ministry** decided to temporarily discontinue the process of **rice fortification** "until a more effective mechanism for delivery of nutrients to beneficiaries is identified", activists who had challenged the scheme in the **Supreme Court** have welcomed the move, and said fortification is not a scientific method to curb **anaemia**.

जब **केंद्रीय खाद्य मंत्रालय** ने चावल फोर्टिफिकेशन की प्रक्रिया को अस्थायी रूप से बंद करने का निर्णय लिया, "जब तक कि लाभार्थियों तक पोषक तत्वों की आपूर्ति के लिए अधिक प्रभावी तंत्र की पहचान नहीं हो जाती", तब **सुप्रीम कोर्ट** में इस योजना को चुनौती देने वाले कार्यकर्ताओं ने इस कदम का स्वागत किया और कहा कि फोर्टिफिकेशन **एनीमिया** को रोकने का वैज्ञानिक तरीका नहीं है।

On Friday, the **government** announced that it had reviewed the implementation of **rice fortification** under the **Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)** and other **welfare schemes**.

शुक्रवार को **सरकार** ने घोषणा की कि उसने **प्रधानमंत्री गरीब कल्याण अन्न योजना (PMGKY)** और अन्य **कल्याणकारी योजनाओं** के तहत **चावल फोर्टिफिकेशन** के क्रियान्वयन की समीक्षा की है।

"Based on this review, it has been decided to temporarily discontinue the process of **rice fortification** under **PMGKAY** and allied schemes until a more effective mechanism for delivery of nutrients to beneficiaries is identified," the **Food Ministry** said, citing a study by the **IIT, Kharagpur** to assess the **shelf life** of fortified rice kernels and fortified rice under actual storage conditions in diverse **agro climatic zones** in the country.

"इस समीक्षा के आधार पर यह निर्णय लिया गया है कि **PMGKY** और उससे जुड़ी योजनाओं के तहत **चावल फोर्टिफिकेशन** की प्रक्रिया को अस्थायी रूप से बंद किया जाए, जब तक कि लाभार्थियों तक पोषक तत्वों की आपूर्ति के लिए अधिक प्रभावी तंत्र की पहचान नहीं हो जाती," **खाद्य मंत्रालय** ने कहा, और **IIT खड़गपुर** के एक अध्ययन का हवाला दिया जिसमें विभिन्न **कृषि-जलवायु क्षेत्रों** में वास्तविक भंडारण परिस्थितियों में फोर्टिफाइड चावल के दानों और चावल की **शेल्फ**



लाइफ का आकलन किया गया।

- “The report concludes that factors such as **moisture content, storage conditions, temperature, relative humidity, and packaging material** critically influence their stability and **shelf life**.
“रिपोर्ट में निष्कर्ष निकाला गया है कि **नमी की मात्रा, भंडारण की स्थिति, तापमान, सापेक्ष आर्द्रता और पैकेजिंग सामग्री** जैसे कारक उनकी स्थिरता और **शेल्फ लाइफ** को गंभीर रूप से प्रभावित करते हैं।
- They are susceptible to **micronutrient reduction** and shortening of shelf life during **prolonged storage** and routine handling.
लंबे समय तक **भंडारण** और सामान्य हैंडलिंग के दौरान इनमें **सूक्ष्म पोषक तत्वों की कमी** और शेल्फ लाइफ में कमी आने की संभावना रहती है।
- This reduction is rendering the effective **shelf life** shorter than expected and, in turn, limiting the intended **nutritional outcomes**,” the release added.
यह कमी प्रभावी **शेल्फ लाइफ** को अपेक्षा से कम कर रही है और इसके परिणामस्वरूप अपेक्षित **पोषण संबंधी परिणामों** को सीमित कर रही है,” विज्ञप्ति में जोड़ा गया।
- The **government** maintained that the decision does not entail any reduction in **foodgrain entitlements** and will not affect operations under the **public distribution system**.
सरकार ने कहा कि इस निर्णय से **अनाज के अधिकार** में कोई कमी नहीं होगी और **सार्वजनिक वितरण प्रणाली (PDS)** के संचालन पर कोई प्रभाव नहीं पड़ेगा।
- **Social activist Kavitha Kuruganti** said **rice fortification** is an expensive and ineffective intervention, which is unsafe and toxic.
सामाजिक कार्यकर्ता कविता कुरुगंती ने कहा कि **चावल फोर्टिफिकेशन** एक महंगा और अप्रभावी हस्तक्षेप है, जो असुरक्षित और विषैला है।
- “While the **government** is citing a study to stop this large-scale **fortification**, we had shown much evidence that not all **anaemia** is linked to **iron deficiency**, nor is fortification an effective solution,” she said.
“हालांकि **सरकार** बड़े पैमाने पर **फोर्टिफिकेशन** को रोकने के लिए एक अध्ययन का हवाला दे रही है, हमने कई प्रमाण प्रस्तुत किए हैं कि सभी **एनीमिया आयरन की कमी** से जुड़े नहीं होते और न ही फोर्टिफिकेशन इसका प्रभावी समाधान है,” उन्होंने कहा।

PATRIOTIC IAS



On this Rare Diseases Day, unspent budget and untreated patients remain a concern

GS III: S&T

Ramya Kannan
CHENNAI

Nayan was diagnosed with MPS 2, a rare genetic disorder, in 2016. His growth became stunted, and despite his best efforts to stay active and exercise, the disease does not let him live a normal life. "We had requested ₹1.25 crore from the government but got only ₹50 lakh from the Prime Minister's Office. That is less than half the amount we need to help Nayan live a normal life," says Jagdish Papnai, his father.

Alishba Khan, also from Delhi, is in a similar circumstance. Her father, Maqsood Alam, says the seven-year-old with Gaucher disease had begun to stabilise with treatment, thanks to the financial aid of ₹50 lakh given through



According to an RTI reply, the NPRD utilised only ₹30.79 crore of the ₹299 crore allocated for rare disease treatment. GETTY IMAGES

the National Policy for Rare Diseases (NPRD). When the funding ceiling was crossed in August 2024, Alishba's treatment stopped; since then, her condition has deteriorated, and even breathing has become difficult, he said.

On Rare Diseases Day, there is a strange sort of

crisis in India. A notified policy for rare diseases is in place, there are Centres of Excellence (CoEs) established across the country, and a robust budget to assist with treatment.

However, about ₹271 crore allocated for rare disease patients remains unused, and many of the chil-

dren are quietly but steadily losing their quality of life and hope.

A few children have already died waiting for a resolution. "With the Supreme Court hearing scheduled for March, patients are caught in limbo. We are witnessing the devastating reality of treatment interruptions. Every delay in restarting and sustaining therapy has life-altering consequences. We need immediate intervention to ensure continuity of care," says Saurabh Singh, founder of the Rare Disease India Foundation.

The rare diseases community, which has gained a voice over the years, points out that the current situation is completely untenable, particularly because the money actually exists. For the year 2025-26, ₹299

crore was allocated for rare disease treatment, but as per a reply to an RTI application by Manjit Singh, president of the Lysosomal Storage Disorders Society, only ₹30.79 crore has been utilised by the NPRD so far.

Care halted

"Nearly 2,000 rare disease patients across India are currently awaiting treatment, including around 450 eligible patients with life-threatening Lysosomal Storage Disorders (LSD). Alarmingly, approximately 100 children who had begun treatment have already exhausted the ₹50-lakh funding cap and now face a complete halt in life-saving care, pushing them back to square one. Eight patients have already died while waiting for treatment support," Mr. Singh explained.

01Mar. On this Rare Diseases Day, unspent budget and untreated patients remain a concern

इस Rare Diseases Day पर अप्रयुक्त बजट और बिना उपचार वाले मरीज चिंता का विषय बने हुए हैं

- **Nayan** was diagnosed with **MPS 2**, a rare genetic disorder, in 2016.
नयन को 2016 में **MPS 2**, जो एक दुर्लभ आनुवंशिक रोग है, का निदान हुआ था।
- His **growth** became **stunted**, and despite his best efforts to stay active and exercise, the **disease** does not let him live a **normal life**.
उसकी **वृद्धि** रुक गई और सक्रिय रहने तथा व्यायाम करने के प्रयासों के बावजूद यह **रोग** उसे **सामान्य जीवन** जीने नहीं देता।
- "We had requested **₹1.25 crore** from the **government** but got only **₹50 lakh** from the **Prime Minister's Office**.
"हमने **सरकार** से **₹1.25 करोड़** की मांग की थी लेकिन **प्रधानमंत्री कार्यालय** से केवल **₹50 लाख** ही मिले।
- That is less than half the amount we need to help **Nayan** live a **normal life**," says **Jagdish Papnai**, his father.
यह उस राशि के आधे से भी कम है जिसकी हमें **नयन** को **सामान्य जीवन** जीने में मदद करने के लिए आवश्यकता है," उसके पिता **जगदीश पपनई** कहते हैं।
- **Alishba Khan**, also from **Delhi**, is in a similar circumstance.
दिल्ली की **अलीशबा खान** भी इसी तरह की परिस्थिति में है।
- Her father, **Maqsood Alam**, says the **seven-year-old** with **Gaucher disease** had begun to stabilise with treatment, thanks to the **financial aid of ₹50 lakh** given through the **National Policy for Rare Diseases (NPRD)**.
उसके पिता **मकसूद आलम** कहते हैं कि **गौशर रोग** से पीड़ित **सात वर्षीय** बच्ची की स्थिति उपचार से स्थिर होने लगी थी, जिसका कारण **National Policy for Rare Diseases (NPRD)** के तहत मिली **₹50 लाख की वित्तीय सहायता** थी।
- When the **funding ceiling** was crossed in **August 2024**, **Alishba's treatment** stopped; since then, her **condition** has deteriorated, and even **breathing** has become difficult, he said.



जब अगस्त 2024 में फंडिंग सीमा पार हो गई, तो अलीशबा का इलाज रुक गया; तब से उसकी स्थिति बिगड़ गई है और यहां तक कि सांस लेना भी कठिन हो गया है।

- On Rare Diseases Day, there is a strange sort of crisis in India. Rare Diseases Day पर भारत में एक अजीब तरह का संकट देखने को मिल रहा है।
- A notified policy for rare diseases is in place, there are Centres of Excellence (CoEs) established across the country, and a robust budget to assist with treatment. दुर्लभ रोगों की नीति अधिसूचित है, देशभर में Centres of Excellence (CoEs) स्थापित हैं और उपचार में सहायता के लिए पर्याप्त बजट भी मौजूद है।
- However, about ₹271 crore allocated for rare disease patients remains unused, and many of the children are quietly but steadily losing their quality of life and hope. हालांकि दुर्लभ रोगों के मरीजों के लिए आवंटित लगभग ₹271 करोड़ अभी भी खर्च नहीं हुआ है, और कई बच्चे धीरे-धीरे अपनी जीवन गुणवत्ता और उम्मीद खो रहे हैं।
- A few children have already died waiting for a resolution. कुछ बच्चे समाधान की प्रतीक्षा करते हुए पहले ही मृत्यु को प्राप्त हो चुके हैं।
- “With the Supreme Court hearing scheduled for March, patients are caught in limbo. “मार्च में होने वाली सुप्रीम कोर्ट की सुनवाई के कारण मरीज अनिश्चित स्थिति में फंसे हुए हैं।
- We are witnessing the devastating reality of treatment interruptions. हम इलाज में रुकावटों की विनाशकारी वास्तविकता देख रहे हैं।
- Every delay in restarting and sustaining therapy has life-altering consequences. थेरेपी को फिर से शुरू करने और जारी रखने में हर देरी के जीवन बदल देने वाले परिणाम होते हैं।
- We need immediate intervention to ensure continuity of care,” says Saurabh Singh, founder of the Rare Disease India Foundation. हमें उपचार की निरंतरता सुनिश्चित करने के लिए तत्काल हस्तक्षेप की आवश्यकता है,” Rare Disease India Foundation के संस्थापक सौरभ सिंह कहते हैं।
- The rare diseases community, which has gained a voice over the years, points out that the current situation is completely untenable, particularly because the money actually exists. दुर्लभ रोग समुदाय, जिसने वर्षों में अपनी आवाज बनाई है, बताता है कि वर्तमान स्थिति पूरी तरह अस्वीकार्य है, खासकर इसलिए क्योंकि पैसा वास्तव में मौजूद है।
- For the year 2025–26, ₹299 crore was allocated for rare disease treatment, but as per a reply to an RTI application by Manjit Singh, president of the Lysosomal Storage Disorders Society, only ₹30.79 crore has been utilised by the NPRD so far. वर्ष 2025–26 के लिए दुर्लभ रोग उपचार हेतु ₹299 करोड़ आवंटित किए गए थे, लेकिन Lysosomal Storage Disorders Society के अध्यक्ष मनजीत सिंह द्वारा दायर RTI आवेदन के उत्तर के अनुसार अभी तक NPRD द्वारा केवल ₹30.79 करोड़ ही उपयोग किए गए हैं।

Care halted उपचार रुका

- “Nearly 2,000 rare disease patients across India are currently awaiting treatment, including around 450 eligible patients with life-threatening Lysosomal Storage Disorders (LSD). “भारत भर में लगभग 2,000 दुर्लभ रोगों के मरीज इस समय उपचार की प्रतीक्षा कर रहे हैं, जिनमें लगभग 450 पात्र मरीज जानलेवा Lysosomal Storage Disorders (LSD) से पीड़ित हैं।
- Alarmingly, approximately 100 children who had begun treatment have already exhausted the ₹50-lakh funding cap and now face a complete halt in life-saving care, pushing them back to square one. चिंताजनक रूप से लगभग 100 बच्चे, जिन्होंने उपचार शुरू किया था, ₹50 लाख की फंडिंग सीमा समाप्त कर चुके हैं और अब जीवनरक्षक उपचार पूरी तरह रुकने का सामना कर रहे हैं, जिससे वे फिर से शुरुआती स्थिति में पहुंच गए हैं।
- Eight patients have already died while waiting for treatment support,” Mr. Singh explained. आठ मरीज उपचार सहायता की प्रतीक्षा करते हुए पहले ही मृत्यु को प्राप्त हो चुके हैं,” श्री सिंह ने बताया।



Sungudi shimmer

GS III S&T

Sungudi sari, a signature styling perfected by Saurashtrians who migrated to Madurai, weaves time and tale into every delicate thread



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Folklore tells of two handloom weavers who were resting on the banks of the Vaigai river. Inspired by the star-spangled night sky, they invented the tie-and-dye motif that has now become synonymous with Madurai. This signature styling on traditional cotton saris was awarded the GI tag on December 12, 2005.

Perfected by the Saurashtrian community that had migrated from Gujarat to Madurai in the 17th century, these iconic saris reveal the artistic and exquisite talent of the weaver.

On a base cloth mostly woven with a zari border, artisans painstakingly hand-knot the required patterns. This is then dyed in various

shades. Later, the knots are untied and after a final wash to remove excess dye, it is starched and left to dry in the sun. It is then that the sari reveals an intricate design, with some bearing more than 15,000 quirky white dots.

Now, these breathable garments are a must-have in the wardrobes of both the young and the old. For a cotton sari to transform into a sungudi, it takes more than 15 days.

With prices ranging from ₹500 to even ₹20,000 depending on the thread count, this timeless handloom art needs the much-needed nudge to be showcased in international fashion shows.

Text by Beulah Rose



Hands in motion: Women painstakingly make knots before the tie-and-dye process.

01Mar. Sungudi shimmer सुंगुड़ी शिमर

- **Sungudi sari**, a signature styling perfected by **Saurashtrians** who migrated to **Madurai**, weaves time and tale into every delicate thread.
सुंगुड़ी साड़ी, एक विशिष्ट शैली जिसे **सौराष्ट्रियों** ने परिपूर्ण बनाया जो **मदुरै** में आकर बसे, हर नाजूक धागे में समय और कहानी को बुनती है।
- **Folklore** tells of two **handloom weavers** who were resting on the banks of the **Vaigai river**. **लोककथा** दो **हाथकरघा बुनकरों** की कहानी बताती है जो **वैगई नदी** के किनारे आराम कर रहे थे।
- Inspired by the **star-spangled night sky**, they invented the **tie-and-dye motif** that has now become synonymous with **Madurai**.
तारों से भरे रात के आकाश से प्रेरित होकर उन्होंने **टाई-एंड-डाय डिज़ाइन** का आविष्कार किया जो अब **मदुरै** का पर्याय बन चुका है।
- This signature styling on traditional **cotton saris** was awarded the **GI tag** on **December 12, 2005**.
पारंपरिक **कॉटन साड़ियों** पर यह विशिष्ट शैली **12 दिसंबर 2005** को **GI टैग** से सम्मानित की गई।
- Perfected by the **Saurashtrian community** that had migrated from **Gujarat** to **Madurai** in the **17th century**, these iconic saris reveal the artistic and exquisite talent of the weaver.
17वीं शताब्दी में **गुजरात** से **मदुरै** आए **सौराष्ट्रीय समुदाय** द्वारा परिपूर्ण की गई ये प्रतिष्ठित साड़ियाँ बुनकर की कलात्मक और उत्कृष्ट प्रतिभा को दर्शाती हैं।
- On a base cloth mostly woven with a **zari border**, artisans painstakingly **hand-knot** the required patterns.
एक आधार कपड़े पर जो अधिकतर **ज़री बॉर्डर** के साथ बुना होता है, कारीगर आवश्यक डिज़ाइनों को मेहनत से **हाथ से गाँठ** लगाते हैं।
- This is then **dyed in various shades**.
इसके बाद इसे **विभिन्न रंगों** में **रंगा** जाता है।
- Later, the **knots are untied** and after a **final wash** to remove excess dye, it is **starched** and left to **dry in the sun**.
बाद में **गाँठों को खोला** जाता है और अतिरिक्त रंग हटाने के लिए **अंतिम धुलाई** के बाद इसे **स्टार्च** किया जाता है और **धूप में सुखाने** के लिए छोड़ दिया जाता है।
- It is then that the **sari reveals an intricate design**, with some bearing more than **15,000 quirky white dots**.
तभी साड़ी एक **जटिल डिज़ाइन** प्रकट करती है, जिनमें कुछ पर **15,000 से अधिक अनोखे सफेद बिंदु** होते हैं।
- Now, these **breathable garments** are a **must-have** in the wardrobes of both the **young and the old**.
अब ये **हवादार वस्त्र युवा और बुजुर्ग** दोनों की अलमारियों में **जरूरी परिधान** बन गए हैं।
- For a **cotton sari** to transform into a **sungudi**, it takes more than **15 days**.
एक **कॉटन साड़ी** को **सुंगुड़ी** में बदलने में **15 दिनों से अधिक** समय लगता है।
- With prices ranging from **₹500** to even **₹20,000** depending on the **thread count**, this timeless **handloom art** needs the much-needed **nudge** to be showcased in **international fashion shows**.



धागों की संख्या (थ्रेड काउंट) के आधार पर ₹500 से ₹20,000 तक की कीमत वाली यह कालातीत हाथकरघा कला अंतरराष्ट्रीय फैशन शो में प्रदर्शित होने के लिए आवश्यक प्रोत्साहन की मांग करती है।

Mosquitoes began biting hominins 1.8 million years ago: study

GS III: S&T
Divya Gandhi

Between 1992 and 2020, a group of intrepid scientists walked deep into the forests of Sundaland, across the Malay Peninsula, Sumatra, Java, and Borneo, to collect mosquito larvae of 11 species to understand the evolutionary origins of anthropophily, or the affinity for humans.

In a new paper in *Scientific Reports*, the researchers have written, "can provide critical insights into

mitigating the impacts of novel diseases due to mosquito-borne pathogens."

Every year, mosquito-borne diseases kill more than 6 lakh people worldwide, according to the World Health Organization. But this is hardly new: according to the new study, mosquitoes first began to 'feed' on humans, thus transferring disease-causing microbes into their blood in exchange, in the Pleistocene epoch around 1.8 million years ago in

Southeast Asia.

Today, several species of mosquitoes are highly anthropophilic as well as very efficient vectors of human malaria parasites.

The malaria-causing mosquito group, including the important vector *Anopheles leucosphyrus*, encompasses around 20 species in South and Southeast Asia, including in Northeast India, and each species has different host preferences. While some feed on non-human

animals in forest canopies, such as monkeys, gibbons, and orangutans, others feed on humans on the ground, and some on both, according to the study paper. "The establishment of anthropophily in multiple species of the ... group could be attributed to the trait evolving independently multiple times following the arrival of anatomically modern humans in [South-east] Asia 76,000-63,000 years ago," the paper read. "Alternatively, anthro-

pophily may have evolved once in an ancestral species, possibly in response to the colonisation of Southeast Asia by early hominins. Conservative estimates place *Homo erectus* in China at least 1.6-1.7 million years ago (Mya), and possibly as long ago as 2.4 Mya. However, the timeline of hominin colonisation southwards into Southeast Asia remains contentious." Later in the Pliocene epoch, open forests transi-

tioned to savannah, forcing terrestrial mammals to adapt to new habitats. Now, the abundance of ground-dwelling host species could have triggered an "adaptive evolutionary innovation" in the way mosquitoes sought their hosts – and this shift, per the paper, could have paved the way to 'feed' on humans. The researchers used phylogenomic tools to analyse the evolution of mosquitoes and their preferred hosts.

01Mar. Mosquitoes began biting hominins 1.8 million years ago: study — मच्छरों ने 18 लाख वर्ष पहले होमिनिन्स को काटना शुरू किया: अध्ययन

- Between 1992 and 2020, a group of intrepid scientists walked deep into the forests of Sundaland, across the Malay Peninsula, Sumatra, Java, and Borneo, to collect mosquito larvae of 11 species to understand the evolutionary origins of anthropophily, or the affinity for humans.
1992 से 2020 के बीच साहसी वैज्ञानिकों का एक समूह सुंडालैंड के जंगलों में गहराई तक गया, जो मलय प्रायद्वीप, सुमात्रा, जावा और बोर्नियो में फैले हैं, ताकि मच्छरों की 11 प्रजातियों के लार्वा एकत्र कर एन्थ्रोपोफिली के विकासवादी मूल या मनुष्यों के प्रति आकर्षण को समझ सके।
- In a new paper in *Scientific Reports*, the researchers have written, "can provide critical insights into mitigating the impacts of novel diseases due to mosquito-borne pathogens."
Scientific Reports में प्रकाशित एक नए शोधपत्र में शोधकर्ताओं ने लिखा है कि यह अध्ययन मच्छरों द्वारा फैलने वाले रोगजनकों से उत्पन्न नई बीमारियों के प्रभाव को कम करने के लिए महत्वपूर्ण अंतर्दृष्टि प्रदान कर सकता है।
- Every year, mosquito-borne diseases kill more than 6 lakh people worldwide, according to the World Health Organization.
हर साल मच्छरों से फैलने वाली बीमारियाँ दुनिया भर में 6 लाख से अधिक लोगों की मृत्यु का कारण बनती हैं, यह विश्व स्वास्थ्य संगठन (WHO) के अनुसार है।
- But this is hardly new: according to the new study, mosquitoes first began to 'feed' on humans, thus transferring disease-causing microbes into their blood in exchange, in the Pleistocene epoch around 1.8 million years ago in Southeast Asia.
लेकिन यह नई बात नहीं है: नए अध्ययन के अनुसार मच्छरों ने पहली बार मनुष्यों का रक्त पीना शुरू किया, जिससे वे रोग पैदा करने वाले सूक्ष्मजीवों को मनुष्यों के रक्त में स्थानांतरित करने लगे, यह घटना प्लाइस्टोसीन युग में लगभग 18 लाख वर्ष पहले दक्षिण-पूर्व एशिया में हुई।
- Today, several species of mosquitoes are highly anthropophilic as well as very efficient vectors of human malaria parasites.
आज मच्छरों की कई प्रजातियाँ अत्यधिक एन्थ्रोपोफिलिक हैं और मानव मलेरिया परजीवियों के प्रभावी वाहक भी हैं।
- The malaria-causing mosquito group, including the important vector *Anopheles leucosphyrus*, encompasses around 20 species in South and Southeast Asia, including in Northeast India, and each species has different host preferences.
मलेरिया फैलाने वाले मच्छरों का समूह, जिसमें महत्वपूर्ण वाहक *Anopheles leucosphyrus* शामिल है, दक्षिण और दक्षिण-पूर्व एशिया में लगभग 20 प्रजातियों को शामिल करता है, जिनमें पूर्वोत्तर भारत भी शामिल है, और प्रत्येक प्रजाति की मेज़बान पसंद अलग होती है।
- While some feed on non-human animals in forest canopies, such as monkeys, gibbons, and orangutans, others feed on humans on the ground, and some on both, according to



the study paper.

अध्ययन के अनुसार कुछ प्रजातियाँ वनों की ऊपरी छतरी (कैनोपी) में रहने वाले गैर-मानव जानवरों, जैसे बंदर, गिबन और ओरंगुटान, का रक्त पीती हैं, जबकि कुछ जमीन पर रहने वाले मनुष्यों का रक्त पीती हैं और कुछ दोनों का।

- “The establishment of **anthropophily** in multiple species of the group could be attributed to the trait **evolving independently multiple times** following the arrival of **anatomically modern humans in Southeast Asia 76,000-63,000 years ago,**” the paper read.
शोधपत्र के अनुसार इस समूह की कई प्रजातियों में एन्थ्रोपोफिली की स्थापना संभवतः इस कारण हुई कि यह गुण कई बार स्वतंत्र रूप से विकसित हुआ, जब आधुनिक शारीरिक संरचना वाले मनुष्य लगभग 76,000-63,000 वर्ष पहले दक्षिण-पूर्व एशिया पहुँचे।
- “Alternatively, **anthropophily** may have evolved once in an **ancestral species**, possibly in response to the **colonisation of Southeast Asia by early hominins**.
“वैकल्पिक रूप से, एन्थ्रोपोफिली संभवतः किसी पूर्वज प्रजाति में एक बार विकसित हुई होगी, संभवतः प्रारंभिक होमिनिन्स द्वारा दक्षिण-पूर्व एशिया के उपनिवेशीकरण के जवाब में।
- Conservative estimates place **Homo erectus** in **China** at least **1.6-1.7 million years ago (Mya)**, and possibly as long ago as **2.4 Mya**.
सावधानीपूर्ण अनुमान बताते हैं कि होमो इरेक्टस चीन में कम से कम 1.6-1.7 मिलियन वर्ष पहले मौजूद थे और संभवतः 2.4 मिलियन वर्ष पहले तक भी।
- However, the timeline of **hominin colonisation southwards into Southeast Asia** remains **contentious**.
हालाँकि दक्षिण की ओर दक्षिण-पूर्व एशिया में होमिनिन्स के उपनिवेशीकरण की समयरेखा अभी भी विवादित बनी हुई है।
- Later in the **Pliocene epoch**, **open forests** transitioned to **savannah**, forcing **terrestrial mammals** to adapt to **new habitats**.
बाद में प्लायोसीन युग में खुले वन बदलकर सवाना बन गए, जिससे स्थलीय स्तनधारियों को नए आवासों के अनुसार अनुकूलन करना पड़ा।
- Now, the abundance of **ground-dwelling host species** could have triggered an “**adaptive evolutionary innovation**” in the way **mosquitoes sought their hosts** — and this shift, per the paper, could have paved the way to “**feed**” on humans.
अब भूमि पर रहने वाली मेज़बान प्रजातियों की अधिकता ने संभवतः मच्छरों के अपने मेज़बान खोजने के तरीके में एक “अनुकूली विकासवादी नवाचार” को जन्म दिया — और इस बदलाव ने संभवतः मनुष्यों का रक्त पीने का मार्ग प्रशस्त किया।
- The researchers used **phylogenomic tools** to analyse the **evolution of mosquitoes** and their **preferred hosts**.
शोधकर्ताओं ने फाइलोजेनोमिक उपकरणों का उपयोग करके मच्छरों के विकास और उनके पसंदीदा मेज़बानों का विश्लेषण किया।



Radio whistles are first clear sign of Mars lightning

Scientists have reported the first clear evidence of lightning on Mars. Using data from NASA's MAVEN mission, they detected a type of radio wave called a whistler. On earth, whistlers are created by lightning strikes and get their name because they sound like a descending whistle as they travel through particles in the atmosphere. The study says a similar electric discharge occurred near the Martian surface, likely generated by electrically charged dust grains during a storm.

01Mar. Radio whistles are first clear sign of Mars lightning रेडियो सीटी मंगल ग्रह पर बिजली का पहला स्पष्ट संकेत हैं

- Scientists have reported the **first clear evidence of lightning on Mars**.
वैज्ञानिकों ने मंगल ग्रह पर बिजली के पहले स्पष्ट सबूत की रिपोर्ट की है।
- Using data from **NASA's MAVEN mission**, they detected a type of **radio wave** called a **whistler**.
नासा के MAVEN मिशन के आंकड़ों का उपयोग करते हुए, उन्होंने **व्हिस्लर** नामक रेडियो तरंगों के एक प्रकार का पता लगाया।
- On **Earth**, **whistlers** are created by **lightning strikes** and get their name because they sound like a **descending whistle** as they travel through **particles in the atmosphere**.
पृथ्वी पर, **व्हिस्लर तरंगें बिजली गिरने** से बनती हैं और उन्हें यह नाम इसलिए मिला क्योंकि वे **वायुमंडल में कणों के बीच से गुजरते समय नीचे जाती हुई सीटी** जैसी आवाज़ निकालती हैं।
- The study says a similar **electric discharge** occurred near



the **Martian surface**, likely generated by **electrically charged dust grains during a storm**.
अध्ययन के अनुसार, इसी तरह का विद्युत निर्वहन मंगल की सतह के पास हुआ, जो संभवतः तूफान के दौरान विद्युत रूप से आवेशित धूल कणों से उत्पन्न हुआ था।

A small piece of RNA copies itself, hinting at how life began

Scientists have reported the first evidence of a small RNA molecule that can make copies of itself; the molecule, dubbed QT45, strengthens RNAs case to be the earth's first genetic material, but doesn't prove it

CS III: S&T

Arun Panchapakesan

In a 1953 experiment, two scientists named Stanley Miller and Harold Urey attempted to recreate the conditions of the early earth long before life existed. They showed that organic molecules such as amino acids, the building blocks of proteins, could form spontaneously in the conditions that prevailed on a primitive earth, 3.5-4 billion years ago.

While the experiment was revolutionary, it did not settle the question of life's origins. Critics pointed out that while amino acids could form, there was still no sign of genetic material, i.e. neither DNA nor RNA. Living organisms don't merely contain proteins: they rely on genetic information encoded in DNA or RNA to build them. Demonstrating that proteins could arise was therefore only part of the story.

Importantly, life must be able to produce more life. For that, a primitive system would need genetic information and also a way to copy that information. This created a problem. Usually, DNA or RNA stores instructions to make proteins called polymerases. These polymerases then copy the DNA or RNA so that, when a cell divides, each new cell receives a complete set of genetic information. It was and remains a classic chicken-or-egg problem.

Then, in the early 1980s,



An illustration of the hammerhead ribozyme; QT45 is also a ribozyme
WILLIAM G. SCOTT (CC BY-SA)

From matter to life

QT45 suggests self-replicating RNAs could be the way life first began on the earth

- The Miller-Urey experiment in 1953 showed that amino acids can form naturally but it didn't explain heredity
- Life needs a way to store and copy information, but scientists aren't sure which came first: genes or proteins
- Scientists have also found that RNA can do simple

chemical reactions, suggesting RNA could be the earliest genetic material

■ Scientists also know that some RNA enzymes can copy other RNAs, but couldn't help RNAs make copies of themselves

■ A new study in *Science* has found a short RNA called QT45 that can self-replicate, albeit very slowly

■ QT45 is also imperfect, which means natural selection can act on it and help it 'evolve'

scientists discovered that RNA itself could perform simple chemical reactions, including being able to cut and paste pieces of itself. This discovery strongly shifted scientists' thinking towards the possibility that RNA could have been the earliest genetic material on the primitive earth. If a single molecule could both store information and carry out chemical reactions, it could bypass the chicken-and-egg problem of needing proteins to copy genetic material.

However, while scientists have already developed RNA molecules that could build other RNA molecules, they still lack an RNA that could copy the information contained within itself. The difficulty was structural: the RNA enzymes capable of copying other RNA were large and complex – between 150-

300 nucleotides – and in trying to fold into their functional shapes they could not easily serve as templates for their own replication. In other words, RNA could help other proteins replicate but couldn't self-replicate.

Now, however, in a paper in *Science*, scientists from the MRC Laboratory of Molecular Biology in the U.K. have reported that they have generated a self-replicating RNA molecule. Specifically, the researchers produced a small RNA molecule, just 45 nucleotides long, that could copy its own genetic information.

To do this, they first sifted through enormous pools of RNA, building on earlier work with much larger RNA enzymes, and repeatedly selected those rare sequences that showed even faint signs of

replication. This led to the development of QT45, which is, according to the researchers, the world's first RNA molecule that can make copies of itself.

However, while the QT45 RNA can do this, its process of self-replication was extraordinarily slow and required special conditions. Producing a single full-length copy took weeks. In contrast, modern cellular polymerases can copy 45 nucleotides in less than a second.

Though the difference is dramatic, primitive earth had millions of years, so even QT45's stringent and slow copying conditions could realistically have occurred and been sustained.

Also, modern enzymes add nucleotides one at a time, reading the template, and making a new chain of complementary nucleo-

tides. QT45 used short three-nucleotide building blocks, even if it also followed the same logic: it first assembled a complementary negative strand, then used that as the template to reproduce the original copy.

However, the most striking, and in many ways the most beautiful, feature of the QT45 RNA was that it was imperfect. Its copying accuracy was only about 92-94%. This means it makes mistakes when replicating the genetic information, a property at the core of a true copying system. Every mistake creates variation, and variations are the raw material upon which natural selection can act.

While the development of the QT45 RNA is indeed a breakthrough, it is important to remember that while it strengthens RNA's case as the first genetic material, it doesn't prove it. QT45 merely shows that self-replicating RNA can exist and that that could be the way in which life on the earth first began.

The exact manner in which life originated may remain lost to history forever, but discoveries like QT45 show that inert matter can sometimes begin to behave like life. At the heart of it, it's just chemistry, slowly learning to remember itself.

Arun Panchapakesan is an assistant professor at the Y.R. Gaitonde Centre for AIDS Research and Education, Chennai.

01Mar.A small piece of RNA copies itself, hinting at how life began
आरएनए का एक छोटा टुकड़ा स्वयं की प्रतिलिपि बनाता है, जिससे जीवन की शुरुआत का संकेत मिलता है



- Scientists have reported the **first evidence** of a **small RNA molecule** that can make **copies of itself**.
वैज्ञानिकों ने एक छोटे RNA अणु के स्वयं की प्रतिलिपि बनाने के पहले प्रमाण की रिपोर्ट की है।
- The molecule, dubbed **QT45**, strengthens **RNA's case** to be the **earth's first genetic material**, but doesn't prove it.
इस अणु को QT45 नाम दिया गया है, जो पृथ्वी के पहले आनुवंशिक पदार्थ के रूप में RNA के दावे को मजबूत करता है, लेकिन इसे साबित नहीं करता।
- In a **1953 experiment**, two scientists named **Stanley Miller** and **Harold Urey** attempted to recreate the conditions of the **early earth** long before life existed.
1953 के एक प्रयोग में दो वैज्ञानिक स्टैनली मिलर और हेरोल्ड यूरे ने जीवन के अस्तित्व से बहुत पहले की प्रारंभिक पृथ्वी की परिस्थितियों को पुनः बनाने का प्रयास किया।
- They showed that **organic molecules** such as **amino acids**, the **building blocks of proteins**, could form spontaneously in the conditions that prevailed on a **primitive earth**, **3.5–4 billion years ago**.
उन्होंने दिखाया कि कार्बनिक अणु, जैसे अमीनो अम्ल, जो प्रोटीन के निर्माण खंड हैं, 3.5–4 अरब वर्ष पहले की आदिम पृथ्वी की परिस्थितियों में स्वतः बन सकते थे।
- While the experiment was **revolutionary**, it did not settle the question of **life's origins**.
हालाँकि यह प्रयोग क्रांतिकारी था, लेकिन इससे जीवन की उत्पत्ति का प्रश्न हल नहीं हुआ।
- Critics pointed out that while **amino acids** could form, there was still no sign of **genetic material**, i.e. neither **DNA nor RNA**.
आलोचकों ने बताया कि भले ही अमीनो अम्ल बन सकते थे, फिर भी आनुवंशिक पदार्थ का कोई संकेत नहीं था, यानी DNA या RNA नहीं।
- Living organisms don't merely contain **proteins**: they rely on **genetic information encoded in DNA or RNA** to build them.
जीवित जीव केवल प्रोटीन ही नहीं रखते बल्कि उन्हें बनाने के लिए DNA या RNA में संहिताबद्ध आनुवंशिक जानकारी पर निर्भर रहते हैं।
- Demonstrating that **proteins could arise** was therefore only part of the story.
इसलिए यह दिखाना कि प्रोटीन बन सकते हैं, कहानी का केवल एक हिस्सा था।
- Importantly, **life must be able to produce more life**.
महत्वपूर्ण रूप से जीवन को और अधिक जीवन उत्पन्न करने में सक्षम होना चाहिए।
- For that, a **primitive system** would need **genetic information** and also a way to **copy that information**.
इसके लिए एक आदिम प्रणाली को आनुवंशिक जानकारी और उसे कॉपी करने की विधि की आवश्यकता होगी।
- This created a problem.
इससे एक समस्या उत्पन्न हुई।
- Usually, **DNA or RNA** stores instructions to make **proteins called polymerases**.
आमतौर पर DNA या RNA में पॉलीमरेज़ नामक प्रोटीन बनाने के निर्देश होते हैं।
- These **polymerases** then copy the **DNA or RNA** so that, when a **cell divides**, each new cell receives a **complete set of genetic information**.
ये पॉलीमरेज़ फिर DNA या RNA की प्रतिलिपि बनाते हैं ताकि जब कोशिका विभाजित हो, तो प्रत्येक नई कोशिका को पूरा आनुवंशिक सूचना सेट मिल सके।
- It was and remains a classic **chicken-or-egg problem**.
यह एक क्लासिक अंडा या मुर्गी समस्या थी और आज भी है।
- Then, in the **early 1980s**, scientists discovered that **RNA itself** could perform **simple chemical reactions**, including being able to **cut and paste pieces of itself**.
फिर 1980 के दशक की शुरुआत में वैज्ञानिकों ने पाया कि RNA स्वयं सरल रासायनिक प्रतिक्रियाएँ कर सकता है, जिनमें अपने टुकड़ों को काटना और जोड़ना भी शामिल है।
- This discovery strongly shifted scientists' thinking towards the possibility that **RNA could have been the earliest genetic material** on the **primitive earth**.
इस खोज ने वैज्ञानिकों की सोच को इस संभावना की ओर मोड़ दिया कि RNA आदिम पृथ्वी का सबसे प्रारंभिक आनुवंशिक पदार्थ हो सकता था।
- If a single molecule could both **store information** and carry out **chemical reactions**, it could bypass the **chicken-and-egg problem** of needing **proteins** to copy genetic material.



यदि एक ही अणु सूचना संग्रहित भी कर सके और रासायनिक प्रतिक्रियाएँ भी कर सके, तो वह प्रोटीन की आवश्यकता वाली अंडा-मूर्गी समस्या से बच सकता है।

- However, while scientists have already developed **RNA molecules** that could build other **RNA molecules**, they still lack an **RNA** that could copy the **information contained within itself**.
हालाँकि वैज्ञानिक पहले ही ऐसे **RNA अणु** बना चुके हैं जो अन्य **RNA अणु** बना सकते हैं, लेकिन अभी भी ऐसा **RNA** नहीं था जो **अपने भीतर की जानकारी की प्रतिलिपि बना सके**।
- The difficulty was **structural**.
समस्या **संरचनात्मक** थी।
- The **RNA enzymes** capable of copying other RNA were **large and complex**, between **150–300 nucleotides**.
अन्य RNA की प्रतिलिपि बनाने में सक्षम **RNA एंजाइम बड़े और जटिल** थे, जिनमें **150–300 न्यूक्लियोटाइड** होते थे।
- In trying to fold into their **functional shapes**, they could not easily serve as **templates for their own replication**.
अपने **कार्यात्मक आकार** में मुड़ने की कोशिश में वे **अपनी ही प्रतिकृति के लिए टेम्पलेट** के रूप में आसानी से काम नहीं कर पाते थे।
- In other words, **RNA could help other proteins replicate but couldn't self-replicate**.
दूसरे शब्दों में, **RNA अन्य प्रोटीनों की प्रतिकृति बनाने में मदद कर सकता था लेकिन स्वयं की प्रतिकृति नहीं बना सकता था**।
- Now, however, in a paper in **Science**, scientists from the **MRC Laboratory of Molecular Biology in the U.K.** have reported that they have generated a **self-replicating RNA molecule**.
अब **Science** पत्रिका में प्रकाशित एक शोध में **यूके के MRC Laboratory of Molecular Biology** के वैज्ञानिकों ने बताया कि उन्होंने **स्वयं प्रतिकृति बनाने वाला RNA अणु** तैयार किया है।
- Specifically, the researchers produced a **small RNA molecule**, just **45 nucleotides long**, that could **copy its own genetic information**.
विशेष रूप से, शोधकर्ताओं ने **45 न्यूक्लियोटाइड लंबा एक छोटा RNA अणु** बनाया जो **अपनी आनुवंशिक जानकारी की प्रतिलिपि बना सकता था**।
- To do this, they first **sifted through enormous pools of RNA**.
ऐसा करने के लिए उन्होंने पहले **RNA के विशाल समूहों की जांच** की।
- They repeatedly selected those **rare sequences** that showed even **faint signs of replication**.
उन्होंने बार-बार उन **दुर्लभ अनुक्रमों** का चयन किया जिनमें **प्रतिकृति के हल्के संकेत** भी दिखाई दिए।
- This led to the development of **QT45**.
इससे **QT45** का विकास हुआ।
- QT45 is, according to the researchers, the **world's first RNA molecule that can make copies of itself**.
शोधकर्ताओं के अनुसार **QT45 दुनिया का पहला RNA अणु है जो स्वयं की प्रतिलिपि बना सकता है**।
- However, the **self-replication process** was **extraordinarily slow** and required **special conditions**.
हालाँकि इसकी **स्वयं प्रतिकृति प्रक्रिया बहुत धीमी** थी और इसके लिए **विशेष परिस्थितियों** की आवश्यकता थी।
- Producing a **single full-length copy** took **weeks**.
एक **पूर्ण लंबाई की प्रतिलिपि** बनाने में **सप्ताहों** लगते थे।
- In contrast, **modern cellular polymerases** can copy **45 nucleotides in less than a second**.
इसके विपरीत **आधुनिक कोशिकीय पॉलीमरेज़** **45 न्यूक्लियोटाइड को एक सेकंड से भी कम समय में कॉपी कर सकते हैं**।
- Though the difference is **dramatic**, **primitive earth** had **millions of years**.
हालाँकि अंतर **बहुत बड़ा** है, लेकिन **आदिम पृथ्वी** के पास **लाखों वर्ष** थे।
- Even **QT45's slow copying conditions** could realistically have occurred and been sustained.
इसलिए **QT45 की धीमी प्रतिकृति परिस्थितियाँ** भी वास्तव में संभव हो सकती थीं और लंबे समय तक बनी रह सकती थीं।



- Modern **enzymes add nucleotides one at a time**, reading the **template** and making a **new complementary chain**.
आधुनिक एंजाइम एक-एक करके न्यूक्लियोटाइड जोड़ते हैं, टेम्पलेट पढ़ते हुए एक पूरक श्रृंखला बनाते हैं।
- **QT45 used short three-nucleotide building blocks.**
QT45 ने तीन-न्यूक्लियोटाइड वाले छोटे निर्माण खंडों का उपयोग किया।
- It first assembled a **complementary negative strand**, then used that as the **template to reproduce the original copy**.
यह पहले एक पूरक नकारात्मक श्रृंखला बनाता है और फिर उसी को मूल प्रतिलिपि बनाने के टेम्पलेट के रूप में उपयोग करता है।
- The most striking feature of **QT45 RNA** was that it was **imperfect**.
QT45 RNA की सबसे उल्लेखनीय विशेषता यह थी कि यह **पूर्णतः सटीक नहीं था।**
- Its **copying accuracy** was only about **92–94%**.
इसकी **कॉपी करने की सटीकता** केवल **92–94%** थी।
- This means it makes **mistakes when replicating genetic information**.
इसका अर्थ है कि यह **आनुवंशिक जानकारी की प्रतिकृति बनाते समय गलतियाँ करता है।**
- Every **mistake creates variation**, and **variations** are the **raw material for natural selection**.
हर गलती विविधता उत्पन्न करती है, और विविधताएँ प्राकृतिक चयन का मूल आधार हैं।
- While the development of **QT45 RNA** is a **breakthrough**, it does not prove **RNA was the first genetic material**.
हालाँकि **QT45 RNA** का विकास एक महत्वपूर्ण सफलता है, लेकिन यह यह सिद्ध नहीं करता कि **RNA पहला आनुवंशिक पदार्थ था।**
- QT45 only shows that **self-replicating RNA can exist**.
QT45 केवल यह दिखाता है कि **स्वयं प्रतिकृति बनाने वाला RNA अस्तित्व में हो सकता है।**
- It also suggests that this **could be the way life on earth first began**.
यह यह भी संकेत देता है कि **पृथ्वी पर जीवन की शुरुआत इसी तरह हुई हो सकती है।**
- The exact manner in which **life originated** may remain **lost to history forever**.
जीवन की उत्पत्ति का सटीक तरीका शायद हमेशा के लिए इतिहास में खोया रह सकता है।
- But discoveries like **QT45** show that **inert matter can begin to behave like life**.
लेकिन **QT45** जैसी खोजें दिखाती हैं कि **निर्जीव पदार्थ भी जीवन जैसा व्यवहार करने लग सकता है।**
- At the heart of it, it's just **chemistry slowly learning to remember itself**.
मूल रूप से यह सिर्फ रसायन विज्ञान है जो धीरे-धीरे स्वयं को याद रखना सीख रहा है।

The Inverse Law of AI: how capital rises as responsibility falls



John Xavier

If one were to map the trajectory of global AI governance, the geographic markers would tell a story of diminishing caution. When I covered the Responsible AI in Military (REAIM) summit in The Hague in 2023, it was a gathering defined by a sombre gravity, where nations convened to discuss the military applications of artificial intelligence and the urgent need for a “responsible” framework. The mood was one of containment. Since then, the diplomatic caravan has moved through Bletchley Park, Seoul, and Paris, finally arriving recently at the AI Impact Summit in India.

But something fundamental has shifted along the route. I’d like to map this shift through an Index that I’ll call the “Responsibility Index” – a measure

of how much weight safety and ethics carry versus speed and scale. On this index, safety is declining, and big money is on the rise. The recent proceedings in India confirm this distinct transition: the era of wondering if we should build certain things has been definitively replaced by the race to see how fast we can fund them.

The India summit serves as a microcosm for this global pivot. While the rhetoric of “safety” is still included in press releases, the atmosphere has changed. The conversation has moved from the philosophical concerns of researchers to the logistical demands of industrialists. In The Hague, the stars of the show were ethicists, diplomats, and military strategists concerned with the laws of war. In the current cycle, the spotlight has been hijacked by the check-writers. The “big money” has effectively eclipsed the “deep talent.”

This overshadowing of talent by capital is a crucial



The summit serves as a microcosm for global pivot. REUTERS

distinction. In the early days of the generative AI wave – which feels like decades ago but was only 2022 – the power lay with the architects of the technology. The authors of the ‘Attention Is All You Need’ paper or the early teams at DeepMind held the leverage because they possessed the rare cognitive surplus required to birth these models. Today, the barrier to entry is no longer just genius; it is a GDP-sized capital expenditure. When the primary requirement for relevance shifts from brainpower to computing power, the incentives shift from scientific ri-

gour to return on investment. Nothing illustrates this commoditisation of intelligence quite like the rhetoric emerging from the industry’s figureheads like Sam Altman, chief of OpenAI and the face of this AI revolution. On the sidelines of India’s AI summit, Mr. Altman compared the energy use of massive data centres to the cost of training a single human being for twenty years. Such a comparison should have stopped the industry in its tracks, yet it barely registered a blip.

His statement is profound, and it suggests a worldview where biologi-

cal intelligence and synthetic intelligence are merely competing line items on a balance sheet. If a data centre can produce an equivalent cognitive output for a fraction of the time and money it takes to raise, educate, and train a human, the market will inevitably choose the silicon option. When human development is viewed as an inefficient trade-off compared to GPU clusters, the “responsibility” to protect human-centric systems naturally erodes. The goal ceases to be augmenting human capability and shifts toward rendering the “expensive” human obsolete for the sake of margin. This is why the Responsibility Index is falling. Responsibility is expensive. It requires friction, audits, pauses, and the occasional decision to not release a product. In the frantic atmosphere of the India summit, and the preceding summits in Paris and Seoul, friction is the enemy. The focus has turned entirely to infrastructure–

energy grids, chip fabrication, and data sovereignty. The questions are no longer about the morality of the algorithm, but about the ownership of the pipe it travels through. We have officially entered the industrialisation phase of AI. Just as the industrial revolution eventually stopped worrying about the craftsmanship of the individual weaver and focused on the output of the loom, the AI revolution is moving past the “craft” of responsible coding to the brute force of scaling laws. The Hague’s REAIM summit felt like a warning; the summits feel like a ribbon-cutting ceremony for a runaway train.

As the heavy machinery of global capital locks into place, the voices calling for a pause or a safety check are becoming quieter, drowned out by the hum of cooling fans in billion-dollar data centres. The technology is getting smarter, but the wisdom guiding its deployment seems to be depreciating with every new summit.



01Mar.The Inverse Law of AI: how capital rises as responsibility falls एआई का उल्टा नियम: कैसे पूंजी बढ़ती है जब जिम्मेदारी घटती है

- If one were to map the trajectory of global **AI governance**, the geographic markers would tell a story of diminishing **caution**.
यदि कोई वैश्विक **एआई शासन (AI governance)** की दिशा का मानचित्र बनाए, तो भौगोलिक संकेतक घटती हुई **सावधानी** की कहानी बताएंगे।
- When I covered the **Responsible AI in Military (REAIM) summit** in **The Hague** in 2023, it was a gathering defined by a sombre gravity, where nations convened to discuss the military applications of **artificial intelligence** and the urgent need for a “**responsible**” framework.
जब मैंने 2023 में **द हेग** में आयोजित **Responsible AI in Military (REAIM) शिखर सम्मेलन** को कवर किया, तो यह एक गंभीर माहौल वाला सम्मेलन था, जहाँ राष्ट्र **कृत्रिम बुद्धिमत्ता (Artificial Intelligence)** के सैन्य उपयोग और एक “**जिम्मेदार**” ढांचे की तत्काल आवश्यकता पर चर्चा करने के लिए एकत्र हुए थे।
- The mood was one of **containment**.
माहौल **नियंत्रण (containment)** का था।
- Since then, the diplomatic caravan has moved through **Bletchley Park, Seoul, and Paris**, finally arriving recently at the **AI Impact Summit** in **India**.
तब से राजनयिक यात्रा **ब्लेचली पार्क, सियोल, और पेरिस** से होकर गुज़री और हाल ही में **भारत** में आयोजित **AI Impact Summit** तक पहुँची।
- But something fundamental has shifted along the route.
लेकिन इस यात्रा के दौरान कुछ मूलभूत बदलाव हुआ है।
- I'd like to map this shift through an Index that I'll call the “**Responsibility Index**” — a measure of how much weight **safety** and **ethics** carry versus **speed** and **scale**.
मैं इस बदलाव को एक सूचकांक के माध्यम से समझाना चाहूँगा जिसे मैं “**Responsibility Index**” कहता हूँ — यह मापता है कि **सुरक्षा (safety)** और **नैतिकता (ethics)** की तुलना में **गति (speed)** और **विस्तार (scale)** को कितना महत्व दिया जा रहा है।
- On this index, **safety** is declining, and **big money** is on the rise.
इस सूचकांक में **सुरक्षा** घट रही है और **बड़ी पूंजी (big money)** बढ़ रही है।
- The recent proceedings in **India** confirm this distinct transition: the era of wondering if we should build certain things has been definitively replaced by the race to see how fast we can **fund** them.
भारत में हाल की घटनाएँ इस स्पष्ट परिवर्तन की पुष्टि करती हैं: यह सोचने का दौर कि हमें कुछ चीजें बनानी चाहिए या नहीं, अब इस दौड़ से बदल गया है कि हम उन्हें कितनी तेजी से **वित्तपोषित (fund)** कर सकते हैं।
- The **India summit** serves as a microcosm for this global pivot.
भारत का शिखर सम्मेलन इस वैश्विक परिवर्तन का एक सूक्ष्म रूप प्रस्तुत करता है।
- While the rhetoric of “**safety**” is still included in press releases, the atmosphere has changed.
हालाँकि प्रेस विज्ञप्तियों में अभी भी “**सुरक्षा**” की बात शामिल होती है, लेकिन माहौल बदल चुका है।
- The conversation has moved from the philosophical concerns of **researchers** to the logistical demands of **industrialists**.
चर्चा **शोधकर्ताओं** की दार्शनिक चिंताओं से हटकर **उद्योगपतियों** की व्यावहारिक मांगों की ओर चली गई है।
- In **The Hague**, the stars of the show were **ethicists, diplomats, and military strategists** concerned with the **laws of war**.
द हेग में इस सम्मेलन के मुख्य पात्र **नैतिकतावादी (ethicists), राजनयिक (diplomats)** और **सैन्य रणनीतिकार (military strategists)** थे जो **युद्ध के कानूनों** को लेकर चिंतित थे।
- In the current cycle, the spotlight has been hijacked by the **check-writers**.
वर्तमान दौर में ध्यान **निवेश करने वालों (check-writers)** ने अपने कब्जे में ले लिया है।
- The “**big money**” has effectively eclipsed the “**deep talent**.”
“**बड़ी पूंजी (big money)**” ने प्रभावी रूप से “**गहरी प्रतिभा (deep talent)**” को पीछे छोड़ दिया है।
- This overshadowing of **talent** by **capital** is a crucial distinction.
प्रतिभा (talent) पर **पूंजी (capital)** का हावी होना एक महत्वपूर्ण अंतर है।
- In the early days of the **generative AI** wave — which feels like decades ago but was only **2022** — the power lay with the architects of the technology.
जनरेटिव एआई (generative AI) की शुरुआती लहर — जो दशक पुरानी लगती है लेकिन वास्तव में केवल **2022** की है — उस समय शक्ति तकनीक के निर्माताओं के पास थी।



- The authors of the 'Attention Is All You Need' paper or the early teams at DeepMind held the leverage because they possessed the rare cognitive surplus required to birth these models.
'Attention Is All You Need' शोधपत्र के लेखक या DeepMind की शुरुआती टीमों प्रभावशाली थीं क्योंकि उनके पास इन मॉडलों को बनाने के लिए आवश्यक दुर्लभ बौद्धिक क्षमता थी।
- Today, the barrier to entry is no longer just **genius**; it is a **GDP-sized capital expenditure**. आज प्रवेश की बाधा केवल **प्रतिभा (genius)** नहीं रह गई है; बल्कि यह **जीडीपी जितना बड़ा पूंजी निवेश (GDP-sized capital expenditure)** बन गया है।
- When the primary requirement for relevance shifts from **brainpower** to **computing power**, the incentives shift from **scientific rigour** to **return on investment**. जब महत्व प्राप्त करने की मुख्य आवश्यकता **बौद्धिक शक्ति (brainpower)** से **कम्प्यूटिंग शक्ति (computing power)** में बदल जाती है, तो प्रोत्साहन भी **वैज्ञानिक कठोरता (scientific rigour)** से **निवेश पर लाभ (return on investment)** की ओर बदल जाते हैं।
- Nothing illustrates this commoditisation of **intelligence** quite like the rhetoric emerging from the industry's figureheads like **Sam Altman**, chief of **OpenAI** and the face of this AI revolution.
बुद्धिमत्ता (intelligence) के इस बाजारीकरण को उतना स्पष्ट कुछ नहीं दिखाता जितना उद्योग के प्रमुख चेहरों जैसे **Sam Altman**, जो **OpenAI** के प्रमुख हैं और इस एआई क्रांति का चेहरा हैं, के बयान।
- On the sidelines of **India's AI summit**, Mr. Altman compared the energy use of massive **data centres** to the cost of training a single human being for twenty years.
भारत के AI शिखर सम्मेलन के दौरान, श्री ऑल्टमैन ने विशाल **डेटा सेंटरों (data centres)** की ऊर्जा खपत की तुलना एक इंसान को बीस वर्षों तक प्रशिक्षित करने की लागत से की।
- Such a comparison should have stopped the industry in its tracks, yet it barely registered a blip.
ऐसी तुलना से उद्योग को रुककर सोचने पर मजबूर होना चाहिए था, लेकिन इसका लगभग कोई असर नहीं पड़ा।
- His statement is profound, and it suggests a worldview where **biological intelligence** and **synthetic intelligence** are merely competing line items on a balance sheet.
उनका बयान गहरा है और यह एक ऐसी सोच दर्शाता है जहाँ **जैविक बुद्धिमत्ता (biological intelligence)** और **कृत्रिम बुद्धिमत्ता (synthetic intelligence)** केवल बैलेंस शीट के प्रतिस्पर्धी मद बन जाते हैं।
- If a **data centre** can produce an equivalent cognitive output for a fraction of the time and money it takes to raise, educate, and train a **human**, the market will inevitably choose the **silicon** option.
यदि कोई **डेटा सेंटर** उस समय और लागत के एक छोटे हिस्से में वही बौद्धिक परिणाम दे सकता है जो एक **मानव** को पालने-पोसने, शिक्षित करने और प्रशिक्षित करने में लगता है, तो बाज़ार अनिवार्य रूप से **सिलिकॉन** विकल्प को चुनेगा।
- When human development is viewed as an **inefficient trade-off** compared to **GPU clusters**, the "**responsibility**" to protect human-centric systems naturally erodes.
जब **GPU क्लस्टरों** की तुलना में मानव विकास को **अप्रभावी विकल्प (inefficient trade-off)** माना जाता है, तो मानव-केंद्रित प्रणालियों की रक्षा करने की "**जिम्मेदारी**" स्वाभाविक रूप से कम हो जाती है।
- The goal ceases to be **augmenting human capability** and shifts toward rendering the "expensive" human **obsolete** for the sake of **margin**.
लक्ष्य **मानव क्षमता को बढ़ाने (augmenting human capability)** से हटकर "महंगे" मानव को **अप्रासंगिक (obsolete)** बनाने की ओर चला जाता है ताकि **लाभ मार्जिन** बढ़ सके।
- This is why the **Responsibility Index** is falling.
यही कारण है कि **Responsibility Index** गिर रहा है।
- **Responsibility** is expensive.
जिम्मेदारी महंगी होती है।
- It requires **friction, audits, pauses**, and the occasional decision to **not release a product**.
इसके लिए **रोक-टोक (friction)**, **ऑडिट, रुकावट**, और कभी-कभी **उत्पाद जारी न करने** का निर्णय लेना पड़ता है।
- In the frantic atmosphere of the **India summit**, and the preceding summits in **Paris** and **Seoul**, **friction** is the enemy.
भारत, पेरिस, और सियोल के शिखर सम्मेलनों के तेज़ माहौल में **रोक-टोक (friction)** को दुश्मन माना जा रहा है।



- The focus has turned entirely to **infrastructure** — **energy grids, chip fabrication, and data sovereignty**.
ध्यान पूरी तरह **इन्फ्रास्ट्रक्चर** — **ऊर्जा ग्रिड, चिप निर्माण, और डेटा संप्रभुता** — पर केंद्रित हो गया है।
- The questions are no longer about the **morality of the algorithm**, but about the **ownership of the pipe** it travels through.
अब सवाल **एल्गोरिद्म की नैतिकता** के बारे में नहीं बल्कि उस **इन्फ्रास्ट्रक्चर के स्वामित्व** के बारे में हैं जिससे वह गुजरता है।
- We have officially entered the **industrialisation phase of AI**.
हम आधिकारिक रूप से **एआई के औद्योगिकरण चरण** में प्रवेश कर चुके हैं।
- Just as the **industrial revolution** eventually stopped worrying about the craftsmanship of the individual **weaver** and focused on the output of the **loom**, the **AI revolution** is moving past the “craft” of **responsible coding** to the brute force of **scaling laws**.
जैसे **औद्योगिक क्रांति** ने अंततः व्यक्तिगत **बुनकर** की कला की चिंता छोड़कर **करघे के उत्पादन** पर ध्यान केंद्रित किया, उसी तरह **एआई क्रांति** भी **जिम्मेदार कोडिंग** की कला से आगे बढ़कर **स्केलिंग लॉज़** की शक्ति पर केंद्रित हो रही है।
- The **Hague’s REAIM summit** felt like a warning; the summits feel like a ribbon-cutting ceremony for a runaway train.
हेग का RE AIM शिखर सम्मेलन एक चेतावनी जैसा लगा था; लेकिन अब के शिखर सम्मेलन एक तेज़ी से दौड़ती ट्रेन के उद्घाटन समारोह जैसे लगते हैं।
- As the heavy machinery of **global capital** locks into place, the voices calling for a **pause** or a **safety check** are becoming quieter, drowned out by the hum of cooling fans in **billion-dollar data centres**.
जैसे-जैसे **वैश्विक पूंजी** की भारी मशीनरी स्थापित हो रही है, **रुकने** या **सुरक्षा जांच** की मांग करने वाली आवाज़ें धीमी होती जा रही हैं और **अरबों डॉलर के डेटा सेंटरों** की गूंज में दब रही हैं।
- The technology is getting **smarter**, but the **wisdom** guiding its deployment seems to be **depreciating** with every new summit.
तकनीक अधिक **स्मार्ट** होती जा रही है, लेकिन इसके उपयोग का मार्गदर्शन करने वाली **बुद्धिमत्ता** हर नए शिखर सम्मेलन के साथ **कम** होती प्रतीत हो रही है।

Ring a ring o’ roses

Why do so many flowers have five petals?

— Ajith Kizhakkethil

GS III: S&T

Many flowers are indeed pentamerous — but across flowering plants as a whole, the petal number varies widely. Monocots often have flower parts in threes. Eudicots have four or five. Many species have fused petals, others have several petals, and yet others lack them altogether.

In the flower bud, new organs begin as small bumps on a ring of tissue, and the eventual number is equal to the number of slots this tissue lays down in a whorl, given its size and shape and the organs’ spacing needs.

Early in the evolution of angiosperms, different major clades ‘opted’ for different numbers of slots. The monocots typically evolved three slots per whorl. The eudicots opted for four to five per whorl. Importantly, the plant’s genes only control the dynamics of growth. For example, if the meristem — i.e. the population of undifferentiated cells that develop into new tissues per the planet’s needs — is bigger, more organs form with more parts. If an organ develops sooner, it will have more time to initiate its parts, leading to more of them. And so on.

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

on a ring of **tissue**, and the eventual **number** is equal to the number of **slots** this tissue lays down in a **whorl**, given its **size and shape** and the **organs’ spacing needs**.

फूल की कली में नए **अंग ऊतक (tissue)** की एक वलयाकार संरचना पर छोटे **उभारों** के रूप में शुरू होते हैं, और अंतिम **संख्या** उन **स्थान (slots)** की संख्या के बराबर होती है जो यह ऊतक एक **चक्र (whorl)** में बनाता है, जो उसके **आकार-प्रकार** और **अंगों के बीच दूरी की आवश्यकता** पर निर्भर करता है।

- Early in the **evolution of angiosperms**, different major **clades** ‘opted’ for different **numbers of slots**.

01Mar. Why do so many flowers have five petals?

क्यों कई फूलों में पाँच पंखुड़ियाँ होती हैं?

— Ajith Kizhakkethil
— अजीत किझक्केथिल

Many **flowers** are indeed **pentamerous** — but across **flowering plants** as a whole, the **petal number** varies widely. कई **फूल** वास्तव में **पेंटेमेरस (पाँच भाग वाले)** होते हैं — लेकिन समग्र रूप से **पुष्पीय पौधों** में **पंखुड़ियों की संख्या** बहुत भिन्न होती है।

• **Monocots** often have **flower parts in threes**. **मोनोकोट्स** में अक्सर **फूल के भाग तीन** की संख्या में होते हैं।

• **Eudicots** have **four or five**. **यूडीकोट्स** में **चार या पाँच** भाग होते हैं।

• Many **species** have **fused petals**, others have several **petals**, and yet others lack them altogether. कई **प्रजातियों** में **पंखुड़ियाँ जुड़ी हुई** होती हैं, कुछ में कई **पंखुड़ियाँ** होती हैं और कुछ में ये बिल्कुल नहीं होतीं।

• In the **flower bud**, new **organs** begin as small **bumps**



एंजियोस्पर्म के विकास के शुरुआती चरण में विभिन्न प्रमुख क्लेड्स ने अलग-अलग स्लॉट्स की संख्या को 'चुना'।

- The **monocots** typically evolved **three slots per whorl**.
मोनोकॉट्स में सामान्यतः प्रति चक्र तीन स्लॉट विकसित हुए।
- The **eudicots** opted for **four to five per whorl**.
यूडीकोट्स ने प्रति चक्र चार से पाँच स्लॉट को अपनाया।
- Importantly, the **plant's genes** only control the **dynamics of growth**.
महत्वपूर्ण रूप से, पौधे के जीन केवल विकास की गतिशीलता को नियंत्रित करते हैं।
- For example, if the **meristem** — i.e. the population of **undifferentiated cells** that develop into new **tissues** per the plant's needs — is **bigger**, more **organs** form with more **parts**.
उदाहरण के लिए, यदि **मेरिस्टेम** — अर्थात् **अविभेदित कोशिकाओं** की वह आबादी जो पौधे की आवश्यकता के अनुसार नए **ऊतकों** में विकसित होती है — **बड़ा** होता है, तो अधिक **अंग** अधिक **भागों** के साथ बनते हैं।
- If an **organ** develops sooner, it will have more **time** to initiate its **parts**, leading to more of them.
यदि कोई **अंग** जल्दी विकसित होता है, तो उसे अपने **भागों** को प्रारंभ करने के लिए अधिक **समय** मिलेगा, जिससे उनकी संख्या अधिक हो जाएगी।

GS Paper III: Environment,

TOPICS COVERED

01 March 2026

01Mar **Nine Botswana cheetahs released into Kuno park**
कूनो पार्क में बोत्सवाना के नौ चीते छोड़े गए

Nine Botswana cheetahs released into Kuno park

India's total cheetah population touches 48; this is the third batch of big cats to be brought from Africa as part of a reintroduction programme; 21 of these animals had died at the national park

GS III: Environment
Mehul Malpani
BHOPAL

In a major boost to India's cheetah reintroduction programme, nine cheetahs, translocated from Botswana, were released into their enclosures at the Kuno National Park (KNP) in Madhya Pradesh on Saturday by Union Minister for Environment, Forest and Climate Change Bhupender Yadav.

With the release of the six females and three males, the total cheetah population in India has gone up to 48. Of them, 28 are Indian-born cubs and 20 are adults translocated from African nations as part of the Union government's Project Cheetah.

Mr. Yadav said that this was the third batch of cheetahs to arrive from an African nation after the first batch of eight big cats from Namibia in September 2022, and another 12 from South Africa in February 2023. "We have had many challenges in this project such as their immunity and survival and helping them adapt to the local habitat. But our forest officials, the Wildlife Institute of India (WII), our veterinarians and scientists here [at Kuno] and especially locals from nearby



New abode: Cheetahs from Botswana being released in the presence of Union Minister Bhupender Yadav and forest officials at the Kuno National Park in Sheopur on Saturday. @BYADVBJP.X

areas around Kuno by becoming 'cheetah mitra' worked to preserve cheetahs in this region," the Union Minister said.

The nine cheetahs had been officially donated to India during President Droupadi Murmu's visit to Botswana in November last year and had been in quarantine at the African nation's Mokolodi nature reserve. They were airlifted by the Indian Air Force (IAF) to the Gwalior Air Base, and were further flown to the KNP on two IAF helicopters.

Kuno field director and Project Cheetah director

Uttam Kumar Sharma told *The Hindu* that the cheetahs will undergo a mandatory quarantine for minimum one month in quarantine bomas or special enclosures at the KNP.

Continuous monitoring "Tracking collars have been put around their necks. We have formed special teams consisting of two veterinarians and other staff members who will visit the big cats twice a day to monitor their health and how they are adapting to local conditions," Mr. Sharma said.

Since the beginning of

the ambitious programme, 21 cheetahs – nine translocated adults and 12 Indian-born cubs – had died at Kuno from various causes.

Asked about any changes to the staff's approach now, Mr. Sharma said, "We have learnt a lot of things in the past three-and-a-half years. Our staff have done this in the past and know the whole procedure. We are an experienced team."

Apart from the 45 cheetahs at Kuno, three translocated adults are at the Gandhi Sagar Wildlife Sanctuary in Madhya Pradesh's Mandsaur and Neemuch districts.

01Mar. **Nine Botswana cheetahs released into Kuno park**
कूनो पार्क में बोत्सवाना के नौ चीते छोड़े गए

• India's total cheetah population touches 48; this is the third batch of big cats to be brought from Africa as part of a reintroduction programme; 21 of these animals had died at the national park

भारत में कुल चीतों की संख्या 48 तक पहुँची; यह पुनर्प्रवेश कार्यक्रम के तहत अफ्रीका से लाए गए बड़े बिल्लियों का तीसरा बैच है; इनमें से 21 जानवर राष्ट्रीय उद्यान में मर चुके हैं।

• In a major boost to India's cheetah reintroduction programme, nine cheetahs, translocated from Botswana, were released into their enclosures at the Kuno National Park (KNP) in Madhya Pradesh on Saturday by Union Minister for Environment, Forest and Climate Change Bhupender Yadav.

भारत के चीता पुनर्प्रवेश कार्यक्रम को बड़ा बढ़ावा देते हुए, बोत्सवाना से लाए गए नौ चीतों को शनिवार को मध्य प्रदेश के कूनो नेशनल पार्क (KNP) में उनके बाड़ों में केंद्रीय पर्यावरण, वन और जलवायु



परिवर्तन मंत्री भूपेंद्र यादव द्वारा छोड़ा गया।

- With the release of the **six females** and **three males**, the total **cheetah population** in India has gone up to **48**.
छह मादा और तीन नर को छोड़े जाने के साथ ही भारत में चीतों की कुल संख्या बढ़कर 48 हो गई है।
- Of them, **28 are Indian-born cubs** and **20 are adults translocated from African nations** as part of the Union government's **Project Cheetah**.
इनमें से 28 भारत में जन्मे शावक हैं और 20 वयस्क अफ्रीकी देशों से लाए गए हैं, जो केंद्र सरकार के प्रोजेक्ट चीता का हिस्सा हैं।
- Mr. **Yadav** said that this was the **third batch of cheetahs** to arrive from an **African nation** after the first batch of **eight big cats from Namibia in September 2022**, and another **12 from South Africa in February 2023**.
यादव ने कहा कि यह अफ्रीकी देश से आने वाला चीतों का तीसरा बैच है, इससे पहले सितंबर 2022 में नामीबिया से आठ बड़े चीते, और फरवरी 2023 में दक्षिण अफ्रीका से 12 चीते लाए गए थे।
- "We have had many **challenges** in this project such as their **immunity and survival** and helping them **adapt to the local habitat**.
"इस परियोजना में हमें कई चुनौतियों का सामना करना पड़ा है जैसे उनकी प्रतिरोधक क्षमता और जीवित रहना तथा उन्हें स्थानीय आवास के अनुकूल बनाना।
- But our **forest officials**, the **Wildlife Institute of India (WII)**, our **veterinarians and scientists** here at **Kuno**, and especially **locals from nearby areas** around Kuno by becoming '**cheetah mitra**' worked to preserve cheetahs in this region," the **Union Minister** said.
लेकिन हमारे वन अधिकारी, भारतीय वन्यजीव संस्थान (WII), यहाँ कूनो में हमारे पशु चिकित्सक और वैज्ञानिक, और विशेष रूप से कूनो के आसपास के स्थानीय लोग, जो 'चीता मित्र' बने, उन्होंने इस क्षेत्र में चीतों को संरक्षित करने के लिए काम किया," केंद्रीय मंत्री ने कहा।
- The **nine cheetahs** had been officially **donated to India** during **President Droupadi Murmu's visit to Botswana in November last year** and had been in **quarantine** at the African nation's **Mokolodi nature reserve**.
ये नौ चीते पिछले वर्ष नवंबर में राष्ट्रपति द्रौपदी मुर्मू की बोत्सवाना यात्रा के दौरान आधिकारिक रूप से भारत को दान किए गए थे और उन्हें अफ्रीकी देश के मोकोलोडी नेचर रिजर्व में क्वारंटीन में रखा गया था।
- They were **airlifted by the Indian Air Force (IAF)** to the **Gwalior Air Base**, and were further flown to the **KNP** on two **IAF helicopters**.
उन्हें भारतीय वायु सेना (IAF) द्वारा ग्वालियर एयर बेस तक एयरलिफ्ट किया गया और फिर दो IAF हेलीकॉप्टरों से कूनो नेशनल पार्क पहुँचाया गया।
- **Kuno field director** and **Project Cheetah director Uttam Kumar Sharma** told **The Hindu** that the cheetahs will undergo a **mandatory quarantine** for minimum **one month** in **quarantine bomas** or **special enclosures** at the **KNP**.
कूनो फील्ड डायरेक्टर और प्रोजेक्ट चीता के निदेशक उत्तम कुमार शर्मा ने द हिंदू को बताया कि चीतों को कूनो नेशनल पार्क में क्वारंटीन बोमा या विशेष बाड़ों में कम से कम एक महीने का अनिवार्य क्वारंटीन पूरा करना होगा।

Continuous monitoring निरंतर निगरानी

- "**Tracking collars** have been put around their **necks**.
"उनकी गर्दन में ट्रैकिंग कॉलर लगाए गए हैं।
- We have formed **special teams** consisting of **two veterinarians and other staff members** who will visit the **big cats** twice a day to monitor their **health** and how they are **adapting to local conditions**," Mr. **Sharma** said.
हमने विशेष टीमें बनाई हैं जिनमें दो पशु चिकित्सक और अन्य कर्मचारी शामिल हैं, जो दिन में दो बार बड़े बिल्लियों के पास जाकर उनके स्वास्थ्य और स्थानीय परिस्थितियों के अनुकूलन की निगरानी करेंगे," शर्मा ने कहा।
- Since the beginning of the **ambitious programme**, **21 cheetahs — nine translocated adults and 12 Indian-born cubs** — had **died at Kuno** from **various causes**.
इस महत्वाकांक्षी कार्यक्रम की शुरुआत से अब तक 21 चीते — नौ स्थानांतरित वयस्क और 12 भारत में जन्मे शावक — कूनो में विभिन्न कारणों से मर चुके हैं।



- Asked about any **changes to the staff's approach now**, Mr. **Sharma** said, "We have learnt a lot of things in the past **three-and-a-half years**.
जब कर्मचारियों के दृष्टिकोण में किसी बदलाव के बारे में पूछा गया, तो शर्मा ने कहा, "पिछले साढ़े तीन वर्षों में हमने बहुत कुछ सीखा है।"
- Our **staff** have done this in the past and know the **whole procedure**.
हमारे कर्मचारी पहले भी यह काम कर चुके हैं और पूरी प्रक्रिया जानते हैं।
- We are an **experienced team**."
हम एक अनुभवी टीम हैं।"
- Apart from the **45 cheetahs at Kuno**, **three translocated adults** are at the **Gandhi Sagar Wildlife Sanctuary** in **Madhya Pradesh's Mandsaur and Neemuch districts**.
कूनो में 45 चीतों के अलावा, तीन स्थानांतरित वयस्क चीते मध्य प्रदेश के मंदसौर और नीमच जिलों में स्थित गांधी सागर वन्यजीव अभयारण्य में हैं।

DAILY CURRENT AFFAIRS(GS Paper IV and Essay)

TOPICS COVERED

01 March 2026

01Mar

Centuries-old Hindu temple in Kasaragod hosts iftar in gesture of religious harmony

कासरगोड में सदियों पुराने हिंदू मंदिर में धार्मिक सद्भाव के प्रतीक के रूप में इफ्तार आयोजित

Centuries-old Hindu temple in Kasaragod hosts iftar in gesture of religious harmony

GS IV: Ethics:

The Hindu Bureau
KOZHIKODE

In a notable act of communal harmony, a temple in Kasaragod, Kerala recently hosted a community iftar in its courtyard.

The Sree Poobanam Kuzhi Temple at Panayal near Bekal organised the gathering on Thursday, which was attended by around 200 people. The iftar, where participants shared a meal within the temple premises, highlighting local unity, was part of the Brahmakalashotsavam marking the re-consecration of the temple's deities.

"Our aim was to streng-



Kerala story: People attend an iftar in the premises of Sree Poobanam Kuzhi Temple on Thursday. SPECIAL ARRANGEMENT

then communal harmony. Muslims live around the temple and have always been very helpful to us. As they were observing the Ramzan fast, they could not participate in the *anna-danam* (community feast)

held as part of the temple's reconsecration festival. As a gesture of inclusion and goodwill, a community iftar was organised," said V. Chandran, chairman of the temple programme committee.

On Thursday morning, an interfaith conference set the tone. By evening, the temple courtyard had turned into a space of shared fasting and fellowship. Sajid Mavval, a resident, said that the iftar held in the temple courtyard had helped strengthen communal harmony.

Unique experience

"The temple has been there for centuries, and this was the first time that an iftar was organised there. We were fortunate to experience something that even our forefathers never had the opportunity to witness," Mr. Mavval added.

01Mar. Centuries-old Hindu temple in Kasaragod hosts iftar in gesture of religious harmony

कासरगोड में सदियों पुराने हिंदू मंदिर में धार्मिक सद्भाव के प्रतीक के रूप में इफ्तार आयोजित

- In a notable act of **communal harmony**, a temple in **Kasaragod, Kerala** recently hosted a community **iftar** in its courtyard.



साम्प्रदायिक सद्भाव के एक उल्लेखनीय उदाहरण में, केरल के कासरगोड में एक मंदिर ने हाल ही में अपने प्रांगण में सामुदायिक इफ्तार का आयोजन किया।

- The **Sree Poobanam Kuzhi Temple** at **Panayal near Bekal** organised the gathering on Thursday, which was attended by around **200 people**.
बेकल के पास पनायल स्थित श्री पूबनम कुज़ी मंदिर ने गुरुवार को इस कार्यक्रम का आयोजन किया, जिसमें लगभग **200 लोगों** ने भाग लिया।
- The **iftar**, where participants shared a meal within the **temple premises**, highlighting local **unity**, was part of the **Brahmakalashotsavam** marking the **reconsecration** of the temple's **deities**.
यह इफ्तार, जिसमें प्रतिभागियों ने मंदिर परिसर के भीतर भोजन साझा किया और स्थानीय एकता को दर्शाया, मंदिर के देवताओं के पुनः प्रतिष्ठा को चिह्नित करने वाले ब्रह्मकलशोत्सव का हिस्सा था।
- "Our aim was to strengthen **communal harmony**.
"हमारा उद्देश्य साम्प्रदायिक सद्भाव को मजबूत करना था।
- **Muslims** live around the temple and have always been very helpful to us.
मंदिर के आसपास मुस्लिम रहते हैं और वे हमेशा हमारी बहुत सहायता करते रहे हैं।
- As they were observing the **Ramzan fast**, they could not participate in the **annadanam (community feast)** held as part of the temple's **reconsecration festival**.
क्योंकि वे रमज़ान का रोज़ा रख रहे थे, इसलिए वे मंदिर के पुनः प्रतिष्ठा उत्सव के हिस्से के रूप में आयोजित अन्नदानम (सामुदायिक भोजन) में भाग नहीं ले सके।
- As a gesture of **inclusion and goodwill**, a community **iftar** was organised," said **V. Chandran**, chairman of the temple **programme committee**.
समावेशन और सद्भावना के प्रतीक के रूप में सामुदायिक इफ्तार का आयोजन किया गया," ऐसा मंदिर की कार्यक्रम समिति के अध्यक्ष **वी. चंद्रन** ने कहा।
- On Thursday morning, an **interfaith conference** set the tone.
गुरुवार सुबह एक अंतरधार्मिक सम्मेलन ने माहौल की शुरुआत की।
- By evening, the **temple courtyard** had turned into a space of shared **fasting and fellowship**.
शाम तक मंदिर का प्रांगण साझा रोज़ा और भाईचारे के स्थान में बदल गया।
- **Sajid Mavval**, a resident, said that the **iftar** held in the temple courtyard had helped strengthen **communal harmony**.
एक निवासी साजिद माव्वल ने कहा कि मंदिर के प्रांगण में आयोजित इफ्तार ने साम्प्रदायिक सद्भाव को मजबूत करने में मदद की है।

Unique experience

अनूठा अनुभव

- "The temple has been there for **centuries**, and this was the **first time** that an **iftar** was organised there.
"यह मंदिर सदियों से वहाँ मौजूद है और यह पहली बार था जब वहाँ इफ्तार का आयोजन किया गया।
- We were fortunate to experience something that even our **forefathers** never had the opportunity to witness," **Mr. Mavval** added.
हम भाग्यशाली थे कि हमने ऐसी चीज़ का अनुभव किया जिसे हमारे पूर्वजों को भी देखने का अवसर नहीं मिला," श्री माव्वल ने जोड़ा।