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PCS Special:	04 November 2025

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Women's world

The World Cup win came after a long struggle on and off the field

PCS

At the midnight hour on a magical Sunday, Harmanpreet Kaur and her incredible women made their tryst with destiny. India was finally crowned world champions in women's cricket. It was a journey marked by a long history of angst and joy, shaped by the sweat and dreams of pioneers such as Shantha Rangaswamy, Diana Edulji, Mithali Raj, and Jhulan Goswami. In a high-stakes final befitting an ICC World Cup, India prevailed over South Africa by 52 runs at Navi Mumbai's D.Y. Patil Stadium, which turned into a teeming mass of raucous energy. This moment is as epochal as it was for Kapil Dev and his men in 1983 when they seized the World Cup at Lord's. That caused a seismic shift in the way cricket was perceived and administered and paved the way for India to become a commercial behemoth. A similar turn of events awaits Harmanpreet and company, and women's cricket at large. The coach, Amol Muzumdar, too had his moment. A domestic giant, he never got a chance to play for the senior men's team as his career ran parallel to the likes of Sachin Tendulkar and Rahul Dravid. Harmanpreet's feisty women ensured that their mentor finally understood what it means to prosper at the highest level.

Having faltered in the 2005 and 2017 World Cup finals, India also had to contend with the pressure of playing at home. When three league matches were lost on the trot against South Africa, Australia, and England, the knives were out on social media. Still, the team persevered and every game produced a new star – Pratika Rawal, for instance. In the final, Shafali Verma and Deepti Sharma turned in an all-round show, while Smriti Mandhana was as solid as ever. Earlier, the turn towards glory happened in the semifinal when Jemimah Rodrigues anchored an astounding chase against defending champions Australia. Her unbeaten 127 is one of the greatest knocks in Indian cricketing history. If India performed the giant killing act towards the climactic phase, so too did South Africa, as England discovered in the semifinal. In skipper Laura Wolvaardt, the Proteas have a splendid batter and her two tons in the semifinal and final were high on class and pugnacity. But the biggest takeaway is this: Indian women have found their place on cricket's biggest stage.

Women's world
महिलाओं की दुनिया

- The **World Cup win** came after a long struggle **on and off the field**.
वर्ल्ड कप की जीत मैदान के अंदर और बाहर लंबी संघर्ष के बाद आई।

India crowned World Champions in Women's Cricket
भारत महिला क्रिकेट विश्व चैंपियन बना

- At the **midnight hour on a magical Sunday**, **Harmanpreet Kaur** and her incredible women made their **tryst with destiny**. India was finally crowned **world champions in women's cricket**.
जादुई रविवार की मध्यरात्रि में, हरमनप्रीत कौर और उनकी अद्भुत टीम ने अपनी तकदीर से मुलाकात की। भारत अंततः महिला क्रिकेट में विश्व चैंपियन बना।

- It was a journey marked by a long history of **angst and joy**, shaped by the sweat and dreams of pioneers such as **Shantha Rangaswamy, Diana Edulji, Mithali Raj**, and **Jhulan Goswami**.
यह एक ऐसी यात्रा थी जो संघर्ष और आनंद के लंबे इतिहास से भरी हुई थी, जिसे शांथा रंगास्वामी, डायना एडुल्जी, मिताली राज और झूलन गोस्वामी जैसी अग्रदूतों के पसीने और सपनों ने आकार दिया।

- In a **high-stakes final** befitting an **ICC World Cup**, India prevailed over **South Africa by 52 runs** at **Navi Mumbai's D.Y. Patil Stadium**, which turned into a **teeming mass of raucous energy**.
आईसीसी विश्व कप के अनुरूप एक उच्च दांव वाले फाइनल में, भारत ने नवी मुंबई के डी.वाई. पाटिल स्टेडियम में दक्षिण अफ्रीका को 52 रनों से हराया, जो जोश और ऊर्जा से भरा हुआ जनसमूह बन गया था।

- This moment is as **epochal** as it was for **Kapil Dev and his men in 1983** when they seized the **World Cup at Lord's**.
यह क्षण उतना ही ऐतिहासिक है जितना कि 1983 में कपिल देव और उनकी टीम का लॉर्ड्स में विश्व कप जीतना था।

- That caused a **seismic shift** in the way **cricket was perceived and administered**, and paved the way for India to become a **commercial behemoth**.
उस जीत ने क्रिकेट की धारणा और प्रबंधन में एक बड़ा परिवर्तन लाया और भारत को व्यावसायिक महाशक्ति बनने का मार्ग प्रशस्त किया।

- A similar turn of events awaits **Harmanpreet and company**, and **women's cricket** at large.
ऐसा ही परिवर्तन अब हरमनप्रीत और उनकी टीम, तथा महिला क्रिकेट के लिए भी प्रतीक्षारत है।

- The coach, **Amol Muzumdar**, too had his moment. A **domestic giant**, he never got a chance to play for the **senior men's team** as his career ran parallel to **Sachin Tendulkar and Rahul Dravid**.

  कोच **अमोल मजूमदार** को भी अपना विशेष क्षण मिला। वह एक **घरेलू दिग्गज** रहे हैं जिन्हें **वरिष्ठ पुरुष टीम** में खेलने का अवसर नहीं मिला क्योंकि उनका करियर **सचिन तेंदुलकर और राहुल द्रविड़** के समानांतर चला।

- **Harmanpreet's feisty women** ensured that their mentor finally understood what it means to **prosper at the highest level**.

  हरमनप्रीत की जुझारू खिलाड़ियों ने सुनिश्चित किया कि उनके **गुरु** को अंततः समझ में आए कि **उच्चतम स्तर पर सफलता** क्या होती है।

- Having faltered in the **2005 and 2017 World Cup finals**, India also had to contend with the **pressure of playing at home**.

  2005 और 2017 विश्व कप फाइनल में चूकने के बाद, भारत को इस बार **घरेलू मैदान पर खेलने के दबाव** का भी सामना करना पड़ा।

- When **three league matches** were lost on the trot against **South Africa, Australia, and England**, the **knives were out on social media**.

  जब **दक्षिण अफ्रीका, ऑस्ट्रेलिया और इंग्लैंड** के खिलाफ लगातार **तीन लीग मैच** हार गए, तो **सोशल मीडिया पर आलोचनाओं की बाढ़ आ गई**।

- Still, the team **persevered** and every game produced a **new star** — **Pratika Rawal**, for instance.

  फिर भी, टीम ने **धैर्य बनाए रखा** और हर मैच ने एक **नया सितारा** पैदा किया — जैसे कि **प्रतिका रावल**।

- In the final, **Shafali Verma** and **Deepti Sharma** turned in an **all-round show**, while **Smriti Mandhana** was as **solid as ever**.

  फाइनल में **शैफाली वर्मा** और **दीप्ति शर्मा** ने शानदार **ऑल-राउंड प्रदर्शन** किया, जबकि **स्मृति मंधाना** हमेशा की तरह **मजबूत** रहीं।

- Earlier, the turn towards glory happened in the **semi-final** when **Jemimah Rodrigues** anchored an **astounding chase** against **defending champions Australia**.

  इससे पहले, **सेमीफाइनल** में **जेमिमा रोड्रिग्स** ने **रक्षात्मक चैंपियन ऑस्ट्रेलिया** के खिलाफ एक **अद्भुत रन-चेज़** का नेतृत्व किया।

- Her **unbeaten 127** is one of the **greatest knocks in Indian cricketing history**.

  उनकी **नाबाद 127 रन की पारी** भारतीय क्रिकेट इतिहास की सबसे शानदार पारियों में से एक है।

- If India performed the **giant killing act** towards the climactic phase, so too did **South Africa**, as **England discovered in the semi-final**.

  यदि भारत ने निर्णायक चरण में **दिग्गजों को हराने का कारनामा** किया, तो **दक्षिण अफ्रीका** ने भी वही किया, जैसा कि **इंग्लैंड ने सेमीफाइनल में अनुभव किया**।

- In skipper **Laura Wolvaardt**, the **Proteas** have a **splendid batter**, and her **two tons in the semi-final and final** were high on **class and pugnacity**.

  कप्तान **लौरा वूल्वार्ट** के रूप में **प्रोटियाज** के पास एक **शानदार बल्लेबाज** है, और उनके **सेमीफाइनल और फाइनल में दो शतक** कौशल और जुझारूपन से भरपूर थे।

- But the **biggest takeaway** is this: **Indian women have found their place on cricket's biggest stage**.

  लेकिन सबसे बड़ा निष्कर्ष यह है: **भारतीय महिलाओं ने क्रिकेट के सबसे बड़े मंच पर अपनी जगह बना ली है**।

Bharat Biotech sets up CRDMO arm to focus on cell and gene therapies

PCS

The Hindu Bureau
HYDERABAD

Bharat Biotech has established a contract research development and manufacturing organisation (CRDMO) focused on cell and gene therapies.

Setting up of the wholly-owned subsidiary Nucelion Therapeutics is part of a strategic expansion into the fast-growing field of next-generation cell and gene therapy CRDMO.

It aims to support global life science innovators with high-quality, scalable process development and manufacturing solutions for advanced therapies, indicated for cancers, autoimmune disorders and rare genetic disorders, the vaccine maker said, announcing the formal launch of the arm on Monday.

Spread across a 30,000 sq.ft purpose-built facility in Genome Valley, Hyderabad, Nucelion has commissioned a GMP facility capable of developing and manufacturing plasmids, viral and non-viral vectors, cell therapies, and aseptic fill and finish, providing end-to-end services for clients. The company will offer end-to-end services, while adhering to international regulatory standards, it said.

Bharat Biotech sets up CRDMO arm to focus on cell and gene therapies
भारत बायोटेक ने सेल और जीन थेरेपी पर केंद्रित CRDMO शाखा की स्थापना की

- **Bharat Biotech** has established a **contract research development and manufacturing organisation (CRDMO)** focused on **cell and gene therapies.**
  भारत बायोटेक ने सेल और जीन थेरेपी पर केंद्रित एक कॉन्ट्रैक्ट रिसर्च, डेवलपमेंट और मैन्युफैक्चरिंग ऑर्गनाइजेशन (CRDMO) की स्थापना की है।

- Setting up of the **wholly-owned subsidiary Nucelion Therapeutics** is part of a **strategic expansion** into the **fast-growing field of next-generation cell and gene therapy CRDMO.**
  पूरी तरह से स्वामित्व वाली सहायक कंपनी न्यूसेलियन थेरेप्यूटिक्स की स्थापना तेजी से बढ़ते अगली पीढ़ी की सेल और जीन थेरेपी CRDMO क्षेत्र में रणनीतिक विस्तार का हिस्सा है।

- It aims to **support global life science innovators** with **high-quality, scalable process development and manufacturing solutions** for **advanced therapies**, indicated for **cancers, autoimmune disorders, and rare genetic disorders**, the vaccine maker said, announcing the **formal launch** of the arm on Monday.
  वैक्सीन निर्माता ने सोमवार को इस शाखा के औपचारिक शुभारंभ की घोषणा करते हुए कहा कि इसका उद्देश्य वैश्विक जीवन विज्ञान नवाचारकों को उच्च गुणवत्ता वाले, स्केलेबल प्रक्रिया विकास और निर्माण समाधान प्रदान करना है, विशेष रूप से कैंसर, ऑटोइम्यून विकारों और दुर्लभ आनुवंशिक रोगों के लिए उन्नत उपचारों हेतु।

- Spread across a **30,000 sq.ft purpose-built facility in Genome Valley, Hyderabad**, **Nucelion** has commissioned a **GMP facility** capable of developing and manufacturing **plasmids, viral and non-viral vectors, cell therapies, and aseptic fill and finish**, providing **end-to-end services for clients.**
  हैदराबाद के जीनोम वैली में 30,000 वर्ग फुट के उद्देश्यपूर्ण निर्मित परिसर में स्थित न्यूसेलियन ने एक GMP सुविधा स्थापित की है, जो प्लास्मिड, वायरल और नॉन-वायरल वेक्टर, सेल थेरेपी, और एसेप्टिक फिल एंड फिनिश के विकास और निर्माण में सक्षम है, जिससे ग्राहकों को एंड-टू-एंड सेवाएँ प्रदान की जा सकें।

- The company will **offer end-to-end services**, while **adhering to international regulatory standards**, it said.
  कंपनी ने कहा कि वह अंतरराष्ट्रीय विनियामक मानकों का पालन करते हुए एंड-टू-एंड सेवाएँ प्रदान करेगी।

Earthquake kills 20 and injures over 500 in northern Afghanistan

REUTERS

A 6.3-magnitude earthquake struck northern Afghanistan near Mazar-i-Sharif, authorities said on Monday, killing at least 20 and injuring over 500. The tremor damaged the Blue Mosque and homes across Balkh and Samangan. Authorities reported significant material losses while rescue teams aided stranded residents. AFP

Earthquake kills 20 and injures over 500 in northern Afghanistan
उत्तरी अफगानिस्तान में भूकंप से 20 लोगों की मौत, 500 से अधिक घायल

• A **6.3-magnitude earthquake** struck **northern Afghanistan near Mazar-i-Sharif**, authorities said on Monday, **killing at least 20** and **injuring over 500.**

अधिकारियों ने सोमवार को बताया कि **6.3 तीव्रता का भूकंप** मजार-ए-शरीफ के पास उत्तरी अफगानिस्तान में आया, जिससे **कम से कम 20 लोगों की मौत** हो गई और **500 से अधिक लोग घायल** हो गए।

• The **tremor damaged the Blue Mosque and homes** across **Balkh and Samangan.**

इस कंपन से बाल्ख और समनगन में स्थित **ब्लू मस्जिद और कई घरों को नुकसान** पहुंचा।

• **Authorities reported significant material losses** while **rescue teams aided stranded residents.**

अधिकारियों ने भारी भौतिक क्षति की सूचना दी, वहीं बचाव दलों ने फंसे हुए निवासियों की मदद की।

Oldest Olympic champion Coste passes away at 101

World's oldest Olympic champion, former track cyclist Charles Coste, passed away aged 101, French sports minister Marina Ferrari announced on Sunday. Coste won gold at the 1948 London Olympics and was a torch bearer at the 2024 Paris Games. Coste passed away on Thursday.

Oldest Olympic champion Coste passes away at 101
सबसे बुजुर्ग ओलंपिक चैंपियन कॉस्ट का 101 वर्ष की आयु में निधन

• **World's oldest Olympic champion,** former **track cyclist Charles Coste, passed away aged 101,** French sports minister Marina Ferrari announced on Sunday.

दुनिया के सबसे बुजुर्ग ओलंपिक चैंपियन, पूर्व ट्रैक साइकिलिस्ट चार्ल्स कॉस्ट, का **101 वर्ष की आयु में निधन** हो गया, यह घोषणा फ्रांस की खेल मंत्री मरीना फेरारी ने रविवार को की।

• **Coste won gold** at the **1948 London Olympics** and was a **torch bearer at the 2024 Paris Games.**

कॉस्ट ने 1948 लंदन ओलंपिक में स्वर्ण पदक जीता था और **2024 पेरिस खेलों में मशालवाहक** रहे थे।

• **Coste passed away on Thursday.**

कॉस्ट का निधन गुरुवार को हुआ।

Sinner back as World No. 1 with Paris Masters win

Agence France Presse
PARIS

Jannik Sinner won the Paris Masters for the first time, beating Felix Auger-Aliassime 6-4, 7-6(4) on Sunday as the four-time Grand Slam champion reclaimed his position atop the world rankings.

The 24-year-old's maiden crown in Paris, coupled with incumbent World No. 1 Carlos Alcaraz crashing out early in the tournament, will see Sinner return to the pinnacle of men's tennis when the ATP rankings are updated on Monday.

The Italian first claimed the No. 1 ranking in June last year and held it for 65 weeks until he lost the US Open title match to Alcaraz in September.

Reclaiming top spot

Back on top: Sinner denied a fighting Auger-Aliassime in the final. AFP

from his rival in Paris will taste even sweeter for Sinner after he went down in a five-set final to Alcaraz at Roland-Garros earlier in the season.

"I'm of course happy," Sinner said.

"I knew from the beginning of the week that there is this chance."

Sinner back as World No. 1 with Paris Masters win
पेरिस मास्टर्स जीत के साथ सिनर फिर बने विश्व नंबर 1

• **Jannik Sinner** won the **Paris Masters for the first time**, beating **Felix Auger-Aliassime 6-4, 7-6(4)** on Sunday as the **four-time Grand Slam champion reclaimed his position atop the world rankings.**

जैनिक सिनर ने पहली बार पेरिस मास्टर्स खिताब जीता, रविवार को फेलिक्स ऑगर-अलियासिम को 6-4, 7-6(4) से हराते हुए चार बार के ग्रैंड स्लैम चैंपियन के रूप में विश्व रैंकिंग में शीर्ष स्थान दोबारा हासिल किया।

• The **24-year-old's maiden crown in Paris**, coupled with **incumbent World No. 1 Carlos Alcaraz crashing out early in the tournament**, will see **Sinner return to the pinnacle of men's tennis** when the **ATP rankings are updated on Monday.**

24 वर्षीय खिलाड़ी की पेरिस में पहली जीत, और मौजूदा विश्व नंबर 1 कार्लोस अल्काराज़ के टूर्नामेंट से जल्दी बाहर हो जाने के कारण, सिनर सोमवार को एटीपी रैंकिंग अपडेट होने पर पुरुष टेनिस के शीर्ष स्थान पर लौटेंगे।

• The **Italian first claimed the No. 1 ranking in June last year** and **held it for 65 weeks** until he **lost the US Open title match to Alcaraz in September.**

इस इतालवी खिलाड़ी ने पिछले वर्ष जून में पहली बार नंबर 1 रैंकिंग हासिल की थी और 65 सप्ताह तक इसे बनाए रखा, जब तक कि उन्होंने सितंबर में यूएस ओपन खिताबी मुकाबला अल्काराज़ से नहीं हार दिया।

• **Reclaiming top spot** from his rival in **Paris** will **taste even sweeter for Sinner** after he **went down in a five-set final to Alcaraz at Roland-Garros earlier in the season.**

अपने प्रतिद्वंद्वी से पेरिस में शीर्ष स्थान वापस पाना सिनर के लिए और भी मीठा होगा, क्योंकि उन्होंने इस सीज़न की शुरुआत में रोलां गैरो में अल्काराज़ के खिलाफ पांच सेट के फाइनल में हार झेली थी।

• "I'm of course happy," **Sinner said.**

सिनर ने कहा, "मैं निश्चित रूप से खुश हूं।"

• "I knew from the beginning of the week that there is this chance."

"मैंने सप्ताह की शुरुआत से ही जान लिया था कि यह मौका मौजूद है।"

'We've been playing good cricket, but we had to win one big tournament'

Harmanpreet, the 36-year-old India skipper, reveals how the loss against England in the league stage provided the trigger for the dramatic turnaround

Lavanya L
NAVI MUMBAI

Belief might not be able to move physical mountains, but it can definitely win you a World Cup. Ask India captain Harmanpreet Kaur.

An ODI World Cup campaign that started with so much promise found itself precariously on the edge of a cliff after three losses to the tournament's eventual semifinalists. India kept calm to make the knockouts and never looked back.

"We felt we could win from the first ball itself," Harmanpreet told reporters after India clinched the title.

"A lot of things changed for us – especially our self-belief. We have played good cricket for a long time. We knew what we could do as a team. Toss doesn't matter because we don't normally win those anyway!" she quipped to much laughter from the press.

"It was a very good match. It seems easy to say now, but there was a lot of tension in between when they were batting. Laura (Wolvaardt) barely gave us a chance," she added.

The Women in Blue stumbled midway through the tournament, the consecutive defeats to South Africa, Australia and England making fans worry about the team missing the knockouts.

"The last month has been very interesting. It's very rare for one to stay positive despite things not going your way. Not a single player said, "What will we do now?" Everybody just thought, "It's okay." After losing the England match, we were really heartbroken. We were about to win that match, but we collapsed. We had seen this in the past. Amol sir said, 'You can't make the same mistakes again and again. You have to cross that line.' That night changed a lot for us. It had an impact on everyone."

South Africa didn't make that any easier. Laura Wolvaardt's century helped the Proteas take the chase deep. Harmanpreet could be spotted talking to herself constantly as she worked to keep spirits high on the field.

"I was just telling them – keep faith. We've worked really hard for this. Opportunities will come, and we have to grab them. ODI cricket is long – there are many phases you have to tick off again and again."

Against South Africa in the final, India was cheered on by a 39,555-strong crowd, which helped keep the Proteas in the hot seat all the way through.

"We could definitely feel pockets of pressure when we were batting. They (India) would take a few wickets, and then you really felt the pressure to hang in there and build partnerships again. We perhaps crumbled a little bit at the end there," Wolvaardt admitted.

Despite falling just short of the 300-run

mark, Harmanpreet kept faith in her bowlers' abilities to put the squeeze on South Africa.

"We know our spinners have always been our biggest strength. As soon as Deepti (Sharma) and Shree Charani came, we would start getting wickets. When we went in, we thought we just needed 10 good balls. We just need 10 wickets. Don't look at the scoreboard, because if you do, you'll feel pressure. Just think – we have to deliver 10 good balls, take 10 wickets, and the job is done," Harmanpreet explained.

"And that's exactly what happened. We focused on wickets. We knew there would be partnerships – they have also come to play hard cricket – but we would only look for wickets. And as the wickets came, we kept talking – three more to go, two more, one more – and kept believing."

Positives galore
While South Africa was undone by one-the-money deliveries in the final, it had many bright spots in its run this campaign. Disciplined seamers, brave performances from the lower order with the bat.

"I'm pretty proud of the way that we were able to play spin. It's been a big talking point within this group. With it, we've made it to the final of a World Cup in subcontinent conditions too. The seamers had a good tournament too; at some points, they bowled better than our spinners, economy-wise," Wolvaardt stated.

Wolvaardt's own imperious knockouts form stand out in a stellar campaign. Two back-to-back centuries in the business end of the tournament gave her some confidence in a year she labelled as less than ideal with the bat.

"My ODI cricket has come a long way in this tournament. To win games, you have to be positive and aggressive. I have tried to explore that a bit in this tournament. It hasn't been my best year in ODI cricket. I was a bit too conservative and one-dimensional," she said.

"I am happy with the different options I was able to bring in through this tournament. Today, I scored quite a lot of leg-side runs or a few leg-side boundaries,

which is something I've been working on to open up different spaces because teams often stack the offside and dot me up there."

Injury struggles
India, meanwhile, had to deal with a host of issues en route to the final: the team setup, mounting dot ball percentage, top order's struggles initially and sub-par fielding, to name a few. While they managed to get on top of all of that by the end, the one thing they could do nothing about was injuries, which hit morale before and during the tournament.

"We didn't want Pratika (Rawal) to face any such thing. When she got injured, everybody was crying.

"Even before that, when Yastika (Bhatia) got injured during our training camp, everybody was crying because this team is very special. They pray for each other. They stay together in ups and downs," Harmanpreet said.

"First, Yastika leaving the team was heartbreaking for us. Then, when we were just starting to do well, Pratika got injured. But when Shafali came, we didn't want her to feel that she came in under an injury cloud. Even Pratika was so positive. I think everyone took everything positively. They didn't think, "Why is this happening to us?" Before the tournament started, we had an injury; in the middle of the tournament, we had a big injury. Yet, everybody was so positive. Everyone was thinking that our end goal was this trophy. We worked hard and this is the result."

As the Women in Blue inched closer to victory before a capacity crowd at the D.Y. Patil Stadium here, social media and broadcasting channels were flooded with comparisons to the 1983 World Cup victory by Kapil Dev's side and India's inspirational run in a home World Cup in 2011. Harmanpreet, too, much like Kapil did then, took an important catch to seal the game in India's favour. The parallels are not lost on the 36-year-old.

"I've played many World Cups with Smriti. Every time we lost, we went home heartbroken and stayed quiet for a few days. When we returned, we always said – we have to start again from ball one. It

was heartbreaking because we played so many World Cups – reaching finals, semifinals, and sometimes not even that far. We were always thinking, when will we break this.

"We have been talking about this for many years – we've been playing good cricket, but we had to win one big tournament. Without that, we couldn't talk about change.

"At the end of the day, fans and the audience want to see their favourite team win. It's not that we weren't playing good cricket, but we were waiting badly for this moment, and today we got a chance to live it."

Honouring legends
One of the most memorable images of the night was the side calling former cricketers Mithali Raj, Jhulan Goswami, Reema Malhotra, Anjum Chopra, and others to take part in the celebrations, as an acknowledgment of the paths they paved for the generations that followed.

"Jhulan Di was my biggest support. When I joined the team, she was leading it. She always supported me in my early days when I was very raw and didn't know much about cricket. I used to play with boys, and the school principal picked me up, and within a year, I started representing the country," she said.

"In the initial days, Anjum supported me a lot. I always remember how she used to take me along with her team. I learnt a lot from her and passed it on to my team. Both of them have been a great support for me. I'm very grateful that I got to share a special moment with them. It was a very emotional moment. I think we all were waiting for this. Finally, we were able to touch this trophy."

An embrace with Jhulan turned into a big hug with everyone in tears.

Meanwhile, despite it being a third defeat in as many World Cup finals for South Africa, Wolvaardt chose to focus on the positives of an undoubtedly spirited campaign.

"To make it all the way to the final is really awesome. We played some good cricket through this tournament. At one stage, we won five games in a row, which is really big for this group. We were searching for a consistency that we don't necessarily have in bilaterals," the 26-year-old opening batter said.

"Making the 2023 T20 World Cup final helped put domestic contracts in place, which was big for our depth as a team. The 2024 T20 World Cup final made us bigger names in cricket.

"We're the team that is consistently making finals now, whereas before, it was maybe a one-time thing. I am really proud of making the finals three times in a row. It shows that we're doing something right domestically and from a squad perspective. Hopefully, we can keep doing that and one day, we can win one!"

THE QUOTES

I have played many World Cups with Smriti. Every time we lost, we went home heartbroken and stayed quiet for a few days
— Harmanpreet

When we went in to defend the total in the final against, we thought we just needed 10 good balls and 10 wickets
— Harmanpreet

To make it all the way to the final is really awesome. We played some good cricket through this tournament. At one stage, we won five games in a row, which is really big for this group
— Wolvaardt

We're the team that is consistently making finals now, whereas before, it was maybe a one-time thing
— Wolvaardt

'We've been playing good cricket, but we had to win one big tournament'
'हम अच्छा क्रिकेट खेल रहे थे, लेकिन हमें एक बड़ा टूर्नामेंट जीतना था'

- **Harmanpreet**, the **36-year-old India skipper**, reveals how the **loss against England in the league stage** provided the **trigger for the dramatic turnaround.**
  36 वर्षीय भारतीय कप्तान हरमनप्रीत ने बताया कि कैसे **इंग्लैंड के खिलाफ लीग चरण की हार** ने टीम के नाटकीय बदलाव की शुरुआत की।

- **Belief might not move mountains**, but it can **win you a World Cup**, said **India captain Harmanpreet Kaur.**
  विश्वास शायद पहाड़ों को **नहीं हिला सकता**, लेकिन यह आपको **वर्ल्ड कप जिता सकता है**, ऐसा **भारत की कप्तान हरमनप्रीत कौर** ने कहा।

- An **ODI World Cup campaign** that started with **promise** found itself **on the edge after three losses** to the tournament's **semi-finalists.**

  एकदिवसीय विश्व कप अभियान, जो उम्मीदों के साथ शुरू हुआ था, तीन हारों के बाद टूर्नामेंट के सेमीफाइनलिस्टों के सामने संकट में पड़ गया।

- **India kept calm**, made the **knockouts**, and **never looked back.**

  भारत ने संयम बनाए रखा, नॉकआउट में प्रवेश किया, और पीछे मुड़कर नहीं देखा।

- "We felt we could win from the first ball itself," **Harmanpreet** told reporters after **India clinched the title.**

  "हमें लगा कि हम पहली गेंद से ही जीत सकते हैं," हरमनप्रीत ने रिपोर्टरों से कहा, जब भारत ने खिताब जीता।

- "A lot of things changed for us — especially our self-belief. We have played good cricket for a long time."

  "हमारे लिए बहुत कुछ बदला — खासकर हमारा आत्मविश्वास। हमने लंबे समय से अच्छा क्रिकेट खेला है।"

- "It was a very good match… but there was a lot of tension when they were batting. **Laura (Wolvaardt) barely gave us a chance.**"

  "यह बहुत अच्छा मैच था… लेकिन जब वे बल्लेबाजी कर रहे थे तब बहुत तनाव था। लॉरा (वोल्वार्ट) ने हमें मुश्किल से कोई मौका दिया।"

- The **Women in Blue stumbled midway**, with **defeats to South Africa, Australia and England** worrying fans.

  भारतीय महिला टीम बीच में लड़खड़ा गई, दक्षिण अफ्रीका, ऑस्ट्रेलिया और इंग्लैंड के खिलाफ हारों ने प्रशंसकों को चिंतित कर दिया।

- "After losing the England match, we were heartbroken… **Amol sir said — you can't make the same mistakes again and again. That night changed a lot for us.**"

  "इंग्लैंड से हारने के बाद हम बहुत दुखी थे… अमोल सर ने कहा — तुम एक ही गलती बार-बार नहीं कर सकते। उस रात ने हमारे लिए बहुत कुछ बदल दिया।"

- **South Africa's Laura Wolvaardt's century** made the **final tense**, as **Harmanpreet kept motivating the team on the field.**

  दक्षिण अफ्रीका की लॉरा वोल्वार्ट की शतकीय पारी ने फाइनल को तनावपूर्ण बना दिया, जबकि हरमनप्रीत मैदान पर टीम को लगातार प्रेरित करती रहीं।

- "I told them — keep faith. We've worked hard for this. ODI cricket is long — you have to keep ticking every phase."

  "मैंने उन्हें कहा — विश्वास बनाए रखो। हमने इसके लिए कड़ी मेहनत की है। वनडे क्रिकेट लंबा होता है — हर चरण में बने रहना पड़ता है।"

- Against **South Africa in the final**, India was **cheered by 39,555-strong crowd**, which **kept the pressure alive.**

  फाइनल में दक्षिण अफ्रीका के खिलाफ, भारत को 39,555 दर्शकों की भीड़ का समर्थन मिला, जिसने तनाव को बनाए रखा।

- **Wolvaardt admitted** that South Africa **crumbled under pressure**, though they **fought hard till the end.**

  वोल्वार्ट ने स्वीकार किया कि दक्षिण अफ्रीका दबाव में टूट गया, हालांकि उन्होंने अंत तक कड़ी टक्कर दी।

  Harmanpreet trusted her spinners, saying **"We knew we just needed 10 good balls, 10 wickets, and the job would be done."**

  हरमनप्रीत ने अपनी स्पिनरों पर भरोसा जताया, कहते हुए "हमें पता था हमें सिर्फ 10 अच्छी गेंदें और 10 विकेट चाहिए — और काम हो जाएगा।"

- "We focused on wickets. We didn't look at the scoreboard. We kept believing — three more, two more, one more!"

  "हमने सिर्फ विकेटों पर ध्यान दिया। स्कोरबोर्ड नहीं देखा। हमने विश्वास बनाए रखा — तीन और, दो और, एक और!"

Positives galore
सकारात्मक पहलू भरपूर

- **South Africa's campaign** had **bright spots** — disciplined seamers, brave batting from lower order, and **improved spin play.**
  दक्षिण अफ्रीका के अभियान में **कई सकारात्मक पहलू थे** — अनुशासित तेज गेंदबाज, निचले क्रम की साहसी बल्लेबाजी, और **स्पिन के खिलाफ बेहतर प्रदर्शन।**
- **Wolvaardt's back-to-back centuries** gave her **confidence**, though she said **"It hasn't been my best year in ODI cricket."**
  वोल्वार्ड्ट की लगातार दो शतकीय पारियों ने उन्हें **आत्मविश्वास दिया**, हालांकि उन्होंने कहा, **"यह मेरा वनडे क्रिकेट का सबसे अच्छा वर्ष नहीं रहा।"**

Injury struggles
चोटों से जूझना

- India faced **injuries, poor fielding, and top-order struggles**, but the team **stayed united and positive.**
  भारत को **चोटों, कमजोर फील्डिंग और शीर्ष क्रम की दिक्कतों** का सामना करना पड़ा, लेकिन टीम **एकजुट और सकारात्मक** रही।
- "When Pratika got injured, everybody cried… when Yastika was injured, it broke our hearts. But we stayed positive."
  "जब प्रतिका घायल हुई, सब रो पड़े… जब यास्तिका घायल हुई, तो हमारे दिल टूट गए। लेकिन हम सकारात्मक रहे।"

Honouring legends
दिग्गजों को सम्मान देना

- The team **invited former cricketers** — **Mithali Raj, Jhulan Goswami, Reema Malhotra, Anjum Chopra** — to join the celebrations.
  टीम ने **पूर्व क्रिकेटरों — मिताली राज, झूलन गोस्वामी, रीमा मल्होत्रा, अंजुम चोपड़ा — को जश्न में शामिल होने के लिए आमंत्रित किया।**

- **"Jhulan Di was my biggest supporter.** She guided me when I was new and raw in cricket," **Harmanpreet said emotionally.**
  "झूलन दी मेरा सबसे बड़ा सहारा थीं। जब मैं नई थी और क्रिकेट नहीं जानती थी, तब उन्होंने मुझे मार्गदर्शन दिया," हरमनप्रीत ने भावुक होकर कहा।
- "It was emotional sharing this moment with them. Finally, we touched this trophy."
  "उनके साथ यह पल साझा करना भावुक था। आखिरकार, हमने इस ट्रॉफी को छुआ।"

Wolvaardt's perspective
वोल्वार्ड्ट का दृष्टिकोण

- Despite South Africa's **third defeat in a World Cup final**, Wolvaardt **focused on the positives**, saying,
  "To make it all the way to the final is awesome. We played good cricket. We're consistently making finals now."
  विश्व कप फाइनल में तीसरी हार के बावजूद, वोल्वार्ड्ट ने सकारात्मक पक्ष पर ध्यान केंद्रित किया, कहते हुए —
  "फाइनल तक पहुंचना शानदार है। हमने अच्छा क्रिकेट खेला। अब हम लगातार फाइनल तक पहुंच रहे हैं।"

GS Paper 1: History, Society and Geography	
TOPICS COVERED	**04 November 2025**
1.	BJP seeks Jharkhand Health Minister's exit over HIV infections एचआईवी संक्रमण मामले में बीजेपी ने झारखंड के स्वास्थ्य मंत्री के इस्तीफे की मांग की
2.	Armyman takes over power in Bangladesh coup बांग्लादेश तख्तापलट में सैन्य अधिकारी ने सत्ता संभाली
3.	Tanzania's President blames 'foreigners' for deadly protests तंजानिया की राष्ट्रपति ने घातक विरोध प्रदर्शनों के लिए 'विदेशियों' को जिम्मेदार ठहराया

Resistance remembered

Battle roar: Members of the Roodebrug Soerabaia Community and Reenactor Indonesia take part in a re-enactment of the Battle of Surabaya, the peak of the battle which took place in November 1945, in Surabaya on Sunday. AFP

Battle roar: Members of the Roodebrug Soerabaia Community and Reenactor Indonesia take part in a re-enactment of theBattle of
Surabaya, the peak of the battle which took place inNovember 1945, in Surabaya on Sunday.

BJP seeks Jharkhand Health Minister's exit over HIV infections

GS I: Resources

Press Trust of India
RANCHI

The Jharkhand unit of the BJP on Monday demanded the removal of Health Minister Irfan Ansari over an incident in which five thalassaemia-affected children were allegedly infected with HIV following blood transfusions in West Singhbhum district.

Party workers staged demonstrations outside Sadar Hospitals across the State, raising slogans against the JMM-led alliance government.

Stern action sought

In the State capital, the BJP's Ranchi Mahanagar Committee held a dharna on the premises of the Sadar Hospital, which was attended by senior leaders, including Ranchi MLA C.P. Singh.

"The health of the health department has deteriorated in Jharkhand. It is very unfortunate that thalassemia-affected children were transfused HIV-infected blood. Stern action should be taken against those responsible," Mr. Singh told reporters.

Five thalassaemia-hit children given infected blood in West Singhbhum's Chaibasa town

The family of a seven-year-old thalassemia patient had alleged on October 24 that the local blood bank in Chaibasa, the district headquarters town of West Singhbhum, had transfused HIV-infected blood.

A five-member medical team from Ranchi carried out an investigation on October 26, and it found four more children tested HIV positive after being transfused HIV-infected blood.

BJP seeks Jharkhand Health Minister's exit over HIV infections
एचआईवी संक्रमण मामले में बीजेपी ने झारखंड के स्वास्थ्य मंत्री के इस्तीफे की मांग की

- The **Jharkhand unit of the BJP** on Monday demanded the **removal of Health Minister Irfan Ansari** over an incident in which **five thalassaemia-affected children** were allegedly **infected with HIV** following **blood transfusions** in **West Singhbhum district**.
 झारखंड भाजपा इकाई ने सोमवार को स्वास्थ्य मंत्री इरफान अंसारी को हटाने की मांग की, क्योंकि पश्चिम सिंहभूम जिले में पांच थैलेसीमिया प्रभावित बच्चों को रक्त संक्रमण के बाद कथित रूप से एचआईवी से संक्रमित पाया गया।

- **Party workers** staged **demonstrations outside Sadar Hospitals** across the State, raising **slogans against the JMM-led alliance government**.
 पार्टी कार्यकर्ताओं ने राज्यभर के सदर अस्पतालों के बाहर प्रदर्शन किया और झामुमो-नेतृत्व वाली गठबंधन सरकार के खिलाफ नारे लगाए।

Stern action sought
कड़ी कार्रवाई की मांग

- In the **State capital**, the **BJP's Ranchi Mahanagar Committee** held a **dharna** on the premises of the **Sadar Hospital**, which was attended by **senior leaders**, including **Ranchi MLA C.P. Singh**.
 राजधानी रांची में भाजपा की रांची महानगर समिति ने सदर अस्पताल परिसर में धरना दिया, जिसमें वरिष्ठ नेताओं, जिनमें रांची के विधायक सी.पी. सिंह भी शामिल थे, ने भाग लिया।

- "The **health of the health department** has deteriorated in Jharkhand. It is very **unfortunate** that **thalassemia-affected children** were transfused **HIV-infected blood. Stern action** should be taken against those responsible," Mr. Singh told reporters.
 श्री सिंह ने पत्रकारों से कहा, "झारखंड में स्वास्थ्य विभाग का स्वास्थ्य बिगड़ चुका है। यह बहुत दुर्भाग्यपूर्ण है कि थैलेसीमिया से पीड़ित बच्चों को एचआईवी संक्रमित रक्त चढ़ाया गया। जिम्मेदारों के खिलाफ कड़ी कार्रवाई की जानी चाहिए।"

- The **family of a seven-year-old thalassemia patient** had alleged on **October 24** that the **local blood bank in Chaibasa**, the **district headquarters town of West Singhbhum**, had **transfused HIV-infected blood.**
 सात वर्षीय थैलेसीमिया रोगी के परिवार ने 24 अक्टूबर को आरोप लगाया था कि पश्चिम सिंहभूम जिला मुख्यालय चाईबासा के स्थानीय रक्त बैंक ने एचआईवी संक्रमित रक्त चढ़ाया था।

- A **five-member medical team from Ranchi** carried out an **investigation on October 26**, and it found **four more children tested HIV positive** after being **transfused HIV-infected blood.**
 रांची से आई पांच सदस्यीय चिकित्सकीय टीम ने 26 अक्टूबर को जांच की, और पाया कि चार और बच्चों को एचआईवी संक्रमित रक्त चढ़ाए जाने के बाद एचआईवी पॉजिटिव पाया गया।

Armyman takes over power in Bangladesh coup

`GS I: History`

NEW DELHI, Nov. 3: The Garrison Commander of Dacca took over as President of Bangladesh to-day following the overthrow of the 11-week old regime headed by Khandakar Moshtaque Ahmed in what appeared to be a peaceful transition, according to diplomatic sources.

The name of the new Chief of state was given as Brigadier Khalid Musharaf. Mr. Moshtaque Ahmed had pledged his loyalty to the new regime, these sources said.

Diplomatic sources here said unconfirmed reports indicated that Bangladesh's new strongman was Brigadier Khalid Musharaf, Chief of the Army General Staff.

Mr. Moshtaque Ahmed was swept to power in the August 15 military coup, in which Bangabandhu Sheikh Mujibur Rahman and several members of his family, including his wife, were brutally gunned down at his residence.

Bangladesh remained cut off from the rest of the world since early morning. Dacca Airport was closed to traffic and radio Bangladesh was off the air. Simultaneously all telecommunication, satellite and wireless links were also severed.

Western news media reported at night that troops had surrounded the Presidential Palace and occupied strategic points in Dacca.

Radio Bangladesh resumed its broadcast around 19-300 hours , but made no mention of the domestic developments.

Armyman takes over power in Bangladesh coup
बांग्लादेश तख्तापलट में सैन्य अधिकारी ने सत्ता संभाली

- **NEW DELHI, Nov. 3:** The **Garrison Commander of Dacca** took over as **President of Bangladesh** today following the **overthrow of the 11-week-old regime** headed by **Khandakar Moshtaque Ahmed** in what appeared to be a **peaceful transition**, according to **diplomatic sources.**
  नई दिल्ली, 3 नवंबर: ढाका के गैरीसन कमांडर ने आज बांग्लादेश के राष्ट्रपति के रूप में पदभार संभाला, जब खंदाकर मोश्ताक अहमद के 11 सप्ताह पुराने शासन को तख्तापलट में गिरा दिया गया, जो कूटनीतिक सूत्रों के अनुसार एक शांतिपूर्ण परिवर्तन प्रतीत हो रहा था।

The **name of the new Chief of state** was given as **Brigadier Khalid Musharaf.**
नए राज्य प्रमुख का नाम ब्रिगेडियर खालिद मुशर्फ बताया गया।

- **Mr. Moshtaque Ahmed** had **pledged his loyalty** to the **new regime**, these sources said.
  श्री मोश्ताक अहमद ने नए शासन के प्रति अपनी निष्ठा जताई, ऐसा सूत्रों ने बताया।

- **Diplomatic sources** here said **unconfirmed reports** indicated that **Bangladesh's new strongman** was **Brigadier Khalid Musharaf, Chief of the Army General Staff.**
  कूटनीतिक सूत्रों ने कहा कि अप्रमाणित रिपोर्टों के अनुसार बांग्लादेश के नए शक्तिशाली नेता सेना के जनरल स्टाफ प्रमुख ब्रिगेडियर खालिद मुशर्फ हैं।

- **Mr. Moshtaque Ahmed** was **swept to power** in the **August 15 military coup**, in which **Bangabandhu Sheikh Mujibur Rahman** and several members of his family, including his **wife**, were **brutally gunned down** at his **residence.**
  श्री मोश्ताक अहमद 15 अगस्त के सैन्य तख्तापलट में सत्ता में आए, जिसमें बंगबंधु शेख मुजीबुर रहमान और उनके परिवार के कई सदस्य, जिनमें उनकी पत्नी भी शामिल थीं, को उनके आवास पर बेरहमी से गोली मार दी गई।

- **Bangladesh remained cut off** from the rest of the world since **early morning.**
  बांग्लादेश सुबह से ही दुनिया के बाकी हिस्सों से कट गया था।

- **Dacca Airport** was **closed to traffic** and **Radio Bangladesh** was **off the air.**
  ढाका हवाई अड्डा को यातायात के लिए बंद कर दिया गया था और रेडियो बांग्लादेश भी बंद था।

- **Simultaneously**, all **telecommunication, satellite and wireless links** were also **severed.**
  साथ ही, सभी दूरसंचार, उपग्रह और वायरलेस संपर्कों को भी काट दिया गया।

- **Western news media** reported at night that **troops had surrounded the Presidential Palace** and **occupied strategic points in Dacca.**
  पश्चिमी समाचार माध्यमों ने रात में बताया कि सैनिकों ने राष्ट्रपति भवन को घेर लिया था और ढाका के रणनीतिक स्थलों पर कब्जा कर लिया था।

- **Radio Bangladesh** resumed its **broadcast around 19:300 hours**, but made **no mention of the domestic developments.**
रेडियो बांग्लादेश ने लगभग 19:300 घंटे पर अपना प्रसारण फिर शुरू किया, लेकिन घरेलू घटनाक्रम का कोई उल्लेख नहीं किया।

DODOMA
Tanzania's President blames 'foreigners' for deadly protests

GS I: Mapping

AFP

President Samia Suluhu Hassan was sworn in on Monday after Tanzania's disputed election that barred Opposition candidates and triggered deadly protests. She vowed unity and blamed "foreigners" for unrest. Tensions persisted as cities remained shut down and rights groups reported deaths amid opposition outrage. AP

Tanzania's President blames 'foreigners' for deadly protests
तंजानिया की राष्ट्रपति ने घातक विरोध प्रदर्शनों के लिए 'विदेशियों' को जिम्मेदार ठहराया

- **President Samia Suluhu Hassan** was **sworn in on Monday** after **Tanzania's disputed election** that **barred Opposition candidates** and **triggered deadly protests.**
राष्ट्रपति सामिया सुलुहू हसन ने सोमवार को शपथ ली, तंजानिया के विवादित चुनाव के बाद, जिसमें विपक्षी उम्मीदवारों को प्रतिबंधित किया गया और घातक विरोध प्रदर्शनों की शुरुआत हुई।

- She **vowed unity** and **blamed "foreigners"** for unrest.
उन्होंने एकता का संकल्प लिया और अशांति के लिए "विदेशियों" को दोषी ठहराया।

- **Tensions persisted** as **cities remained shut down** and **rights groups reported deaths** amid **opposition outrage.**
तनाव जारी रहा, क्योंकि शहर बंद रहे और विपक्ष के गुस्से के बीच मानवाधिकार संगठनों ने मौतों की सूचना दी।

GS Paper II: Polity, Governance, And International Relations	
TOPICS COVERED	**04 November 2025**
1.	Revision of poll rolls begins in 12 States and U.T.s today 12 राज्यों और केंद्र शासित प्रदेशों में आज से मतदाता सूची संशोधन शुरू
2.	India, Bahrain hold talks on boosting defence, trade ties भारत और बहरीन ने रक्षा और व्यापार संबंधों को बढ़ाने पर वार्ता की
3.	Delhi HC upholds FSSAI ban on 'ORS' tagged drinks दिल्ली उच्च न्यायालय ने 'ORS' लिखे पेयों पर FSSAI के प्रतिबंध को बरकरार रखा
4.	What are the challenges with the High Seas Treaty? हाई सीज़ संधि से जुड़ी चुनौतियाँ क्या हैं?
5.	QUIZ
6.	India trims Russian oil import by 29% in September भारत ने सितंबर में रूसी तेल आयात में 29% की कटौती की
7.	Trump justifies decision to restart nuke tests; says Pak., China doing it ट्रम्प ने परमाणु परीक्षण फिर से शुरू करने के निर्णय का बचाव किया; कहा पाकिस्तान और चीन ऐसा कर रहे हैं
8.	Hunger monitor confirms famine in Darfur's El Fasher भूख मॉनिटर ने दारफुर के एल फाशेर में अकाल की पुष्टि की
9.	Trump does not rule out any kind of army operation in Nigeria ट्रम्प ने नाइजीरिया में किसी भी प्रकार के सैन्य अभियान की संभावना से इनकार नहीं किया
10	UAE is supplying weapons to RSF militia, says Sudan's ambassador to India Eltom यूएई आरएसएफ मिलिशिया को हथियार उपलब्ध करा रहा है, भारत में सूडान के राजदूत एलटोम ने कहा

Revision of poll rolls begins in 12 States and U.T.s today

GS II: Elections

The Hindu Bureau
NEW DELHI

The Election Commission will begin the enumeration phase of the special intensive revision (SIR) of electoral rolls in 12 States and Union Territories on Tuesday.

The SIR exercise will cover close to 51 crore voters in Tamil Nadu, West Bengal, Kerala, Uttar Pradesh, Madhya Pradesh, Rajasthan, Chhattisgarh, Goa, Gujarat, Puducherry, Andaman and Nicobar Islands, and Lakshadweep.

Among these, Tamil Nadu, Kerala, West Bengal, and Puducherry will go to the polls in 2026.

The first round of the clean-up exercise was carried out in Bihar earlier this year, during which more than 68 lakh names were deleted from the electoral rolls. The house-to-house enumeration process will take place from November 4 to December 4.

The EC will publish the draft rolls on December 9, after which claims and objections can be submitted from December 9 to January 8. Notices will be issued, and hearings and verifications will take place from December 9 to January 31. The final electoral rolls will be published on February 7.

In most of these States, the SIR exercise was last carried out between 2002 and 2004, and they have nearly completed the mapping of current electors according to it.

Changes to SIR 2.0
The poll body has implemented certain changes to the SIR 2.0, drawing upon insights gained from the experience in Bihar. Among the most significant changes is the directive that no documents should be collected from electors during the enumeration phase.

The poll body took this decision after it found in Bihar that a substantial number of voters could be traced to the electoral rolls prepared after the preceding SIR.

Secondly, prior to the announcement of the SIR, the poll body had begun the process of matching the current voters' lists with those from the years 2002 to 2004, during which the last SIR was conducted in these States. This procedure has been referred to as pre-mapping.

So most States are expected to have the lists of people whose names were already there in the voters' list, and they are thus not expected to submit any of the 11 indicative documents along with their enumeration forms.

Aadhaar has been added as the 12th document, as directed by the Supreme Court, but only as proof of identity and not of citizenship.

The EC has also amended the enumeration form, incorporating a column where a parent or a relative can provide a signature in the absence of the voter. This signature will be counter-signed by the booth-level officer (BLO).

For electors whose enumeration forms have not been returned, the BLO may ascertain a probable cause, including death and duplication, through inquiries conducted with neighbouring electors and document these findings.

Since the draft electoral rolls will only include the names of those who have submitted the enumeration forms, booth-wise lists of electors whose names have not been included in the draft rolls will be displayed on the notice board of the respective Panchayat Bhavan or the urban local body office and at the offices of the block development officers.

This will enable the general public to access the aforementioned voters' lists, along with the probable reasons for the non-inclusion of their names.

Gearing up: Booth-level officers undergoing training in Kolkata for the special intensive revision of electoral rolls. PTI

Revision of poll rolls begins in 12 States and U.T.s today
12 राज्यों और केंद्र शासित प्रदेशों में आज से मतदाता सूची संशोधन शुरू

- The **Election Commission** will begin the **enumeration phase** of the **special intensive revision (SIR)** of electoral rolls in **12 States and Union Territories** on Tuesday.
  निर्वाचन आयोग मंगलवार को **12 राज्यों और केंद्र शासित प्रदेशों में** मतदाता सूची के **विशेष गहन पुनरीक्षण (SIR)** के **गणना चरण** की शुरुआत करेगा।

- The **SIR exercise** will cover close to **51 crore voters** in **Tamil Nadu, West Bengal, Kerala, Uttar Pradesh, Madhya Pradesh, Rajasthan, Chhattisgarh, Goa, Gujarat, Puducherry, Andaman and Nicobar Islands, and Lakshadweep.**
  यह **SIR अभ्यास** लगभग **51 करोड़ मतदाताओं** को कवर करेगा, जिनमें **तमिलनाडु, पश्चिम बंगाल, केरल, उत्तर प्रदेश, मध्य प्रदेश, राजस्थान, छत्तीसगढ़, गोवा, गुजरात, पुडुचेरी, अंडमान और निकोबार द्वीप समूह और लक्षद्वीप** शामिल हैं।

- Among these, **Tamil Nadu, Kerala, West Bengal, and Puducherry** will go to the **polls in 2026.**
  इनमें से **तमिलनाडु, केरल, पश्चिम बंगाल और पुडुचेरी** में **2026 में चुनाव** होंगे।

- The **first round** of the **clean-up exercise** was carried out in **Bihar earlier this year**, during which more than **68 lakh names** were **deleted** from the electoral rolls.
  इस वर्ष की शुरुआत में **बिहार में सफाई अभियान का पहला चरण** आयोजित किया गया था, जिसमें **68 लाख से अधिक नाम** मतदाता सूची से **हटाए गए।**

- The **house-to-house enumeration process** will take place from **November 4 to December 4.**
  घर-घर गणना की प्रक्रिया **4 नवंबर से 4 दिसंबर** तक चलेगी।

- The **EC** will publish the **draft rolls on December 9**, after which **claims and objections** can be submitted from **December 9 to January 8.**
  निर्वाचन आयोग 9 दिसंबर को प्रारूप सूची प्रकाशित करेगा, जिसके बाद **दावे और आपत्तियाँ 9 दिसंबर से 8 जनवरी** तक प्रस्तुत की जा सकेंगी।

- **Notices** will be issued, and **hearings and verifications** will take place from **December 9 to January 31.**
  सूचनाएँ जारी की जाएंगी और **सुनवाई व सत्यापन 9 दिसंबर से 31 जनवरी** तक होंगे।
- The **final electoral rolls** will be **published on February 7.**
  अंतिम मतदाता सूची 7 फरवरी को प्रकाशित की जाएगी।
- In most of these States, the **SIR exercise** was last carried out between **2002 and 2004**, and they have nearly completed the **mapping of current electors** according to it.
  इन अधिकांश राज्यों में, **SIR अभ्यास** अंतिम बार **2002 से 2004** के बीच किया गया था, और उन्होंने उसके अनुसार **वर्तमान मतदाताओं का मानचित्रण** लगभग पूरा कर लिया है।

Changes to SIR 2.0
SIR 2.0 में बदलाव

- The **poll body** has implemented certain **changes to the SIR 2.0**, drawing upon **insights gained from Bihar's experience.**
  निर्वाचन आयोग ने **बिहार के अनुभव** से मिली **जानकारियों** के आधार पर **SIR 2.0 में कुछ बदलाव** किए हैं।
- Among the most **significant changes** is the directive that **no documents should be collected from electors during the enumeration phase.**
  सबसे **महत्वपूर्ण बदलावों** में से एक यह निर्देश है कि **गणना चरण के दौरान मतदाताओं से कोई दस्तावेज एकत्र नहीं किए जाएंगे।**
- The **poll body** took this decision after it found in **Bihar** that a **substantial number of voters** could be traced to the **electoral rolls prepared after the preceding SIR.**
  निर्वाचन आयोग ने यह निर्णय तब लिया जब **बिहार में** यह पाया गया कि **काफी संख्या में** मतदाताओं को **पूर्व SIR के बाद तैयार मतदाता सूची** से ट्रैक किया जा सकता है।
- Secondly, prior to the **announcement of the SIR**, the poll body had begun the process of **matching the current voters' lists** with those from the years **2002 to 2004**, during which the last SIR was conducted in these States.
  दूसरा, **SIR की घोषणा से पहले**, निर्वाचन आयोग ने **वर्तमान मतदाता सूचियों** को **2002 से 2004** के बीच की सूचियों से **मिलान करने की प्रक्रिया** शुरू की थी, जब इन राज्यों में पिछला SIR हुआ था।
- This procedure has been referred to as **pre-mapping.**
  इस प्रक्रिया को **प्री-मैपिंग (Pre-mapping)** कहा गया है।
- So most States are expected to have the **lists of people whose names were already there** in the voters' list, and they are thus **not expected to submit any of the 11 indicative documents** along with their enumeration forms.
  इसलिए अधिकांश राज्यों के पास उन **लोगों की सूची** होने की उम्मीद है **जिनके नाम पहले से मतदाता सूची में मौजूद हैं**, और इसलिए उनसे यह **उम्मीद नहीं की जाएगी** कि वे 11 सुझाए गए दस्तावेजों में से कोई जमा करें।
- **Aadhaar** has been added as the **12th document**, as directed by the **Supreme Court**, but **only as proof of identity** and **not of citizenship.**
  आधार कार्ड को **बारहवें दस्तावेज** के रूप में जोड़ा गया है, जैसा कि **सुप्रीम कोर्ट के निर्देशानुसार**, लेकिन **यह केवल पहचान का प्रमाण होगा, नागरिकता का नहीं।**
- The **EC** has also **amended the enumeration form**, incorporating a **column where a parent or relative** can provide a **signature in the absence of the voter.**
  निर्वाचन आयोग ने गणना फॉर्म में संशोधन किया है, जिसमें एक **कॉलम जोड़ा गया है**, जहाँ मतदाता की अनुपस्थिति में माता-पिता या रिश्तेदार हस्ताक्षर कर सकते हैं।
- This signature will be **counter-signed by the booth-level officer (BLO).**
  इस हस्ताक्षर को **बूथ-लेवल अधिकारी (BLO)** द्वारा **काउंटर-साइन** किया जाएगा।
- For electors whose **enumeration forms have not been returned**, the BLO may ascertain a **probable cause**, including **death or duplication**, through **inquiries with neighbouring electors** and document these findings.
  जिन मतदाताओं के **गणना फॉर्म वापस नहीं आए हैं**, उनके लिए **BLO संभावित कारणों** (जैसे **मृत्यु या दोहराव**) की जांच **पड़ोसी मतदाताओं से पूछताछ करके** करेगा और इन निष्कर्षों को दर्ज करेगा।

- Since the **draft electoral rolls** will only include the **names of those who have submitted the enumeration forms**, **booth-wise lists** of electors whose names have **not been included** will be **displayed** on the **notice boards** of the respective **Panchayat Bhavan**, **urban local body office**, and at the **block development officer's offices.**

  क्योंकि **प्रारूप मतदाता सूची** में केवल उन्हीं के **नाम शामिल होंगे** जिन्होंने गणना फॉर्म जमा किए हैं, इसलिए **जिनके नाम शामिल नहीं हुए हैं**, उनकी **बूथ-वार सूची** संबंधित **पंचायत भवन, नगर निकाय कार्यालय** और **खंड विकास अधिकारी कार्यालयों** के **सूचना पटों** पर प्रदर्शित की जाएगी।

- This will enable the **general public** to access the **voters' lists**, along with the **probable reasons for non-inclusion of their names.**

  इससे **सामान्य जनता** को **मतदाता सूचियों तक पहुंचने** में सुविधा होगी, साथ ही यह भी पता चलेगा कि **उनके नाम शामिल न होने के संभावित कारण** क्या हैं।

India, Bahrain hold talks on boosting defence, trade ties

`GS II: India-Bahrain`

Kallol Bhattacherjee
NEW DELHI

India on Monday reiterated that the Gaza peace plan of U.S. President Donald Trump will lead to a "lasting" solution to the West Asian conflict.

Welcoming Bahrain's Foreign Minister Abdullatif bin Rashid Alzayani, External Affairs Minister S. Jaishankar said there are "unprecedented" changes in the West Asian region as well as in the world.

"So I take the opportunity to reiterate our support for the Gaza Peace Plan which we hope will lead to a lasting and durable solution," said Mr. Jaishankar in his opening remarks.

A joint statement issued after the meeting of the High Joint Commission headed by Mr. Jaishankar and Mr. Alzayani said that India and Bahrain expressed optimism for "enhancing future collaboration in the areas of defence and security". The joint statement also mentioned unequivocal condemnation of "terrorism, in all its forms and manifestations and reaffirmed strong commitment to combat terrorism, including cross border terrorism."

The two sides highlighted that India is among the top five trading partners of the Kingdom of Bahrain.

Both sides agreed to develop a common understanding to commence Double Taxation Avoidance Agreement (DTAA) negotiations, which will help eliminate double taxation, provide tax certainty and promote trade and investment.

संयुक्त बयान में कहा गया कि **भारत और बहरीन** ने रक्षा और सुरक्षा क्षेत्रों में भविष्य के सहयोग **को बढ़ाने** के लिए आशा व्यक्त की।

- The **joint statement** also mentioned **unequivocal condemnation of terrorism, in all its forms and manifestations**, and **reaffirmed strong commitment** to **combat terrorism**, including **cross-border terrorism.**
  संयुक्त बयान में हर रूप और अभिव्यक्ति में आतंकवाद की स्पष्ट निंदा की गई और **सीमा-पार आतंकवाद** सहित **आतंकवाद से लड़ने** के प्रति दृढ़ प्रतिबद्धता दोहराई गई।

- The two sides highlighted that **India is among the top five trading partners** of the **Kingdom of Bahrain.**
  दोनों पक्षों ने इस बात पर जोर दिया कि **भारत बहरीन साम्राज्य के शीर्ष पांच व्यापारिक साझेदारों में से एक** है।

- Both sides agreed to develop a **common understanding** to commence **Double Taxation Avoidance Agreement (DTAA)** negotiations, which will help **eliminate double taxation, provide tax certainty,** and **promote trade and investment.**
  दोनों पक्षों ने **दोहरा कराधान परिहार समझौते (DTAA)** की वार्ता शुरू करने के लिए **साझा समझ विकसित करने** पर सहमति जताई, जिससे **दोहरा कराधान समाप्त करने, कर स्पष्टता सुनिश्चित करने,** और **व्यापार व निवेश को प्रोत्साहित करने** में मदद मिलेगी।

Delhi HC upholds FSSAI ban on 'ORS' tagged drinks

GS II: Governance
The Hindu Bureau
NEW DELHI

The Delhi High Court has rejected a plea challenging the Food Safety and Standards Authority of India's (FSSAI) decision to ban the use of the word 'ORS' (Oral Rehydration Solution) in the naming of any fruit-based, non-carbonated, or ready-to-drink beverages.

Justice Sachin Datta passed the order on October 31, dismissing a petition by Dr. Reddy's Laboratories Ltd., which had challenged the FSSAI's directive restricting the use of the label 'ORS' for its brand Rebalanz VITORS.

On October 14, the FSSAI withdrew all prior permissions for using the term 'ORS' in product names or branding unless they met the medical standards.

Delhi HC upholds FSSAI ban on 'ORS' tagged drinks
दिल्ली उच्च न्यायालय ने 'ORS' लिखे पेयों पर FSSAI के प्रतिबंध को बरकरार रखा

- The **Delhi High Court** has **rejected a plea** challenging the **Food Safety and Standards Authority of India's (FSSAI)** decision to **ban the use of the word 'ORS' (Oral Rehydration Solution)** in the naming of any **fruit-based, non-carbonated, or ready-to-drink beverages.**
  दिल्ली उच्च न्यायालय ने **भारतीय खाद्य सुरक्षा एवं मानक प्राधिकरण (FSSAI)** के उस निर्णय को चुनौती देने वाली **याचिका को खारिज कर दिया**, जिसमें 'ORS' (ओरल रिहाइड्रेशन सॉल्यूशन) शब्द के प्रयोग को किसी भी **फलों पर आधारित, गैर-कार्बोनेटेड या रेडी-टू-ड्रिंक पेयों** के नाम में **प्रतिबंधित किया गया था।**

- **Justice Sachin Datta** passed the order on **October 31**, dismissing a **petition by Dr. Reddy's Laboratories Ltd.**, which had challenged the **FSSAI's directive** restricting the use of the label **'ORS'** for its brand **Rebalanz VITORS.**
  न्यायमूर्ति सचिन दत्ता ने **31 अक्टूबर** को आदेश पारित करते हुए **डॉ. रेड्डीज़ लेबोरेट्रीज़ लिमिटेड** की **याचिका खारिज की**, जिसमें कंपनी ने अपने **ब्रांड रिबालैंज VITORS** के लिए 'ORS' लेबल के प्रयोग पर FSSAI के प्रतिबंधात्मक निर्देश को चुनौती दी थी।

- On **October 14**, the **FSSAI withdrew all prior permissions** for using the term **'ORS'** in product names or branding **unless they met the medical standards.**
  14 अक्टूबर को **FSSAI** ने **सभी पूर्व अनुमतियाँ वापस ले लीं**, जिनके तहत उत्पाद नामों या ब्रांडिंग में 'ORS' शब्द का प्रयोग किया जा रहा था, **जब तक वे चिकित्सा मानकों को पूरा नहीं करते।**

What are the challenges with the High Seas Treaty?

What does the principle of 'common heritage of humankind' mean? Is the treaty ambiguous?

GS II: International treaties

The story so far:

The High Seas Treaty was ratified by over 60 countries in September; it will now be enforced in January 2026. The treaty sets rules to preserve and use marine biodiversity sustainably and addresses threats from climate change, overfishing and pollution.

What is the treaty about?

The Biodiversity Beyond National Jurisdiction (BBNJ) agreement, as the High Seas treaty is formally referred to, creates an all-inclusive framework to govern and manage common marine biodiversity. It identifies Marine Genetic Resources (MGRs) as the common heritage of humankind, insisting on a fair and equitable sharing of benefits. Besides, the Area-Based Management Tools (ABMTs) include Marine Protected Areas (MPAs) that can be recognised to protect biodiversity. This will help in improving climate resilience and provide food security, combining science and indigenous knowledge. The treaty also entails Environmental Impact Assessments (EIAs) for events potentially affecting these areas, especially when cumulative and transboundary impacts are taken into account. The first steps for the treaty began two decades ago. In 2004, the UN General Assembly formed an ad-hoc working group to fix the gap in the UN Convention on the Law of the Sea (UNCLOS), 1982, which did not have clear guidelines on protecting BBNJ. By 2011, states had agreed to negotiate on four key issues, mainly MGRs, ABMTs, EIAs, and capacity building and technology transfer. Following this, four Intergovernmental Conference sessions were held between 2018 and 2023. The parties to these discussions finally reached an agreement in March 2023, which led to the adoption of the treaty in June 2023.

What are the major issues?

First is the uncertainty over the principles of "common heritage of humankind" and "freedom of the high seas." The "common heritage principle" supports equitable access and benefit-sharing of marine resources for all, while the "freedom on the high seas" stresses on unrestricted rights of states to carry out navigation, resource usage and research activities. However, the common heritage principle is only applicable partially, especially when it comes to MGRs. This shows a compromise instead of a resolution. It also creates ambiguity in exploration, research and benefit sharing. Second, is the use of MGRs. The governance of MGRs was earlier not defined, raising concerns over "biopiracy" and unfair exploitation by developed countries. Developing nations were concerned that they would be excluded from the profits of scientific discoveries from the high seas. The treaty now includes a framework on sharing monetary and non-monetary benefits, but with no clear details on how such benefits will be calculated or shared. Third is the reluctance of big powers to get engaged. The treaty is under threat due to non-participation from the U.S., China, and Russia, who are yet to ratify the treaty. Fourth, is interaction with multilateral institutions. The treaty must coexist and not ignore existing international institutions, such as the International Seabed Authority (ISA) and Regional Fisheries Management Organisations (RFMOs). The BBNJ agreement must also blend with existing international treaties to prevent legal conflicts and lead to more fragmentation of ocean governance.

What next?

The treaty provides more clarity to the UNCLOS provisions, focusing on science-based requirements for EIAs, ABMTs and benefit sharing. However, the ambiguous language in the MGRs and the common heritage of humankind principle challenge the execution of the treaty. There is a need for dynamic management of MPAs, and regular monitoring. To deliver the BBNJ, linking climate-biodiversity with the ocean will be crucial for resilient management.

Padmashree Anandhan is a project associate at NIAS, Bangalore.

THE GIST

▼
The Biodiversity Beyond National Jurisdiction (BBNJ) agreement, as the High Seas treaty is formally referred to, creates an all-inclusive framework to govern and manage common marine biodiversity.

▼
The "common heritage principle" supports equitable access and benefit-sharing of marine resources for all.

▼
Developing nations were concerned that they would be excluded from the profits of scientific discoveries from the high seas.

What are the challenges with the High Seas Treaty?
हाई सीज़ संधि से जुड़ी चुनौतियाँ क्या हैं?

High Seas Treaty
उच्च समुद्री संधि

- The **High Seas Treaty** was **ratified by over 60 countries in September**; it will now be **enforced in January 2026**.
  उच्च समुद्री संधि (High Seas Treaty) को **सितंबर में 60 से अधिक देशों ने अनुमोदित किया**; अब यह **जनवरी 2026** से लागू की जाएगी।

- The treaty sets rules to **preserve and use marine biodiversity sustainably** and addresses threats from **climate change, overfishing, and pollution**.
  यह संधि **समुद्री जैव विविधता को संरक्षित और सतत रूप से उपयोग करने के नियम** निर्धारित करती है और **जलवायु परिवर्तन, अत्यधिक मछली पकड़ने, और प्रदूषण** से उत्पन्न खतरों को संबोधित करती है।

What is the treaty about?
यह संधि किस बारे में है?

- The **Biodiversity Beyond National Jurisdiction (BBNJ)** agreement, as the High Seas Treaty is formally called, creates an **inclusive framework to govern and manage common marine biodiversity**.
  जैव विविधता राष्ट्रीय अधिकार क्षेत्र से परे (BBNJ) समझौता, जिसे औपचारिक रूप से **उच्च समुद्री संधि** कहा जाता है, **सामान्य समुद्री जैव विविधता के शासन और प्रबंधन के लिए एक समावेशी ढांचा** बनाता है।

- It identifies **Marine Genetic Resources (MGRs)** as the **common heritage of humankind**, insisting on **fair and equitable sharing of benefits**.
  यह **समुद्री आनुवंशिक संसाधनों (MGRs)** को **मानवता की सामान्य विरासत** के रूप में पहचानता है और **लाभों के न्यायसंगत और समान वितरण** पर बल देता है।

- The **Area-Based Management Tools (ABMTs)** include **Marine Protected Areas (MPAs)** to protect biodiversity, improve **climate resilience**, and provide **food security**, combining **science and indigenous knowledge**.
  क्षेत्र-आधारित प्रबंधन उपकरण (ABMTs) में **समुद्री संरक्षित क्षेत्र (MPAs)** शामिल हैं जो **जैव विविधता की रक्षा**, **जलवायु अनुकूलता** में सुधार और **खाद्य सुरक्षा** सुनिश्चित करते हैं, जिसमें **विज्ञान और पारंपरिक ज्ञान** का संयोजन किया गया है।

- The treaty also includes **Environmental Impact Assessments (EIAs)** for activities affecting these areas, especially **cumulative and transboundary impacts**.
  यह संधि इन क्षेत्रों को प्रभावित करने वाली गतिविधियों के लिए **पर्यावरणीय प्रभाव आकलन (EIAs)** को भी शामिल करती है, विशेष रूप से **संचयी और अंतर-सीमाई प्रभावों** को ध्यान में रखते हुए।

- The first steps for the treaty began **two decades ago**. In **2004**, the **UN General Assembly** formed an **ad-hoc working group** to address gaps in the **UN Convention on the Law of the Sea (UNCLOS), 1982**.
  इस संधि की प्रारंभिक प्रक्रिया **दो दशक पहले** शुरू हुई थी। **2004** में **संयुक्त राष्ट्र महासभा (UNGA)** ने **समुद्र के कानून पर संयुक्त राष्ट्र सम्मेलन (UNCLOS), 1982** में खामियों को दूर करने के लिए एक **एड-हॉक कार्य समूह** का गठन किया।

- By **2011**, member states agreed to negotiate on **four key issues — MGRs, ABMTs, EIAs,** and **capacity building and technology transfer**.
  2011 तक, सदस्य देशों ने **चार प्रमुख मुद्दों — MGRs, ABMTs, EIAs,** और **क्षमता निर्माण व प्रौद्योगिकी हस्तांतरण** पर बातचीत करने पर सहमति दी।

- Four **Intergovernmental Conference sessions** were held between **2018 and 2023**, culminating in an agreement in **March 2023**, and the **treaty was adopted in June 2023**.
  2018 से 2023 के बीच **चार अंतर-सरकारी सम्मेलन सत्र** आयोजित किए गए, जिनका परिणाम **मार्च 2023** में एक समझौते के रूप में हुआ और **जून 2023** में संधि को अपनाया गया।

What are the major issues?
मुख्य मुद्दे क्या हैं?

- First is the **uncertainty** between the principles of **"common heritage of humankind"** and **"freedom of the high seas."**
  पहला मुद्दा **"मानवता की सामान्य विरासत"** और **"उच्च समुद्रों की स्वतंत्रता"** के सिद्धांतों के बीच की **अनिश्चितता** है।

- The **common heritage principle** supports **equitable access and benefit-sharing**, while **freedom of the high seas** emphasizes **unrestricted navigation and resource use**.
  सामान्य विरासत का सिद्धांत न्यायसंगत पहुंच और लाभ-साझाकरण का समर्थन करता है, जबकि **उच्च समुद्रों की स्वतंत्रता** अप्रतिबंधित नौवहन और संसाधन उपयोग पर बल देती है।

- The **common heritage principle** applies only **partially** to **MGRs**, creating **ambiguity in exploration, research, and benefit sharing**.
  सामान्य विरासत का सिद्धांत केवल **आंशिक रूप से MGRs** पर लागू होता है, जिससे **अन्वेषण, अनुसंधान, और लाभ-साझाकरण** में अस्पष्टता उत्पन्न होती है।

- Second, the **use and governance of MGRs** was previously undefined, leading to concerns over **biopiracy** and **unfair exploitation** by developed countries.
  दूसरा, **MGRs के उपयोग और शासन** पहले स्पष्ट नहीं थे, जिससे **जैविक चोरी (biopiracy)** और **विकसित देशों द्वारा अनुचित दोहन** की चिंताएँ उत्पन्न हुईं।

- Developing nations feared exclusion from **profits of scientific discoveries** from the high seas.
  विकासशील देशों को यह डर था कि वे **उच्च समुद्रों से प्राप्त वैज्ञानिक खोजों के लाभों से वंचित** रह जाएंगे।

- The treaty now provides a **framework for sharing monetary and non-monetary benefits**, though **details on calculation and distribution** remain unclear.
  अब संधि में **मौद्रिक और गैर-मौद्रिक लाभों के वितरण के लिए एक ढांचा** शामिल है, लेकिन **इन लाभों की गणना और वितरण के विवरण** अभी भी अस्पष्ट हैं।

- Third, **major powers like the U.S., China, and Russia** have **not ratified** the treaty, posing a threat to its implementation.
  तीसरा, **अमेरिका, चीन और रूस जैसे प्रमुख देशों** ने इस संधि को **अभी तक अनुमोदित नहीं किया**, जिससे इसके कार्यान्वयन पर खतरा बना हुआ है।

- Fourth, the treaty must **coordinate with existing international bodies** like the **International Seabed Authority (ISA)** and **Regional Fisheries Management Organisations (RFMOs)** to avoid legal conflicts.
  चौथा, संधि को **अंतरराष्ट्रीय समुद्री प्राधिकरण (ISA)** और **क्षेत्रीय मत्स्य प्रबंधन संगठनों (RFMOs)** जैसे मौजूदा अंतरराष्ट्रीय निकायों के साथ **समन्वय स्थापित करना चाहिए**, ताकि **कानूनी टकरावों से बचा जा सके।**

What next?
अब आगे क्या?

- The treaty provides **greater clarity to UNCLOS provisions**, emphasizing **science-based EIAs, ABMTs, and benefit sharing**.
  यह संधि **UNCLOS के प्रावधानों में अधिक स्पष्टता** लाती है और **विज्ञान-आधारित EIA, ABMT, और लाभ-साझाकरण** पर बल देती है।
- However, **ambiguous language** on **MGRs** and the **common heritage principle** makes **execution challenging**.
  हालांकि, **MGRs** और **सामान्य विरासत सिद्धांत** पर **अस्पष्ट भाषा** इस संधि के **कार्यान्वयन को चुनौतीपूर्ण** बनाती है।
- There is a need for **dynamic management of MPAs** and **regular monitoring**.
  MPAs के गतिशील प्रबंधन और **नियमित निगरानी** की आवश्यकता है।
- To achieve the **BBNJ goals**, linking **climate-biodiversity with ocean governance** will be crucial for **resilient and sustainable management**.
  BBNJ के लक्ष्यों को प्राप्त करने के लिए **जलवायु-जैव विविधता को महासागर शासन से जोड़ना** अत्यंत आवश्यक होगा, जिससे **लचीला और सतत प्रबंधन** सुनिश्चित किया जा सके।

Questions and Answers to the previous day's daily quiz: 1. The number of member economies in APEC. **Ans: 21**
2. This country proposed the grouping and hosted the first meeting of ministers of the group in 1989. **Ans: Australia**
3. This country hosted the first meeting of APEC leaders in 1993. **Ans: The U.S.**
4. This country is set to host the APEC in 2026. **Ans: China**
5. Name the city and the country from which the grouping's aim for an "open, dynamic, resilient, and peaceful Asia Pacific" derives its name from. **Ans: Putrajaya, Malaysia**
Visual: Name the Latin American country which hosted the summit in 2024. **Ans: Peru**
Early Birds: Siddhartha Viswanathan| Sunil Madhavan| Sudhir Thapa| Rownak Mondal| Diya Goyal

QUIZ

Asia-Pacific Economic Cooperation (APEC)

- APEC is **a regional economic forum** of economies around the Pacific Rim, established to promote **trade, investment, and economic cooperation**.
- The term used is **"member economies"** rather than "member countries" because participation is as **economic entities** and not necessarily only sovereign states.
- **Number of member economies: 21.**
- APEC's **member economies** for 2025 include: **Australia, Brunei Darussalam, Canada, Chile, People's Republic of China, Hong Kong (China), Indonesia, Japan, Republic of Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Peru, The Philippines, The Russian Federation, Singapore, Chinese Taipei, Thailand, United States of America, and Viet Nam.**
- APEC operates on the basis of **non-binding commitments**, **open dialogue**, and **consensus decision-making** rather than binding treaties.

Historical Background

- The idea for APEC emerged in the **late 1980s**, in response to growing economic interdependence among Asia-Pacific nations.
- The first **ministerial-level meeting** took place in **1989**, with **12 founding member economies**.
- Over time, new economies joined, bringing the total to **21**. Notable additions included **Chile (1994)**, and **Russia, Peru, and Vietnam (1998)**.
- In **2020**, APEC leaders adopted the **"Putrajaya Vision 2040"**, outlining long-term goals toward an **open, dynamic, resilient, and peaceful Asia-Pacific community by 2040**

Important Concepts and Core Objectives

Three Key Pillars (Osaka 1995 Framework)
 • **Trade and Investment Liberalisation** – Reducing tariffs and non-tariff barriers to encourage open trade and investment across the region.
 • **Business Facilitation** – Improving regulatory coherence, customs procedures, and the ease of doing business among member economies.
 • **Economic and Technical Cooperation (ECOTECH)** – Building capacity, sharing best practices, and helping less-developed members strengthen their economies.

Additional Key Facts
 • APEC economies together account for around **61 % of global GDP** and **47 % of world trade**.
 • The organisation's reach extends across multiple continents — **Asia, Oceania, North America, and South America** — linking nations around the **Pacific Ocean Rim**.

Australia's Role in the Establishment of APEC (1989)

• **Australia** played a **pioneering role** in the formation of the **Asia-Pacific Economic Cooperation (APEC)**.
 • It was **Australia** that **proposed the creation of the APEC grouping** to strengthen regional economic cooperation across the Pacific Rim.
 • The **first APEC ministerial-level meeting** was **hosted by Australia** in **November 1989** in **Canberra**, the nation's capital.
 • The proposal was led by the then **Australian Prime Minister, Bob Hawke**, who recognised the growing economic interdependence in the Asia-Pacific region and the need for a cooperative mechanism.

Historical Background

Emergence of the Idea (1980s)
 • During the **1980s**, the Asia-Pacific region was becoming the fastest-growing economic zone in the world, but lacked a regional organisation for economic dialogue.
 • Australian policymakers observed that while Europe had the **European Economic Community (EEC)** and North America had emerging trade blocs, the Pacific region lacked institutional cooperation.
 • This concern led **Prime Minister Bob Hawke** to propose an intergovernmental forum for **trade and economic collaboration** among the economies bordering the Pacific Ocean.

The First APEC Meeting (1989)
 • The **inaugural APEC Ministerial Meeting** was held in **Canberra, Australia**, in **November 1989**.
 • It brought together **12 founding member economies**: Australia, Brunei Darussalam, Canada, Indonesia, Japan, Republic of Korea, Malaysia, New Zealand, the Philippines, Singapore, Thailand, and the United States.
 • The main agenda of this first meeting was to establish a mechanism to enhance **regional economic growth, open trade, and investment liberalisation**.
 • The outcome was the **creation of APEC as a consultative, non-binding forum** aimed at promoting **open dialogue and voluntary cooperation**.

Key Contributions of Australia

• **Initiation of the Idea** – Australia recognised the potential of the Asia-Pacific region to become the world's economic centre and took the lead in institutionalising cooperation.
 • **Leadership by Bob Hawke** – His **1989 Seoul speech** (before the Korea Society) formally introduced the concept of a regional economic forum, which soon evolved into APEC.
 • **Hosting the First Meeting** – By hosting the **Canberra Ministerial Meeting in November 1989**, Australia translated the proposal into action.
 • **Support for Regionalism** – Australia emphasised **inclusive regionalism**, ensuring that both developed and developing economies could participate on equal terms.
 • **Policy Focus** – From the beginning, Australia promoted **open regionalism**, meaning APEC's

efforts to liberalise trade would complement, not replace, global liberalisation efforts under the **GATT/WTO** system.

Importance of Australia's Role

• **Catalyst for Cooperation** – Australia's diplomatic initiative bridged Asian and Western Pacific economies, laying the groundwork for one of the world's largest economic forums.
• **Balancing Interests** – Australia helped balance interests between industrialised and developing economies, setting the tone for APEC's **non-binding, consensus-based** decision-making structure.
• **Strategic Vision** – The proposal reflected Australia's vision of a **peaceful, cooperative, and economically integrated Pacific community**, anticipating the rise of Asia as a global growth hub.

The United States and the First APEC Leaders' Meeting (1993)

• The **United States** played a **historic role** in elevating the **Asia-Pacific Economic Cooperation (APEC)** from a ministerial-level forum to a **leaders' summit** in **1993**.
• The **first APEC Leaders' Meeting** was hosted by the **United States** on **20 November 1993** in **Blake Island**, near **Seattle, Washington**.
• This meeting marked the **beginning of annual APEC Economic Leaders' Meetings**, where heads of state or government from member economies meet to discuss key regional and global economic issues.

Historical Background

Transition from Ministerial to Leaders' Level (1989–1993)
• When APEC was established in **1989**, it initially functioned as a forum for **ministers and officials** to discuss regional economic cooperation.
• By the early 1990s, global economic integration and the formation of regional trade blocs (like the European Union and NAFTA) created the need for **stronger political leadership** within APEC.
• Recognising this, **U.S. President Bill Clinton** proposed upgrading APEC's dialogue to the **leaders' level** to enhance strategic and economic coordination across the Pacific.
• This move was widely supported by APEC member economies, transforming the group from a technical consultative forum into a **major platform for economic diplomacy**.

The 1993 Blake Island Meeting: Key Facts

• **Date:** 20 November 1993
• **Host Country:** United States of America
• **Venue:** Blake Island, near Seattle, Washington
• **Host Leader:** U.S. President **Bill Clinton**
• **Participants:** Leaders from all **18 APEC member economies** at that time (the membership later expanded to 21).
• **Theme:** "Creating the Asia-Pacific Community of the 21st Century."
• The meeting took place in an informal setting to promote open discussion and consensus-building — a defining characteristic of APEC's approach to decision-making.

Objectives and Outcomes of the First Leaders' Meeting

• **Institutionalisation of Leaders' Dialogue:** Established the practice of **annual APEC Leaders' Meetings**, ensuring direct engagement among heads of government.
• **Vision of a Pacific Community:** The leaders endorsed the idea of building an **open, dynamic, and cooperative Asia-Pacific community**.
• **Focus on Free Trade and Economic Growth:** The meeting strengthened APEC's commitment to **open trade, investment liberalisation, and sustainable development**.
• **Enhanced U.S. Role in Asia-Pacific Affairs:** By hosting the first summit, the U.S. reaffirmed its **strategic and economic engagement in the Asia-Pacific region** after the Cold War.

Significance of the United States' Role

• The **U.S. initiative** to elevate APEC to the **leaders' level** was crucial for giving the forum **political visibility and global relevance**.
 • It helped integrate **North American economies** more closely with those in **East and Southeast Asia**, balancing global trade dynamics.
 • The **informal format** set by the U.S. — leaders seated in equal circles without rigid protocol — became an enduring symbol of **APEC's spirit of equality and consensus**.
 • The 1993 summit also marked the first major **Asia-Pacific regional initiative led by the U.S.** after the end of the Cold War, reflecting its shift toward economic diplomacy.

People's Republic of China (Host of APEC 2026)

• China has been **selected to host** the **Asia-Pacific Economic Cooperation (APEC) Economic Leaders' Meeting in 2026**.
 • This will mark the **third time** China hosts the APEC Leaders' Summit — the previous occasions were in **2001** and **2014**.
 • The official announcement was made by **President Xi Jinping** during the **31st APEC Economic Leaders' Meeting held in Lima, Peru, in November 2024**.
 • This decision was endorsed by all APEC member economies, reaffirming China's role as a leading voice in regional economic cooperation.

Historical Background & Key Facts

China's Previous Hosting of APEC:
 • **2001 (Shanghai)** – This was China's first time hosting the APEC Summit. It marked a significant moment in China's engagement with global trade and multilateral diplomacy, coinciding with its preparations to join the **World Trade Organization (WTO)** in December 2001.
 • **2014 (Beijing)** – The summit highlighted China's growing global economic stature. The main themes included the promotion of the **"Beijing Roadmap for APEC's Contribution to the Realization of the Free Trade Area of the Asia-Pacific (FTAAP)"** and strengthening regional connectivity through infrastructure development.
 • **2026 (China)** – The upcoming summit continues this trajectory, emphasizing China's role in advancing economic cooperation, digital trade, and green development within the Asia-Pacific region.

Announcement of 2026 Hosting

• The announcement came on **16 November 2024** during the APEC Leaders' Meeting in Lima, Peru.
 • **President Xi Jinping** formally declared that China would host the next APEC summit after the Philippines (2025).
 • China's Ministry of Foreign Affairs later confirmed that preparations for the 2026 summit had begun, with discussions on possible host cities — **Beijing, Shanghai, and Shenzhen** among the frontrunners.
 • Other APEC economies expressed strong support for China's hosting, recognizing its track record in promoting multilateral dialogue and inclusive growth.

Significance and Strategic Implication

• Hosting APEC 2026 places China at the center of **Asia-Pacific economic diplomacy** and underlines its commitment to **open trade and regional integration**.
 • The event is expected to focus on three major themes:

- **Digital and Green Transition:** Promoting sustainability and technology-driven economic growth.

- **Supply Chain Resilience:** Ensuring regional production networks remain stable and diverse.
- **Inclusive Growth:** Supporting developing economies within the APEC framework to narrow income and innovation gaps.
    • This hosting also allows China to strengthen its soft power and highlight its model of cooperative globalization amid ongoing global economic uncertainties.

Putrajaya, Malaysia
Basic Information

• The phrase **"an open, dynamic, resilient, and peaceful Asia-Pacific"** originates from the **Putrajaya Vision 2040**, which was adopted by APEC (Asia-Pacific Economic Cooperation) leaders in **Putrajaya, Malaysia**.
 • **Putrajaya** is Malaysia's **federal administrative capital**, designed as a planned city located about 25 km south of Kuala Lumpur.
 • The vision reflects APEC's long-term goal to enhance economic cooperation, sustainability, and inclusivity in the Asia-Pacific region by the year **2040**.
 • The document takes its name from **Putrajaya**, where the **2020 APEC Economic Leaders' Meeting** was hosted by **Malaysia** (virtually due to the COVID-19 pandemic).

Historical Background and Context

• The **Putrajaya Vision 2040** was officially adopted in **November 2020**, during Malaysia's chairmanship of APEC.
 • It succeeds the **Bogor Goals (1994–2020)**, which aimed to achieve free and open trade and investment across the Asia-Pacific.
 • The new vision was named after **Putrajaya**, symbolizing Malaysia's leadership and its commitment to regional economic cooperation.
 • The Vision 2040 outlines APEC's renewed focus on long-term prosperity, digital transformation, sustainability, and inclusive development.

Core Aim of the Putrajaya Vision 2040

• The Vision commits APEC members to **create an "open, dynamic, resilient, and peaceful Asia-Pacific community by 2040"** for the prosperity of all people and future generations.
 • This goal is structured around **three key economic drivers**:

1. **Trade and Investment:** Promoting free, fair, and open trade and investment.

2. **Innovation and Digitalisation:** Encouraging the adoption of emerging technologies and innovation for economic growth.

3. **Strong, Balanced, Secure, Sustainable, and Inclusive Growth:** Ensuring that economic development benefits all communities equitably

Significance of Putrajaya and Malaysia's Role

• Malaysia's hosting of the 2020 APEC meeting marked **its second time leading the forum**, the first being in **1998**.
 • The naming of the vision after **Putrajaya** highlights Malaysia's diplomatic and strategic contribution to shaping APEC's future agenda.
 • By linking its name to the long-term APEC framework, Malaysia reaffirmed its commitment to **multilateralism, inclusive growth, and regional stability**.
 • Putrajaya, as a symbol of modern planning and governance, was an appropriate representation of **APEC's forward-looking vision**.

India, New Zealand begin fourth round of FTA talks

GS II: FTA

India and New Zealand began the fourth round of negotiations towards a free trade agreement, with the Indian team visiting Auckland until November 7, the Ministry of Commerce and Industry announced on Monday. "Negotiations in this round are focusing on key areas, including trade in goods, trade in services, and rules of origin," the statement added. "Both sides are working constructively to build on the progress achieved in earlier rounds."

India, New Zealand begin fourth round of FTA talks

भारत और न्यूज़ीलैंड ने एफटीए वार्ताओं के चौथे दौर की शुरुआत की

o   **India and New Zealand** began the **fourth round of negotiations** towards a **free trade agreement (FTA)**, with the **Indian team visiting Auckland until November 7**, the **Ministry of Commerce and Industry** announced on Monday.

भारत और न्यूज़ीलैंड ने **मुक्त व्यापार समझौते (एफटीए)** की दिशा में **चौथे दौर की वार्ताओं की शुरुआत की**, जिसमें **भारतीय दल 7 नवंबर तक ऑकलैंड का दौरा करेगा**, यह बात **वाणिज्य और उद्योग मंत्रालय** ने सोमवार को घोषित की।

o   "**Negotiations in this round** are focusing on **key areas**, including **trade in goods, trade in services, and rules of origin**," the statement added.

बयान में कहा गया, "**इस दौर की वार्ताएँ मुख्य क्षेत्रों** पर केंद्रित हैं, जिनमें **वस्तुओं का व्यापार, सेवाओं का व्यापार और उत्पत्ति के नियम** शामिल हैं।"

o   "**Both sides are working constructively** to **build on the progress achieved in earlier rounds.**"

"**दोनों पक्ष रचनात्मक रूप से कार्य कर रहे हैं** ताकि **पिछले दौरों में हासिल प्रगति को आगे बढ़ाया जा सके।**"

India trims Russian oil import by 29% in September

GS II: India Russia

Sourashis Banerjee
CHENNAI

India's crude import patterns are undergoing a significant shift as the country diversifies away from Russian barrels under pressure from the U.S.

Petroleum crude imports from Russia dropped sharply by 28.9%, from $4,675 million in September 2024 to $3,322 million in September 2025.

This decline follows the additional 25% tariff imposed by the U.S. for purchasing Russian oil in August, which came into effect on August 27.

businessline's analysis of data from the Ministry of Commerce for September 2025 shows India's total crude imports fell by

Slippery wicket: Dip in Russian oil imports follows the additional 25% tariff imposed by the U.S. for purchasing Russian oil. REUTERS

6.66% in September 2025 compared with the same month last year, from $11,476 million in September 2024 to $10,712 million this year. Besides Russia, imports from Iraq slid 16%.

But India appears to be actively exploring imports from other countries to bridge the gap left by Russia. While purchases from Saudi Arabia, the UAE, the U.S., Angola and Colombia increased, it has added many other sources to its list.

Suppliers, who were not present in September 2024

Crude from Saudi Arabia, the UAE, the U.S., Angola and Colombia rose, in an attempt to diversify

but appeared on the crude oil import list in September 2025, include Nigeria, Turkiye, Libya and Egypt.

Changing market shares
The decline in imports has dragged Russia's dominance in India's oil imports down below one-third for the first time in almost two years. Russia's share in total crude oil imports slid by 9.72 percentage points, though it is the largest supplier from 40.74% share in September 2024 to 31.02 % share in September 2025.

While the UAE increased its share from 9.7% last year to 13.8%, the share of U.S. in India's crude imports increased to 6.3% from 5.3% a year ago.

The Gulf trio – Saudi Arabia, the UAE, and Kuwait – collectively increased share from 26.6% to 31.3%. The U.S. and African together account for over 10%, signalling a strategic broadening of supply lines. Canada's share fell from 1.39% to zero.

Costlier imports
India's crude oil imports are, however, becoming pricier. While Russian barrels were available at about $500 a tonne in September 2025, substitutes from the Middle East, Africa, and the U.S. are significantly

costlier with crude from the UAE at $543, Saudi Arabia $560, the U.S. $549, and Libya $602 per tonne.

Even with a smaller overall import volume, this upward shift in unit costs could pressure India's refinery margins, trade deficit, and retail fuel inflation.

Tightening pragmatism
With total imports contracting and cheaper sources shrinking, India's balancing act between economic pragmatism and strategic alignment appears to be tightening. The data underline a crucial trade-off: less dependence on sanctioned oil, but higher import costs and reduced pricing flexibility.

(The writer is with The Hindu businessline)

India trims Russian oil import by 29% in September
भारत ने सितंबर में रूसी तेल आयात में 29% की कटौती की

• **India's crude import patterns** are undergoing a **significant shift** as the country **diversifies away from Russian barrels** under **pressure from the U.S.**

भारत के कच्चे तेल आयात पैटर्न में **महत्वपूर्ण परिवर्तन** देखा जा रहा है क्योंकि देश **अमेरिकी दबाव में रूसी तेल से विविधीकरण** कर रहा है।

- **Petroleum crude imports from Russia** dropped sharply by **28.9%**, from **$4,675 million in September 2024** to **$3,322 million in September 2025.**

  रूस से पेट्रोलियम कच्चे तेल का आयात **28.9%** घटकर सितंबर 2024 में **$4,675 मिलियन** से घटकर सितंबर 2025 में **$3,322 मिलियन** हो गया।

- This **decline follows the additional 25% tariff imposed by the U.S.** for purchasing Russian oil in **August**, which came into effect on **August 27.**

  यह **गिरावट अगस्त में रूसी तेल की खरीद पर अमेरिका द्वारा लगाए गए 25% अतिरिक्त शुल्क** के बाद आई, जो **27 अगस्त से लागू हुआ।**

- **Businessline's analysis of data from the Ministry of Commerce for September 2025** shows India's total crude imports fell by **6.66%** in **September 2025** compared with the same month last year, from **$11,476 million in September 2024 to $10,712 million this year.**

  सितंबर 2025 के लिए वाणिज्य मंत्रालय के आंकड़ों के बिजनेसलाइन विश्लेषण से पता चलता है कि **भारत का कुल कच्चा तेल आयात सितंबर 2025 में 6.66% घटा**, जो सितंबर 2024 के **$11,476 मिलियन से घटकर इस वर्ष $10,712 मिलियन** रह गया।

- Besides Russia, **imports from Iraq slid 16%.**

  रूस के अलावा, **इराक से आयात में 16% की गिरावट** दर्ज की गई।

- But **India appears to be actively exploring imports from other countries** to **bridge the gap left by Russia.**

  लेकिन **भारत रूस द्वारा छोड़े गए अंतर को पाटने के लिए अन्य देशों से सक्रिय रूप से आयात** की संभावनाएँ तलाश रहा है।

- While **purchases from Saudi Arabia, the UAE, the U.S., Angola and Colombia increased**, it has **added many other sources to its list.**

  जबकि **सऊदी अरब, यूएई, अमेरिका, अंगोला और कोलंबिया से खरीद में वृद्धि** हुई है, भारत ने अपनी सूची में **कई नए स्रोत भी जोड़े हैं।**

- **Suppliers**, who were **not present in September 2024** but appeared on the **crude oil import list in September 2025**, include **Nigeria, Turkiye, Libya and Egypt.**

  आपूर्तिकर्ता, जो सितंबर 2024 में सूची में नहीं थे, लेकिन सितंबर 2025 की कच्चे तेल आयात सूची में शामिल हुए, उनमें **नाइजीरिया, तुर्किये, लीबिया और मिस्र** शामिल हैं।

Changing market shares
बदलते बाजार हिस्सेदारी

- The **decline in imports** has dragged **Russia's dominance in India's oil imports** down **below one-third** for the **first time in almost two years.**

  आयात में गिरावट के कारण भारत के तेल आयात में रूस का प्रभुत्व लगभग दो वर्षों में पहली बार एक-तिहाई से नीचे चला गया है।

- **Russia's share** in total crude oil imports **slid by 9.72 percentage points**, though it is still the **largest supplier**, from **40.74% share in September 2024** to **31.02% share in September 2025.**

  रूस का हिस्सा कुल कच्चे तेल आयात में **9.72 प्रतिशत अंक घटा**, हालांकि वह अब भी **सबसे बड़ा आपूर्तिकर्ता** है — सितंबर 2024 में **40.74%** से घटकर सितंबर 2025 में **31.02%** रह गया।

While the UAE increased its share from 9.7% last year to 13.8%...
जहां यूएई ने अपना हिस्सा पिछले वर्ष के 9.7% से बढ़ाकर 13.8% किया...

- While the **UAE increased its share from 9.7% last year to 13.8%**, the **share of the U.S.** in **India's crude imports** increased to **6.3% from 5.3% a year ago.**

  जहां **यूएई ने अपना हिस्सा पिछले वर्ष के 9.7% से बढ़ाकर 13.8% किया**, वहीं **अमेरिका का हिस्सा** भारत के कच्चे तेल आयात में एक वर्ष पहले के **5.3% से बढ़कर 6.3%** हो गया।

- The **Gulf trio — Saudi Arabia, the UAE, and Kuwait — collectively increased share from 26.6% to 31.3%.**
  गल्फ त्रयी — सऊदी अरब, यूएई और कुवैत — ने सामूहिक रूप से अपना हिस्सा 26.6% से बढ़ाकर 31.3% किया।
- The **U.S. and African** together **account for over 10%**, signalling a **strategic broadening of supply lines.**
  अमेरिका और अफ्रीका मिलकर **10% से अधिक हिस्सेदारी रखते हैं**, जो **आपूर्ति श्रृंखलाओं के रणनीतिक विस्तार** का संकेत देता है।
- **Canada's share** fell from **1.39% to zero.**
  कनाडा की हिस्सेदारी 1.39% से घटकर शून्य हो गई।

Costlier imports
महंगे आयात

- **India's crude oil imports** are, however, **becoming pricier.**
  हालांकि, **भारत का कच्चा तेल आयात** अब महंगा होता जा रहा है।
- While **Russian barrels** were available at about **$500 a tonne in September 2025**, substitutes from the **Middle East, Africa, and the U.S.** are **significantly costlier** with crude from the **UAE at $543**, **Saudi Arabia $560**, **the U.S. $549**, and **Libya $602 per tonne.**
  जहां **सितंबर 2025 में रूसी तेल $500 प्रति टन** में उपलब्ध था, वहीं **मध्य पूर्व, अफ्रीका और अमेरिका से आने वाले विकल्प काफी महंगे हैं — यूएई का तेल $543, सऊदी अरब का $560, अमेरिका का $549, और लीबिया का $602 प्रति टन** है।
- Even with a **smaller overall import volume**, this **upward shift in unit costs** could pressure **India's refinery margins, trade deficit, and retail fuel inflation.**
  भले ही **कुल आयात मात्रा कम हो**, लेकिन **प्रति इकाई लागत में वृद्धि भारत की रिफाइनरी मार्जिन, व्यापार घाटे और खुदरा ईंधन मुद्रास्फीति** पर दबाव डाल सकती है।

Tightening pragmatism
कठोर होती व्यावहारिकता

- With **total imports contracting** and **cheaper sources shrinking, India's balancing act** between **economic pragmatism and strategic alignment** appears to be **tightening.**
  जब **कुल आयात घट रहे हैं** और **सस्ते स्रोत कम हो रहे हैं**, तो **आर्थिक व्यावहारिकता और रणनीतिक संतुलन** के बीच **भारत का संतुलन और कठिन होता दिख रहा है।**
- The **data underline a crucial trade-off**: **less dependence on sanctioned oil**, but **higher import costs and reduced pricing flexibility.**
  आंकड़े एक महत्वपूर्ण संतुलन को दर्शाते हैं — प्रतिबंधित तेल पर कम निर्भरता, लेकिन **अधिक आयात लागत और मूल्य निर्धारण में कम लचीलापन।**

Trump justifies decision to restart nuke tests; says Pak., China doing it

President says the U.S. must test its weapons on an 'equal basis' with rival powers to ensure reliability; the U.S. has not held a nuclear detonation test since 1992, although it continues to test missile systems capable of carrying nuclear warheads

GS II: Nuclear Proliferation

Pr

WASHINGTON

Pakistan and China are among the countries which are testing nuclear weapons, U.S. President Donald Trump has said to justify his administration's plans to resume testing of the U.S.'s nuclear assets after a gap of over three decades.

Ahead of his meeting with Chinese President Xi Jinping last week, Mr. Trump announced that the U.S. will start testing nuclear weapons on an "equal basis" with rival powers.

In an interview with *CBS News*' Norah O'Donnell on

Aerial address: Donald Trump speaks to presspersons on board Air Force One on his way back to the White House on Sunday. AP

Sunday, the U.S. President named Russia, China, North Korea and Pakistan as the countries testing nuclear weapons.

"Russia's testing, and China's testing, but they don't talk about it. You know, we're an open society. We're different. We talk about it... We're gonna test, because they test and others test," Mr. Trump said.

"And certainly North Korea's been testing. Pakistan's been testing," he asserted.

Shortly before meeting Mr. Xi in South Korea on Thursday last, Mr. Trump said on social media that the U.S. will resume testing nuclear weapons for the first time in three decades.

Mr. Trump claimed some of the countries conducting tests of their nuclear weapons do not acknowledge them.

"They don't go and tell you about it. You don't necessarily know where they're testing. They test way under – underground, where people don't know exactly what's happening with the test," he said.

Last week, Russian President Vladimir Putin said that Russia had tested a Poseidon nuclear-capable super torpedo.

In his remarks, Mr. Trump strongly justified his decision to restart the process for testing nuclear weapons, saying testing was necessary to ensure the reliability of the weapons. "You make nuclear weapons, and then you don't test. How are you gonna know if they work?" he said.

According to U.S. media reports, the U.S. military regularly tests its missiles that are capable of delivering a nuclear warhead, but it has not detonated the weapons since 1992.

Trump justifies decision to restart nuke tests; says Pak., China doing it
ट्रम्प ने परमाणु परीक्षण फिर से शुरू करने के निर्णय का बचाव किया; कहा पाकिस्तान और चीन ऐसा कर रहे हैं

- **The president says** the **U.S. must test its weapons on an "equal basis"** with rival powers to **ensure reliability**; the **U.S. has not held a nuclear detonation test since 1992**, although it continues to **test missile systems capable of carrying nuclear warheads**.
  राष्ट्रपति ने कहा कि अमेरिका को अपने हथियारों का परीक्षण "समान आधार" पर प्रतिद्वंद्वी शक्तियों के साथ करना चाहिए ताकि उनकी विश्वसनीयता सुनिश्चित की जा सके; अमेरिका ने 1992 के बाद कोई परमाणु विस्फोट परीक्षण नहीं किया, हालांकि वह परमाणु वारहेड ले जाने में सक्षम मिसाइल प्रणालियों का परीक्षण जारी रखे हुए है।

- **Pakistan and China** are among the countries which are **testing nuclear weapons**, **U.S. President Donald Trump** has said to justify his administration's **plans to resume testing of the U.S.'s nuclear assets** after a gap of **over three decades**.
  अमेरिकी राष्ट्रपति डोनाल्ड ट्रंप ने कहा कि पाकिस्तान और चीन उन देशों में शामिल हैं जो परमाणु हथियारों का परीक्षण कर रहे हैं, और यह उनके प्रशासन की तीन दशकों से अधिक के अंतराल के बाद अमेरिकी परमाणु संपत्तियों के परीक्षण फिर से शुरू करने की योजना को औचित्य प्रदान करता है।

- **Ahead of his meeting with Chinese President Xi Jinping** last week, Mr. Trump **announced that the U.S. will start testing nuclear weapons** on an **"equal basis" with rival powers.**

  पिछले सप्ताह **चीनी राष्ट्रपति शी जिनपिंग से मुलाकात से पहले**, श्री ट्रंप ने घोषणा की कि अमेरिका प्रतिद्वंद्वी शक्तियों के साथ **"समान आधार"** पर परमाणु हथियारों का परीक्षण शुरू करेगा।

- In an **interview with CBS News' Norah O'Donnell on Sunday**, the **U.S. President named Russia, China, North Korea and Pakistan** as the **countries testing nuclear weapons.**

  रविवार को सीबीएस न्यूज की नोरा ओ'डॉनेल को दिए साक्षात्कार में, अमेरिकी राष्ट्रपति ने रूस, चीन, उत्तर कोरिया और पाकिस्तान को परमाणु हथियारों का परीक्षण करने वाले देशों के रूप में नामित किया।

- "**Russia's testing, and China's testing, but they don't talk about it.** You know, we're an open society. We're different. We talk about it... We're gonna test, because they test and others test," **Mr. Trump said.**

  श्री ट्रंप ने कहा, "रूस परीक्षण कर रहा है, चीन भी कर रहा है, लेकिन वे इस बारे में बात नहीं करते। आप जानते हैं, हम एक खुला समाज हैं। हम अलग हैं। हम इसके बारे में बात करते हैं... हम भी परीक्षण करेंगे, क्योंकि वे करते हैं और दूसरे भी करते हैं।"

- "And certainly **North Korea's been testing. Pakistan's been testing,**" he asserted.

  उन्होंने जोर देते हुए कहा, "और निश्चित रूप से उत्तर कोरिया परीक्षण कर रहा है। पाकिस्तान भी परीक्षण कर रहा है।"

- "**Shortly before meeting Mr. Xi in South Korea on Thursday last**, Mr. Trump said on **social media** that the **U.S. will resume testing nuclear weapons for the first time in three decades.**

  पिछले गुरुवार दक्षिण कोरिया में श्री शी से मिलने से ठीक पहले, श्री ट्रंप ने सोशल मीडिया पर कहा कि अमेरिका तीन दशकों में पहली बार परमाणु हथियारों का परीक्षण फिर से शुरू करेगा।

- Mr. Trump claimed **some of the countries conducting tests of their nuclear weapons do not acknowledge them.**

  श्री ट्रंप ने दावा किया कि **कुछ देश जो अपने परमाणु हथियारों का परीक्षण करते हैं, वे उसे स्वीकार नहीं करते।**

- "They don't go and tell you about it. You don't necessarily know where they're testing. They test way under — underground, where people don't know exactly what's happening with the test," **he said.**

  उन्होंने कहा, "वे इसके बारे में नहीं बताते। आपको जरूरी नहीं पता हो कि वे कहां परीक्षण कर रहे हैं। वे गहराई में — भूमिगत परीक्षण करते हैं, जहां लोगों को यह ठीक-ठीक नहीं पता चलता कि क्या हो रहा है।"

- Last week, **Russian President Vladimir Putin said** that **Russia had tested a Poseidon nuclear-capable super torpedo.**

  पिछले सप्ताह **रूसी राष्ट्रपति व्लादिमीर पुतिन ने कहा कि रूस ने पोसाइडन परमाणु-सक्षम सुपर टॉरपीडो का परीक्षण किया है।**

- In his remarks, **Mr. Trump strongly justified his decision** to **restart the process for testing nuclear weapons**, saying **testing was necessary to ensure the reliability of the weapons.**

  अपने बयान में, श्री ट्रंप ने परमाणु हथियारों के परीक्षण प्रक्रिया को फिर से शुरू करने के अपने निर्णय का दृढ़ता से बचाव किया, यह कहते हुए कि हथियारों की विश्वसनीयता सुनिश्चित करने के लिए परीक्षण आवश्यक है।

- "You make nuclear weapons, and then you don't test. How are you gonna know if they work?" **he said.**

  उन्होंने कहा, "आप परमाणु हथियार बनाते हैं, और फिर उनका परीक्षण नहीं करते। तो आप कैसे जानेंगे कि वे काम करते हैं या नहीं?"

- According to **U.S. media reports**, the **U.S. military regularly tests its missiles** that are **capable of delivering a nuclear warhead**, but it has **not detonated the weapons since 1992.**

  अमेरिकी मीडिया रिपोर्टों के अनुसार, अमेरिकी सेना नियमित रूप से उन मिसाइलों का परीक्षण करती है जो परमाणु वारहेड ले जाने में सक्षम हैं, लेकिन **1992** के बाद से उसने कोई

परमाणु हथियार विस्फोट नहीं किया है।

Hunger monitor confirms famine in Darfur's El Fasher

GS II: Africa

Reuters

A global hunger monitor on Monday confirmed famine conditions in El Fasher, the Sudanese city taken by the paramilitary Rapid Support Forces (RSF) after a lengthy siege, as well as Kadugli, another besieged city in Sudan's south. The finding is the first time the UN-backed Integrated Food Security Phase Classification (IPC) has determined that the cities are in famine, though in December it had confirmed famine in camps for displaced people in El Fasher, capital of North Darfur.

A war that began two-and-a-half years ago between the RSF and the Sudanese army has caused severe hunger and malnutrition to spread across Sudan, as well as displacing millions of people and triggering waves of ethnically charged violence in Darfur. The IPC is the internationally recognised standard for measuring the severity of hunger crises, and its findings have provoked criticism from Sudan's government, which is backed by the army.

The IPC's first determination of famine during the conflict was for the Zamzam displacement camp south of El Fasher in August 2024. El Fasher was subject to RSF assaults and besieged for about 18 months before it fell late last month, deepening a geographical split in Sudan. During the siege, residents said food supplies

The IPC report said Tawila, as well as Mellit and Tawisha were at risk of famine

were cut off, forcing people to eat animal feed and sometimes animal hides. Places where people gathered for community kitchen meals were targeted by drone attacks, they told *Reuters*.

As a result, all children arriving in the nearby town of Tawila after fleeing El Fasher were malnourished, MSF project coordinator Sylvain Pennicaud said on Monday, while adults arrived emaciated. International Criminal Court prosecutors said on Monday they were collecting evidence of alleged mass killings and rapes after El Fasher's fall. The head of the Red Cross said history was repeating itself in Darfur.

Monday's IPC report, based on analysis for September 2025, said Tawila, as well as Mellit and Tawisha were at risk of famine.

Hunger monitor confirms famine in Darfur's El Fasher
भूख मॉनिटर ने दारफुर के एल फाशेर में अकाल की पुष्टि की

- A **global hunger monitor** on Monday **confirmed famine conditions** in **El Fasher**, the **Sudanese city taken by the paramilitary Rapid Support Forces (RSF)** after a **lengthy siege**, as well as **Kadugli**, another besieged city in **Sudan's south.**
एक **वैश्विक भूख निगरानी एजेंसी** ने सोमवार को **एल फाशेर में अकाल की स्थिति की पुष्टि की**, जो **अर्धसैनिक रैपिड सपोर्ट फोर्सेज (RSF)** द्वारा **लंबे घेरे के बाद कब्जा की गई सूडानी शहर** है, साथ ही **दक्षिणी सूडान के कदुगली शहर** में भी।

- The **finding** is the **first time** the **UN-backed Integrated Food Security Phase Classification (IPC)** has determined that the cities are in **famine**, though in **December** it had confirmed famine in **camps for displaced people in El Fasher**, capital of **North Darfur.**
यह **खोज पहली बार** है जब **संयुक्त राष्ट्र समर्थित इंटीग्रेटेड फूड सिक्योरिटी फेज क्लासिफिकेशन (IPC)** ने यह निर्धारित किया है कि ये शहर **अकाल की स्थिति में हैं**, हालांकि **दिसंबर में** इसने **उत्तर दारफुर की राजधानी एल फाशेर में विस्थापित लोगों के शिविरों में अकाल की पुष्टि की थी।**

- A **war that began two-and-a-half years ago** between the **RSF and the Sudanese army** has caused **severe hunger and malnutrition** to spread across **Sudan**, as well as **displacing millions of people** and triggering **waves of ethnically charged violence in Darfur.**

   दो साल पहले आरएसएफ और सूडानी सेना के बीच शुरू हुए युद्ध ने सूडान में भुखमरी और कुपोषण को फैलाया है, साथ ही लाखों लोगों को विस्थापित किया है और दारफुर में जातीय हिंसा की लहरें शुरू कर दी हैं।

- The **IPC** is the **internationally recognised standard** for **measuring the severity of hunger crises**, and its findings have **provoked criticism from Sudan's government**, which is **backed by the army.**

   IPC भूख संकट की गंभीरता को मापने का अंतरराष्ट्रीय स्तर पर मान्यता प्राप्त मानक है, और इसके निष्कर्षों ने सेना समर्थित सूडान सरकार की आलोचना को जन्म दिया है।

- The **IPC's first determination of famine during the conflict** was for the **Zamzam displacement camp south of El Fasher** in **August 2024.**

   संघर्ष के दौरान IPC द्वारा अकाल की पहली पुष्टि अगस्त 2024 में एल फाशेर के दक्षिण में ज़मज़म विस्थापन शिविर के लिए की गई थी।

- **El Fasher** was **subject to RSF assaults** and **besieged for about 18 months** before it **fell late last month**, deepening a **geographical split in Sudan.**

   एल फाशेर पर आरएसएफ ने लगभग 18 महीनों तक हमले और घेरा डाला था, इसके बाद पिछले महीने के अंत में यह गिर गया, जिससे सूडान में भौगोलिक विभाजन और गहरा गया।

- During the siege, **residents said food supplies were cut off**, forcing people to **eat animal feed and sometimes animal hides.**

   घेरे के दौरान, निवासियों ने बताया कि खाद्य आपूर्ति पूरी तरह बंद कर दी गई थी, जिससे लोग पशु चारा और कभी-कभी जानवरों की खाल खाने को मजबूर हुए।

- **Places where people gathered for community kitchen meals** were **targeted by drone attacks**, they told Reuters.

   उन्होंने रॉयटर्स को बताया कि जहां लोग सामुदायिक भोजन के लिए इकट्ठा होते थे, उन स्थानों पर ड्रोन हमले किए गए।

- As a result, **all children arriving in the nearby town of Tawila after fleeing El Fasher** were **malnourished**, MSF project coordinator Sylvain Pennicaud said on Monday, while **adults arrived emaciated.**

   परिणामस्वरूप, एल फाशेर से भागकर समीपवर्ती तविला शहर पहुंचने वाले सभी बच्चे कुपोषित थे, एमएसएफ परियोजना समन्वयक सिल्वेन पेनिकॉड ने सोमवार को कहा, जबकि वयस्क अत्यधिक दुबले-पतले पहुंचे।

- **International Criminal Court prosecutors** said on Monday they were **collecting evidence of alleged mass killings and rapes** after **El Fasher's fall.**

   अंतरराष्ट्रीय आपराधिक न्यायालय के अभियोजकों ने सोमवार को कहा कि वे एल फाशेर के पतन के बाद कथित सामूहिक हत्याओं और बलात्कारों के सबूत एकत्र कर रहे हैं।

- The **head of the Red Cross** said **history was repeating itself in Darfur.**

   रेड क्रॉस के प्रमुख ने कहा कि दारफुर में इतिहास खुद को दोहरा रहा है।

- **Monday's IPC report**, based on **analysis for September 2025**, said **Tawila, as well as Mellit and Tawisha, were at risk of famine.**

   सितंबर 2025 के विश्लेषण पर आधारित सोमवार की IPC रिपोर्ट ने कहा कि तविला, मेलिट और तवीशा में अकाल का खतरा है।

Trump does not rule out any kind of army operation in Nigeria

GS II: Africa

Agence France-Presse
ABOARD AIR FORCE ONE

U.S. President Donald Trump has repeated his threat of a military operation in Nigeria over killings of Christians, and that it could be ground or air attacks.

As claims of Christian "persecution" in Africa's most populous country have found traction online among the U.S. and European right, experts say Nigeria's myriad conflicts kill both Christians and Muslims without distinction.

Mr. Trump's remarks came after the Nigerian presidency suggested a meeting between the two leaders to resolve the issue.

Asked by a reporter aboard Air Force One if he was considering U.S. troops on the ground in Nigeria or air strikes, Mr. Trump replied: "Could be, I mean, a lot of things – I envisage a lot of things."

Nigeria's government denies that Christians are especially targeted.

Trump does not rule out any kind of army operation in Nigeria

ट्रम्प ने नाइजीरिया में किसी भी प्रकार के सैन्य अभियान की संभावना से इनकार नहीं किया

- **U.S. President Donald Trump** has repeated his **threat of a military operation in Nigeria** over **killings of Christians**, and that it could be **ground or air attacks**.

अमेरिकी राष्ट्रपति डोनाल्ड ट्रंप ने नाइजीरिया में ईसाइयों की हत्याओं को लेकर **सैन्य अभियान की धमकी दोहराई**, जो **जमीनी या हवाई हमले** हो सकते हैं।

- As **claims of Christian "persecution" in Africa's most populous country** have found **traction online among the U.S. and European right**, experts say **Nigeria's myriad conflicts kill both Christians and Muslims without distinction.**

जैसे ही **अफ्रीका के सबसे अधिक आबादी वाले देश** में ईसाइयों के "उत्पीड़न" के दावे अमेरिकी और **यूरोपीय दक्षिणपंथी समूहों** में ऑनलाइन प्रसारित हुए, विशेषज्ञों का कहना है कि **नाइजीरिया के अनेक संघर्षों में ईसाई और मुसलमान दोनों समान रूप से मारे जाते हैं।**

- **Mr. Trump's remarks** came after the **Nigerian presidency suggested a meeting** between the two leaders to **resolve the issue.**

श्री ट्रंप की टिप्पणी तब आई जब **नाइजीरियाई राष्ट्रपति कार्यालय** ने इस मुद्दे को सुलझाने के लिए दोनों नेताओं के बीच बैठक का सुझाव दिया।

- Asked by a **reporter aboard Air Force One** if he was **considering U.S. troops on the ground in Nigeria or air strikes**, Mr. Trump replied: "**Could be, I mean, a lot of things — I envisage a lot of things.**"

जब **एयर फ़ोर्स वन पर एक पत्रकार** ने उनसे पूछा कि क्या वह **नाइजीरिया में अमेरिकी जमीनी सैनिकों या हवाई हमलों** पर विचार कर रहे हैं, तो श्री ट्रंप ने जवाब दिया: "**हो सकता है, मेरा मतलब है, बहुत सी बातें — मैं बहुत सी संभावनाएँ देखता हूँ।**"

- **Nigeria's government denies** that **Christians are especially targeted.**

नाइजीरियाई सरकार ने इनकार किया है कि **ईसाइयों को विशेष रूप से निशाना बनाया जा रहा है।**

UAE is supplying weapons to RSF militia, says Sudan's ambassador to India Eltom

GS II: Africa

Kallol Bhattacherjee
NEW DELHI

Sudan is not in a state of civil war and is confronting attacks from "non-regional actors" that include the UAE, which is supplying weapons to the Rapid Support Forces (RSF) militia that has been killing civilians in El Fasher city in Darfur in western Sudan, said the Sudanese ambassador to India on Monday.

Addressing a press conference at the Embassy here, Ambassador Mohammed Abdalla Ali Eltom said stopping the supply of weapons by the UAE to the RSF will be the "first step" in "ending the war".

"Sudan is not facing a civil war. We are confronting conspiracies of non-regional actors. The RSF is acting like a proxy foreign powers and a few countries in the region are acting as corridors for arms supply to the RSF," said Mr. Eltom, explaining that the UAE's weapons are being channelled through Libya and Chad.

"The militia threatens to destabilise the entire region from the Red Sea to the Central African region.

The RSF threatens to destabilise the entire region from the Red Sea to Central Africa, says the envoy

Therefore, the international community must designate the RSF as a terrorist organisation and impose targeted sanctions on them and on all weapons suppliers that are supporting the RSF," said Mr. Eltom.

The RSF, which has been carrying out attacks in El Fasher, is using "strategic drones" that are cap-able of flying for long duration which indicate that state-level armed forces are involved in arming the RSF.

The Sudanese envoy acknowledged India's humanitarian assistance to Sudan during the crisis that has been continuing since April 2023. He appreciated India's decision to maintain the embassy in Sudan despite the violence.

He also confirmed that an Indian national was captured by the RSF in El Fasher as militants entered the city on October 26.

UAE is supplying weapons to RSF militia, says Sudan's ambassador to India Eltom

यूएई आरएसएफ मिलिशिया को हथियार उपलब्ध करा रहा है, भारत में सूडान के राजदूत एलटोम ने कहा

- **Sudan is not in a state of civil war** and is **confronting attacks from "non-regional actors"** that include the **UAE**, which is **supplying weapons to the Rapid Support Forces (RSF) militia** that has been **killing civilians in El Fasher city in Darfur in western Sudan**, said the **Sudanese ambassador to India** on Monday.
  सूडान वर्तमान में गृहयुद्ध की स्थिति में नहीं है, बल्कि वह **"गैर-क्षेत्रीय शक्तियों"** के हमलों का सामना कर रहा है, जिनमें **यूएई** भी शामिल है, जो **रैपिड सपोर्ट फोर्सेज (RSF) मिलिशिया को हथियार मुहैया करा रहा है**, जिसने **पश्चिमी सूडान के दारफुर क्षेत्र के एल फाशेर शहर में नागरिकों की हत्या की है**, यह बात **भारत में सूडान के राजदूत ने** सोमवार को कही।

- Addressing a **press conference at the Embassy**, **Ambassador Mohammed Abdalla Ali Eltom** said **stopping the supply of weapons by the UAE to the RSF** will be the **"first step"** in **"ending the war."**
  दूतावास में आयोजित एक प्रेस कॉन्फ्रेंस को संबोधित करते हुए, राजदूत मोहम्मद अब्दल्ला अली एलटोम ने कहा कि **यूएई द्वारा आरएसएफ को हथियारों की आपूर्ति रोकना "युद्ध समाप्त करने की दिशा में पहला कदम"** होगा।

- **"Sudan is not facing a civil war. We are confronting conspiracies of non-regional actors.** The **RSF is acting like a proxy of foreign powers** and a few countries in the region are **acting as corridors for arms supply to the RSF,"** said Mr. Eltom, explaining that **the UAE's weapons are being channelled through Libya and Chad.**
  श्री एलटोम ने कहा, **"सूडान गृहयुद्ध का सामना नहीं कर रहा है। हम गैर-क्षेत्रीय शक्तियों की साजिशों का मुकाबला कर रहे हैं। आरएसएफ विदेशी शक्तियों के प्रॉक्सी की तरह काम कर रहा है**, और क्षेत्र के कुछ देश **आरएसएफ को हथियारों की आपूर्ति के गलियारे** के रूप में कार्य कर रहे हैं।" उन्होंने बताया कि **यूएई के हथियार लीबिया और चाड के माध्यम से भेजे जा रहे हैं।**

- **"The militia threatens to destabilise the entire region from the Red Sea to the Central African region.** Therefore, the **international community must designate**

the RSF as a terrorist organisation and impose targeted sanctions on them and on all weapons suppliers that are supporting the RSF," said Mr. Eltom.

श्री एलटोम ने कहा, "यह मिलिशिया लाल सागर से लेकर मध्य अफ्रीकी क्षेत्र तक पूरे इलाके को अस्थिर करने की धमकी दे रहा है। इसलिए **अंतरराष्ट्रीय समुदाय को आरएसएफ को एक आतंकवादी संगठन घोषित करना चाहिए** और **उस पर तथा उसके सभी समर्थक हथियार आपूर्तिकर्ताओं पर लक्षित प्रतिबंध लगाने चाहिए।"**

- The **RSF**, which has been **carrying out attacks in El Fasher**, is using **"strategic drones"** that are **capable of flying for long duration**, which indicate that **state-level armed forces are involved in arming the RSF.**

  आरएसएफ, जो एल फाशेर में हमले कर रहा है, **"रणनीतिक ड्रोन"** का उपयोग कर रहा है जो **लंबे समय तक उड़ान भरने में सक्षम हैं,** जो इस बात का संकेत देते हैं कि **राज्य-स्तरीय सशस्त्र बल आरएसएफ को हथियार प्रदान करने में शामिल हैं।**

- The **Sudanese envoy acknowledged India's humanitarian assistance to Sudan** during the **crisis that has been continuing since April 2023.**

  सूडान के राजदूत ने भारत द्वारा प्रदान की गई मानवीय सहायता की सराहना की, जो **अप्रैल 2023 से जारी संकट के दौरान दी गई थी।**

- He **appreciated India's decision to maintain the embassy in Sudan despite the violence.**

  उन्होंने **हिंसा के बावजूद सूडान में दूतावास को बनाए रखने के भारत के निर्णय की सराहना की।**

- He also **confirmed that an Indian national was captured by the RSF in El Fasher** as **militants entered the city on October 26.**

  उन्होंने यह भी **पुष्टि की कि एक भारतीय नागरिक को आरएसएफ ने 26 अक्टूबर को शहर में घुसने के बाद एल फाशेर में पकड़ लिया था।**

GS Paper III: Economy, S&T, Environment, DM, &IS	
TOPICS COVERED	**04_11_2025**
1.	**₹3,000 crore lost to digital arrest scams, says Supreme Court** **₹3,000 करोड़ डिजिटल गिरफ्तारी घोटालों में गंवाए गए, सुप्रीम कोर्ट ने कहा**
2.	**Great Nicobar project: map ready for denotification of tribal reserve** **ग्रेट निकोबार परियोजना: जनजातीय आरक्षित भूमि के निरस्तीकरण के लिए मानचित्र तैयार**
3.	**Heavy metals found in Cauvery fish; study advises reducing consumption** **कावेरी मछलियों में भारी धातुएँ पाई गईं; अध्ययन ने खपत कम करने की सलाह दी**
4.	**Does posture help kangaroos increase speed without burning more energy?** **क्या मुद्रा (posture) कंगारुओं को अधिक ऊर्जा खर्च किए बिना गति बढ़ाने में मदद करती है?**
5.	**QUIZ**
6.	**India's IT dream is at a crossroads**

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	भारत का आईटी सपना एक चौराहे पर है
7.	**A Kerala story** एक केरल की कहानी
8.	**New Pathways to End Extreme Poverty** अत्यधिक गरीबी समाप्त करने के नए मार्ग
9.	**Estimated yield of India's bioeconomy sector by 2030** 2030 तक भारत के जैव-अर्थव्यवस्था क्षेत्र का अनुमानित उत्पादन
10.	**The decline in white collar hiring in India last month** पिछले महीने भारत में श्वेत कॉलर नियुक्तियों में गिरावट
11	**Has cloud seeding been effective?** क्या क्लाउड सीडिंग प्रभावी रही है?

₹3,000 crore lost to digital arrest scams, says Supreme Court

GS III: Cyber Security

Krishnadas Rajagopal
NEW DELHI

The Supreme Court on Monday said more than ₹3,000 crore had been scammed by fraudsters from victims, mostly drawn from the elderly population, through "digital arrests".

Justice Kant says judiciary will pass strict orders to strengthen agencies against the fraudsters.

A Bench headed by Justice Surya Kant was referring to a confidential report submitted by the Union government. Justice Kant, who is the Chief Justice of India-designate, said the report showed that the problem of digital arrests was a "very big challenge". "Much more than we thought..." Justice Kant observed.

"The report shows the extent of fraud is very big... ₹3,000 crore was collected from victims in India alone. What would be the suffering at the global level?" Justice Kant asked.

Solicitor-General Tushar Mehta, for the Centre, agreed with Justice Kant, saying digital arrest scam was initially found to be beyond what they had expected. Justice Kant said the judiciary would pass harsh and stringent orders to strengthen the hands of the agencies against the fraudsters, "give you all support". "Otherwise, this problem will magnify, and the victims are aged people," Mr. Mehta said.

In an earlier hearing, the Supreme Court had orally mooted tasking the Central Bureau of Investigation (CBI) with probing the menace of digital arrests orchestrated by fraudsters posing as judges and police officers who use forged documents.

Attorney-General R. Venkataramani had submitted that these cyber crimes originate from across the border and were fashioned by "money-laundering gangs".

'Scam compounds'
The Solicitor-General had informed that the organised cybercrimes behind digital arrests were generated from "scam compounds" and done at a large-scale level.

The Supreme Court had originally taken *suo motu* cognisance of a case of digital arrest of a senior citizen couple in Haryana's Ambala on the basis of forged orders of the court and probe agencies by fraudsters to extort ₹1.05 crore. However, the court was later informed that there were numerous cases across the country in which innocent people, especially senior citizens, were threatened with "cyber arrests" by criminals, who misuse Artificial Intelligence and other technology to morph courtrooms and police stations, unless they cough up huge sums of money.

"The impact of the problem is great. There is not only a financial but also a human angle. Gullible people are promised employment abroad and reduced to the status of slaves. Criminals morph the faces of judges and make calls with court rooms shown as background," Mr. Mehta had said.

डिजिटल गिरफ्तारी के खतरे की जांच सौंपी जाए, जिसे **न्यायाधीश और पुलिस अधिकारी बनकर प्रस्तुत होने वाले धोखेबाजों** द्वारा **जाली दस्तावेजों** का उपयोग कर अंजाम दिया जा रहा है।

- **Attorney-General R. Venkataramani** had submitted that these **cyber crimes** originate from **across the border** and were fashioned by "**money-laundering gangs**".
  अटॉर्नी जनरल आर. वेंकटरमणि ने कहा था कि ये **साइबर अपराध सीमा पार से उत्पन्न** होते हैं और "**मनी लॉन्ड्रिंग गिरोहों**" द्वारा संचालित किए जाते हैं।

'Scam compounds'
'घोटाला केंद्र'

- The Solicitor-General had informed that the **organised cybercrimes** behind digital arrests were generated from "**scam compounds**" and done at a **large-scale level**.
  सॉलिसिटर जनरल ने बताया कि **डिजिटल गिरफ्तारी** के पीछे के **संगठित साइबर अपराध** "**घोटाला केंद्रों**" से चलाए जाते हैं और **बड़े पैमाने पर** किए जाते हैं।

- The Supreme Court had originally taken **suo motu cognisance** of a case of **digital arrest** of a **senior citizen couple in Haryana's Ambala** on the basis of **forged orders of the court and probe agencies** by **fraudsters** to extort ₹1.05 crore.
  सुप्रीम कोर्ट ने मूल रूप से हरियाणा के अंबाला में एक **वरिष्ठ नागरिक दंपत्ति की डिजिटल गिरफ्तारी** के मामले में **स्वतः संज्ञान (suo motu cognisance)** लिया था, जहां **धोखेबाजों** ने **अदालत और जांच एजेंसियों के जाली आदेशों** का उपयोग करके ₹1.05 करोड़ की उगाही की थी।

- However, the court was later informed that there were **numerous cases across the country** in which **innocent people**, especially **senior citizens**, were threatened with "**cyber arrests**" by **criminals**, who misuse **Artificial Intelligence and other technology** to **morph courtrooms and police stations**, unless they cough up huge sums of money.
  हालांकि, बाद में अदालत को बताया गया कि देशभर में ऐसे **कई मामले** हैं, जिनमें **निर्दोष लोग**, विशेषकर **वरिष्ठ नागरिक**, को **अपराधियों** द्वारा "**साइबर गिरफ्तारी**" की धमकी दी गई, जो **कृत्रिम बुद्धिमत्ता (AI)** और अन्य **तकनीक** का दुरुपयोग कर **अदालतों और पुलिस स्टेशनों के दृश्य** को **मॉर्फ** करते हैं, जब तक कि वे **बड़ी रकम** न दे दें।

- "The impact of the problem is great. There is not only a **financial** but also a **human angle**. **Gullible people** are promised **employment abroad** and reduced to the status of **slaves**. Criminals **morph the faces of judges** and make calls with **court rooms shown as background**," Mr. Mehta had said.
  "इस समस्या का प्रभाव बहुत बड़ा है। यह केवल **आर्थिक** नहीं बल्कि **मानवीय दृष्टिकोण** से भी जुड़ी है। **भोले-भाले लोगों** को **विदेश में रोजगार** का लालच देकर **गुलामों की तरह** बना दिया जाता है। अपराधी **न्यायाधीशों के चेहरे मॉर्फ** करते हैं और **अदालत के दृश्य पृष्ठभूमि में रखकर** कॉल करते हैं," श्री मेहता ने कहा था।

Great Nicobar project: map ready for denotification of tribal reserve

GS III: Sustainable Development

Abhinay Lakshman
NEW DELHI

The Andaman and Nicobar Islands administration has prepared a map for the denotification and renotification of tribal reserve land for the Great Nicobar Island mega-infrastructure project, and will soon be finalising the sites for setting up towers in these lands.

The administration has also said that transit accommodation to initially serve all Great Nicobar Island project staff has been constructed, and that a "Comprehensive Tribal Welfare Plan" is slated to be finalised by next month.

The administration made a presentation to this effect to the Andaman and Nicobar Islands Integrated Development Corporation's (ANIIDCO) Monitor-

A "Comprehensive Tribal Welfare Plan" will be ready next month, the Andaman and Nicobar Islands administration said. FILE PHOTO

ing Committee overseeing tribal-related matters for the ₹92,000-crore infrastructure project proposed on the Great Nicobar Island, which includes a transhipment port, an airport, a power plant, and a township. The project is being developed by the ANIIDCO, even as forest and environment clearances issued for the project are under challenge in courts and tribunals.

In a meeting of the monitoring committee on tribal-related matters held in October, the Tribal Welfare Department of the islands' administration noted that a Geographic Information System (GIS) map had been prepared for the denotification and renotification of land with help from the Forest Department. Additionally, sites for towers will be finalised after consultations with the Assistant Commissioner of Campbell Bay and the Andaman Adim Janjati Vikas Samiti, the administration body representing the Shompen people.

Notably, any denotification of tribal reserve land for the GNI project requires that forest rights over it be first settled under the Forest Rights Act, 2006. This finalisation of maps for denotification comes even as the Calcutta High Court is hearing petitions challenging the administration's claim that it had settled forest rights here as per law.

Great Nicobar project: map ready for denotification of tribal reserve
ग्रेट निकोबार परियोजना: जनजातीय आरक्षित भूमि के निरस्तीकरण के लिए मानचित्र तैयार

- The **Andaman and Nicobar Islands administration** has prepared a **map for the denotification and renotification of tribal reserve land** for the **Great Nicobar Island mega-infrastructure project**, and will soon be **finalising the sites for setting up towers** in these lands.
 अंडमान और निकोबार द्वीपसमूह प्रशासन ने ग्रेट निकोबार द्वीप मेगा-इंफ्रास्ट्रक्चर परियोजना के लिए जनजातीय आरक्षित भूमि के निरस्तीकरण और पुनः अधिसूचना का मानचित्र तैयार किया है, और जल्द ही इन भूमि पर टावर स्थापित करने के स्थलों को अंतिम रूप दिया जाएगा।

- The **administration** has also said that **transit accommodation** to initially serve all **Great Nicobar Island project staff** has been **constructed**, and that a **"Comprehensive Tribal Welfare Plan"** is slated to be **finalised by next month.**
 प्रशासन ने यह भी कहा है कि ग्रेट निकोबार द्वीप परियोजना के सभी कर्मचारियों के लिए अस्थायी आवास का निर्माण पूरा हो चुका है, और एक "व्यापक जनजातीय कल्याण योजना" को अगले महीने तक अंतिम रूप दिया जाएगा।

- The **administration made a presentation** to this effect to the **Andaman and Nicobar Islands Integrated Development Corporation's (ANIIDCO) Monitoring Committee** overseeing **tribal-related matters** for the **₹92,000-crore infrastructure project** proposed on the **Great Nicobar Island**, which includes a **transhipment port, an airport, a power plant, and a township.**

प्रशासन ने इस संबंध में प्रस्तुति दी अंडमान और निकोबार द्वीप एकीकृत विकास निगम (ANIIDCO) की निगरानी समिति को, जो **ग्रेट निकोबार द्वीप पर प्रस्तावित ₹92,000 करोड़ की अवसंरचना परियोजना** से संबंधित **जनजातीय मामलों** की निगरानी कर रही है। इस परियोजना में **ट्रांसशिपमेंट पोर्ट, हवाई अड्डा, बिजली संयंत्र और टाउनशिप** शामिल हैं।

- The project is being **developed by the ANIIDCO**, even as **forest and environment clearances** issued for the project are **under challenge in courts and tribunals.**
  यह परियोजना **ANIIDCO द्वारा विकसित की जा रही है**, जबकि परियोजना के लिए जारी **वन और पर्यावरण स्वीकृतियाँ** वर्तमान में **अदालतों और अधिकरणों में चुनौती के अधीन हैं।**

- In a **meeting of the monitoring committee on tribal-related matters** held in October, the **Tribal Welfare Department** of the islands' administration noted that a **Geographic Information System (GIS) map** had been **prepared for the denotification and renotification of land** with help from the **Forest Department.**
  अक्टूबर में आयोजित **जनजातीय मामलों से संबंधित निगरानी समिति की बैठक** में द्वीप प्रशासन के **जनजातीय कल्याण विभाग** ने बताया कि **वन विभाग की सहायता से** भूमि के **निरस्तीकरण और पुनः अधिसूचना** के लिए एक **भौगोलिक सूचना प्रणाली (GIS) मानचित्र** तैयार किया गया है।

- Additionally, **sites for towers** will be **finalised after consultations** with the **Assistant Commissioner of Campbell Bay** and the **Andaman Adim Janjati Vikas Samiti**, the administrative body representing the **Shompen people.**
  इसके अतिरिक्त, **टावरों के स्थलों** को **कैम्पबेल बे के सहायक आयुक्त** और अंडमान आदिम जनजाति विकास समिति — जो **शोमपेन जनजाति का प्रतिनिधित्व करने वाली प्रशासनिक संस्था है** — से **परामर्श के बाद अंतिम रूप दिया जाएगा।**

- Notably, any **denotification of tribal reserve land** for the GNI project requires that **forest rights over it be first settled under the Forest Rights Act, 2006.**
  उल्लेखनीय है कि **ग्रेट निकोबार द्वीप (GNI) परियोजना** के लिए **जनजातीय आरक्षित भूमि के निरस्तीकरण** से पहले उस भूमि पर **वन अधिकार अधिनियम, 2006** के तहत **वन अधिकारों का निपटारा किया जाना आवश्यक है।**

- This **finalisation of maps for denotification** comes even as the **Calcutta High Court** is **hearing petitions challenging** the administration's claim that it had **settled forest rights here as per law.**
  निरस्तीकरण के लिए मानचित्रों को अंतिम रूप दिए जाने की यह प्रक्रिया उस समय हो रही है जब **कलकत्ता उच्च न्यायालय** प्रशासन के इस दावे को **चुनौती देने वाली याचिकाओं की सुनवाई** कर रहा है कि उसने **कानून के अनुसार यहां वन अधिकारों का निपटारा कर लिया है।**

Heavy metals found in Cauvery fish; study advises reducing consumption
कावेरी मछलियों में भारी धातुएँ पाई गईं; अध्ययन ने खपत कम करने की सलाह दी

- While **occasional fish consumption** may not pose immediate threats, prolonged exposure could lead to **non-carcinogenic and carcinogenic risks**, particularly from **cadmium and lead**; the risk depends on both the amount consumed, the frequency of intake, and the **age of the individual**.

  जबकि **कभी-कभार मछली का सेवन** तात्कालिक खतरा पैदा नहीं कर सकता, लेकिन लंबे समय तक संपर्क में रहने से **गैर-कार्सिनोजेनिक और कार्सिनोजेनिक जोखिम** हो सकते हैं, विशेष रूप से **कैडमियम और सीसे (lead)** से; जोखिम इस बात पर निर्भर करता है कि कितनी मात्रा में सेवन किया गया, सेवन की **आवृत्ति (frequency)** क्या है, और व्यक्ति की **उम्र** कितनी है।

Heavy metals polluting Cauvery River and its fish
कावेरी नदी और उसकी मछलियों में भारी धातुओं का प्रदूषण

- Heavy metals are polluting the **Cauvery River** and its **fish**, researchers from **Tamil Nadu** have reported. They have also cautioned against consuming "regular" or "excessive" amounts of fish from here.

  तमिलनाडु के शोधकर्ताओं ने बताया है कि **कावेरी नदी** और उसकी **मछलियाँ** भारी धातुओं से प्रदूषित हो रही हैं। उन्होंने यहाँ की मछलियों का "नियमित" या "अत्यधिक" मात्रा में सेवन करने से सावधान रहने की चेतावनी दी है।

- The study was conducted by a team at **Bharathidasan University** in **Tiruchirappalli** and was published in the journal **Environmental Earth Sciences** in **August**.

  यह अध्ययन **तिरुचिरापल्ली स्थित भारतीदासन विश्वविद्यालय** की एक टीम द्वारा किया गया था और इसे **अगस्त** में एनवायरनमेंटल अर्थ साइंसेज नामक जर्नल में प्रकाशित किया गया।

- Scientists from the university studied the **spatial distribution** of and **ecological risks** due to heavy metals in sediments from **18 sites** along the river and fish from **10 sites**, from **August 2023 to February 2024**.

  विश्वविद्यालय के वैज्ञानिकों ने **अगस्त 2023 से फरवरी 2024** तक नदी के किनारे **18 स्थानों** की तलछटों और **10 स्थानों** की मछलियों में भारी धातुओं के **स्थानिक वितरण** और **पारिस्थितिक जोखिमों** का अध्ययन किया।

- They focused their analysis on **chromium, cadmium, copper, lead, and zinc**.

  उन्होंने अपने विश्लेषण का ध्यान **क्रोमियम, कैडमियम, कॉपर, लेड और जिंक** पर केंद्रित किया।

- They found that the accumulation of heavy metals in fish tissues varied significantly across species, with several exceeding the **threshold values** for **non-carcinogenic** and **carcinogenic health risks**, especially for **cadmium and lead**.

  उन्होंने पाया कि मछलियों के ऊतकों में भारी धातुओं का संचय प्रजातियों के अनुसार काफी भिन्न था, और कई मछलियों में यह **कैडमियम और लेड** के लिए **गैर-कार्सिनोजेनिक** और **कार्सिनोजेनिक स्वास्थ्य जोखिमों की सीमा** से अधिक था।

Human v. natural sources
मानव बनाम प्राकृतिक स्रोत

- **Rajaram Rajendran**, in the **marine science department** at **Bharathidasan University** and one of the authors of the report, said his team's study holds significant **ecological, environmental, and public health relevance** because it provides a comprehensive assessment of heavy metal contamination in the **Cauvery river basin**.

  भारतीदासन विश्वविद्यालय के **समुद्री विज्ञान विभाग** के **राजाराम राजेंद्रन**, जो इस रिपोर्ट के लेखकों में से एक हैं, ने कहा कि उनकी टीम का अध्ययन **कावेरी नदी बेसिन** में भारी धातु प्रदूषण का एक व्यापक आकलन प्रदान करता है, जो **पारिस्थितिक, पर्यावरणीय और सार्वजनिक स्वास्थ्य** की दृष्टि से अत्यंत महत्वपूर्ण है।

- "It highlights the pressing impacts of **urbanisation, industrial effluents, and agricultural runoff** on sediment and freshwater fish quality," he said.

  उन्होंने कहा, "यह अध्ययन **शहरीकरण, औद्योगिक अपशिष्ट और कृषि अपवाह** के तलछट और ताजे पानी की मछलियों की गुणवत्ता पर पड़ने वाले गंभीर प्रभावों को उजागर करता है।"

- The team also found what it described as a **notable variation** in metal concentrations across the various sites.

  टीम ने विभिन्न स्थलों पर धातुओं की सांद्रता में **उल्लेखनीय भिन्नता** भी पाई।

- "The detection of **cadmium and lead** as primary contaminants of concern, with levels exceeding threshold limits in some fish species, underscores the potential risks to both **ecosystem health** and **human consumers**," Dr. Rajendran said.

  डॉ. राजेंद्रन ने कहा कि **कैडमियम और लेड** को प्रमुख चिंताजनक प्रदूषक के रूप में पाया गया है, जिनके स्तर कुछ मछली प्रजातियों में **सीमा स्तरों से अधिक** हैं, जिससे **पारिस्थितिकी तंत्र के स्वास्थ्य** और **मानव उपभोक्ताओं** दोनों के लिए संभावित जोखिम उजागर होते हैं।

- The scientists used several **pollution indices**, each index being a number that evaluates the pollution levels of soils and sediments, calculated using the concentration of specific elements relative to their background levels.

  वैज्ञानिकों ने कई **प्रदूषण सूचकांक (pollution indices)** का उपयोग किया, जिनके माध्यम से मिट्टी और तलछट में विशिष्ट तत्वों की सांद्रता की तुलना उनके प्राकृतिक स्तर से कर प्रदूषण का आकलन किया गया।

- They included **Igeo** (geoaccumulation index) to determine heavy metal pollution in sediments; **contamination factor**; **contamination degree**; **pollution load index**; and **potential ecological risk**.

  उन्होंने तलछटों में भारी धातु प्रदूषण निर्धारित करने के लिए **Igeo (भू-संचय सूचकांक)**, **प्रदूषण कारक**, **प्रदूषण डिग्री**, **प्रदूषण लोड सूचकांक**, और **संभावित पारिस्थितिक जोखिम** को शामिल किया।

- Dr. Rajendran said that by integrating **Igeo** and the **potential ecological risk indices** with **multivariate statistical analyses**, the study was able to "effectively" distinguish between **anthropogenic (human origin)** and **natural sources** vis-à-vis heavy metals.

  डॉ. राजेंद्रन ने कहा कि **Igeo** और **संभावित पारिस्थितिक जोखिम सूचकांकों** को **बहु-परिमितीय सांख्यिकीय विश्लेषण (multivariate statistical analyses)** के साथ एकीकृत करके, यह अध्ययन भारी धातुओं के **मानवजनित (anthropogenic)** और **प्राकृतिक स्रोतों** के बीच प्रभावी रूप से अंतर कर सका।

- "This approach provides valuable insights into the dynamics of **metal bioaccumulation** and **pollution pathways** in a **tropical river system** under rapid **industrial and urban development**," Dr. Rajendran said.

  डॉ. राजेंद्रन ने कहा, "यह दृष्टिकोण **औद्योगिक और शहरी विकास** के तेजी से हो रहे दौर में एक **उष्णकटिबंधीय नदी प्रणाली** में धातुओं के **जैव-संचय (bioaccumulation)** और **प्रदूषण मार्गों** की गतिशीलता पर महत्वपूर्ण अंतर्दृष्टि प्रदान करता है।"

- The study "provides valuable, updated insight into the scale and risks of heavy metal pollution in **freshwater fish populations of the Cauvery river**," said **Nikita Gupta**, a researcher at the **Vellore Institute of Technology**, who, along with her colleague **Sathiavelu Arunachalam**, has studied heavy metal pollution in **tilapia fish** in the Cauvery.

  वेल्लोर इंस्टीट्यूट ऑफ टेक्नोलॉजी की शोधकर्ता **निकीता गुप्ता**, जिन्होंने अपने सहयोगी **सथियावेलु अरुणाचलम** के साथ कावेरी की **तिलापिया मछलियों** में भारी धातु प्रदूषण का अध्ययन किया है, ने कहा कि यह अध्ययन **कावेरी नदी की ताजे पानी की मछलियों में भारी धातु प्रदूषण के पैमाने और जोखिमों** पर महत्वपूर्ण, अद्यतन जानकारी प्रदान करता है

- She added that the new paper highlighted the presence as well as the distribution of key **toxic metals** in multiple local fish species — "a critical concern given the river's importance for **drinking water, fisheries, and agriculture in Southern India**."

  उन्होंने आगे कहा कि यह नया अध्ययन कई स्थानीय मछली प्रजातियों में प्रमुख **विषैली धातुओं (toxic metals)** की उपस्थिति और वितरण को उजागर करता है — "जो कि दक्षिण भारत में नदी के **पीने के पानी, मत्स्य पालन और कृषि** के लिए महत्व को देखते हुए अत्यंत चिंताजनक है।"

Fish consumption
मछली का सेवन

- The findings have direct implications for **public health**: while **occasional fish consumption** may not pose immediate threats, **prolonged exposure** could lead to cumulative **non-carcinogenic** and **carcinogenic risks**, particularly from **cadmium and lead**.

  निष्कर्षों का सीधा संबंध **सार्वजनिक स्वास्थ्य** से है: जबकि **कभी-कभार मछली का सेवन** तत्काल खतरा नहीं पैदा कर सकता, लेकिन **लंबे समय तक सेवन** से गैर-कार्सिनोजेनिक और **कार्सिनोजेनिक जोखिम**, विशेषकर **कैडमियम और सीसा (lead)** से, बढ़ सकते हैं।

- The risk depends on both the **amount consumed**, the **frequency of intake**, and the **age of the individual**, Dr. Rajendran said.
  डॉ. राजेंद्रन ने कहा कि जोखिम **सेवन की मात्रा**, **आवृत्ति (frequency)** और **व्यक्ति की आयु** — तीनों पर निर्भर करता है।

- "Based on various risk assessment indices from this study, consuming fish **twice a week**, with a portion size of **250 g per serving**, is considered **safe**," he estimated.
  उन्होंने अनुमान लगाया कि इस अध्ययन के विभिन्न **जोखिम मूल्यांकन सूचकांकों (risk assessment indices)** के आधार पर, **सप्ताह में दो बार**, प्रत्येक बार **250 ग्राम मछली** का सेवन **सुरक्षित** माना जा सकता है।

- Earlier, **Ms. Gupta** and **Dr. Arunachalam** had estimated the health risk posed by heavy metals in **tilapia fish** using **atomic absorption spectroscopy**.
  इससे पहले, **सुश्री गुप्ता** और **डॉ. अरुणाचलम** ने एटॉमिक एब्सॉर्प्शन स्पेक्ट्रोस्कोपी (**atomic absorption spectroscopy**) का उपयोग कर **तिलापिया मछलियों** में भारी धातुओं से उत्पन्न **स्वास्थ्य जोखिमों** का अनुमान लगाया था।

- In **November 2024**, they reported in **Frontiers Public Health** that the **hazard quotient** for **cadmium, cobalt, lead, and chromium** in the fish's **liver**, **cobalt and chromium** in the **gills**, and **cobalt** in the **muscle** "showed a significant health risk from the combined effects of these metals".
  नवंबर 2024 में उन्होंने **फ्रंटियर्स पब्लिक हेल्थ** में रिपोर्ट किया कि मछलियों के **यकृत (liver)** में **कैडमियम, कोबाल्ट, सीसा और क्रोमियम**, गिल्स में **कोबाल्ट और क्रोमियम**, और **मांसपेशियों (muscle)** में **कोबाल्ट** के **हैज़र्ड कोशेंट (hazard quotient)** ने इन धातुओं के संयुक्त प्रभावों से **महत्वपूर्ण स्वास्थ्य जोखिम** दिखाया।

- The potential health risk to humans is mainly due to exposure to **cadmium and chromium**, they added.
  उन्होंने जोड़ा कि मनुष्यों के लिए संभावित स्वास्थ्य जोखिम मुख्य रूप से **कैडमियम और क्रोमियम** के संपर्क में आने से उत्पन्न होता है।

- Like the new study, the researchers advised **moderate fish consumption** to limit the **bioaccumulation** of heavy metals in the body.
  नए अध्ययन की तरह, शोधकर्ताओं ने शरीर में भारी धातुओं के **जैव संचय (bioaccumulation)** को सीमित करने के लिए **मछली के मध्यम सेवन** की सलाह दी।

- "Our study is among the first to provide a thorough, **multi-organ and multi-metal health risk assessment** for tilapia consumers in the **Cauvery basin**, delivering actionable data for consumers, regulators, and health authorities," Ms. Gupta said.
  सुश्री गुप्ता ने कहा, "हमारा अध्ययन **कावेरी बेसिन** में तिलापिया मछली उपभोक्ताओं के लिए एक विस्तृत **बहु-अंग (multi-organ)** और **बहु-धातु (multi-metal) स्वास्थ्य जोखिम मूल्यांकन** प्रदान करने वाले शुरुआती अध्ययनों में से एक है, जो उपभोक्ताओं, नियामकों और स्वास्थ्य प्राधिकरणों के लिए **कारगर डेटा** उपलब्ध कराता है।"

- The new study took these findings further.
  नए अध्ययन ने इन निष्कर्षों को और आगे बढ़ाया।

- "In our publication, we focused on one fish species whose samples we could acquire," Ms. Gupta said. "However, in this new publication, we learn that the same phenomenon of heavy metal accumulation in fish is observed in multiple regional fish species. This broadens the claim that indeed the heavy metal pollution in the Cauvery is a fact."
  सुश्री गुप्ता ने कहा, "हमारे पिछले प्रकाशन में हमने केवल एक मछली प्रजाति पर ध्यान केंद्रित किया था, जिसके नमूने हमें मिल सके। लेकिन इस नए अध्ययन में हमने पाया कि मछलियों में भारी धातु संचय की वही घटना कई स्थानीय मछली प्रजातियों में भी देखी गई। इससे यह दावा और मज़बूत होता है कि वास्तव में **कावेरी नदी में भारी धातु प्रदूषण एक सच्चाई है।**"

- "Evidence that some metals, particularly **cadmium and lead**, pose **carcinogenic and non-carcinogenic risks**, including through **biomagnification** up the **food chain**," she added. "This result agrees with the findings of our study."
  उन्होंने आगे कहा, "यह प्रमाण है कि कुछ धातुएं, विशेषकर **कैडमियम और सीसा (lead)**, **खाद्य श्रृंखला (food chain)** में **जैव आवर्धन (biomagnification)** के माध्यम से **कैंसरकारी (carcinogenic)** और **गैर-कैंसरकारी (non-carcinogenic)** जोखिम पैदा करती हैं। यह परिणाम हमारे अध्ययन के निष्कर्षों से मेल खाता है।"

- Using **US Environment Protection Agency (EPA)** guidelines, the Vellore Institute of Technology researchers found that the **target hazard quotient** for several metals exceeded **1**, which is the threshold for concern, in the **liver, gills**, and sometimes even **muscles**, "indicating real human health risks from regular exposure," Ms. Gupta said.

  अमेरिकी पर्यावरण संरक्षण एजेंसी (EPA) के दिशानिर्देशों के अनुसार, **वेल्लोर इंस्टीट्यूट ऑफ टेक्नोलॉजी** के शोधकर्ताओं ने पाया कि कई धातुओं के लिए **लक्ष्य जोखिम अनुपात (target hazard quotient) 1 से अधिक** था — जो चिंता की सीमा है — और यह **यकृत, गिल्स**, तथा कभी-कभी **मांसपेशियों** में भी पाया गया, जो "**नियमित संपर्क से वास्तविक मानव स्वास्थ्य जोखिमों**" का संकेत देता है।

Scientific basis
वैज्ञानिक आधार

- Dr. Rajendran said his study "exposes gaps in current **environmental management practices** and emphasises the need for continuous monitoring of **sediments, water, and aquatic organisms**, stricter **pollution control**, **policy interventions**, and enhanced **public awareness** to mitigate health risks."

  डॉ. राजेंद्रन ने कहा कि उनका अध्ययन वर्तमान **पर्यावरण प्रबंधन प्रणाली (environmental management practices)** में खामियों को उजागर करता है और **तलछट, जल, तथा जलीय जीवों की निरंतर निगरानी, कठोर प्रदूषण नियंत्रण, नीति हस्तक्षेप**, और **जन-जागरूकता** की आवश्यकता पर ज़ोर देता है ताकि स्वास्थ्य जोखिमों को कम किया जा सके।

- There is an urgent call for **systematic, longitudinal monitoring** of riverine contamination and more stringent regulation of **effluent discharge** into the Cauvery, Ms. Gupta added.

  सुश्री गुप्ता ने जोड़ा कि कावेरी नदी में प्रदूषण नियंत्रण के लिए **संगठित और दीर्घकालिक निगरानी** तथा **अपशिष्ट जल (effluent)** के निष्कासन पर **कड़े नियामक उपायों** की तत्काल आवश्यकता है।

- The new study is especially significant for providing a **contemporary, region-specific health-risk assessment**, offering a **scientific basis** for **local authorities** to design **regulatory** and **public health interventions**, she added.

  उन्होंने कहा कि नया अध्ययन विशेष रूप से महत्वपूर्ण है क्योंकि यह एक **आधुनिक और क्षेत्र-विशिष्ट स्वास्थ्य जोखिम मूल्यांकन** प्रदान करता है, जिससे **स्थानीय प्राधिकरणों** को **नियामक और सार्वजनिक स्वास्थ्य हस्तक्षेपों** को तैयार करने के लिए **वैज्ञानिक आधार** मिलता है।

- **Industrial effluents**, from **textile and electroplating units** operating near the **Erode stretch**, are major contributors to heavy metal contamination. Other sources include **agricultural runoff** from **fertilizers and pesticides**, and **untreated urban wastewater**.

  इरोड क्षेत्र के पास संचालित **वस्त्र (textile)** और **इलेक्ट्रोप्लेटिंग इकाइयों** से निकलने वाले **औद्योगिक अपशिष्ट (industrial effluents)** भारी धातु प्रदूषण के मुख्य स्रोत हैं। अन्य स्रोतों में **उर्वरकों और कीटनाशकों** से होने वाला **कृषि अपवाह (agricultural runoff)** और अनुपचारित शहरी अपशिष्ट जल शामिल हैं।

- There is some **natural contribution**, even at lower levels, due to the presence of **mineralised zones** upstream of the river; they are important sources of **iron** in particular. "However, the elevated and variable levels of **cadmium, chromium, and lead** are highly indicative of **human-driven contamination**," Ms. Gupta said.

  नदी के ऊपरी भाग में **खनिज-समृद्ध क्षेत्रों (mineralised zones)** की उपस्थिति के कारण कुछ **प्राकृतिक योगदान** भी होता है, जो विशेष रूप से **लौह (iron)** का स्रोत हैं। "हालांकि, **कैडमियम, क्रोमियम और सीसा** के बढ़े हुए और परिवर्तनीय स्तर स्पष्ट रूप से **मानवजनित प्रदूषण (human-driven contamination)** का संकेत देते हैं," सुश्री गुप्ता ने कहा।

- There have been similar reports from other rivers in **Tamil Nadu**. Researchers from the **SRM Institute of Science and Technology** in **Kattankulathur**, for example, studied **heavy metal contamination** on surface waters in the **Noyyal river basin** in western Tamil Nadu and reported that **industrial activity** was an important contributor of contaminants.

  तमिलनाडु की अन्य नदियों से भी ऐसे ही रिपोर्ट मिले हैं। उदाहरण के लिए, **कट्टनकुलथुर** स्थित **एसआरएम इंस्टीट्यूट ऑफ साइंस एंड टेक्नोलॉजी** के शोधकर्ताओं ने **पश्चिमी तमिलनाडु की नॉय्यल नदी बेसिन** में **सतही जल (surface waters)** में **भारी धातु प्रदूषण** का अध्ययन किया और पाया कि **औद्योगिक गतिविधियाँ** प्रदूषकों के प्रमुख स्रोत हैं।

Does posture help kangaroos increase speed without burning more energy?

GS III: Ecology

Vasudevan Mukunth

Most animals spend more energy as they move faster. Shorter periods of contact between the foot and the ground require muscles to generate force more quickly, driving up the metabolic cost.

Kangaroos and their relatives (macropods) are exceptions to this rule, however. Classic treadmill studies have shown that red kangaroos and tammar wallabies can hop faster with only a slight increase in oxygen demand, puzzling biomechanics researchers.

Past studies have pointed to their ankle extensor muscle-tendon units, which can store and return elastic energy like springs, but that alone couldn't explain why large macropods don't incur energy costs that other similar quadrupeds do. Attempts to crack the mystery using stride timing or breathing coordination fell short as well and didn't distinguish small from large macropods.

A new study by researchers from Australia, the UK, and the US, reported in *eLife*, may have finally found the answer. The researchers focused on posture, i.e., the combination of joint angles a kangaroo adopts when its foot is on the ground. They found that posture actively modulated the leverage at the ankle and could raise the amount of elastic energy returned as the kangaroo moves faster. If this model is validated, it would mean kangaroos can meet higher mechanical demands without their muscles performing extra work, thus delinking speed from metabolic cost.

The researchers recorded 3D motion and ground forces from 16 red and eastern grey kangaroos hopping at 2-4.5 m/s on force plates. Then they built a scaled musculoskeletal model on a computer to model the joint kinematics,

Posture actively modulates the leverage at the ankle and could raise the amount of elastic energy returned. If this model is validated, it would delink speed from metabolic cost

joint rotations, effective mechanical advantage, ankle work, and Achilles tendon stress.

As they hopped faster, the team found that kangaroos bent their legs more when they slowed down, with the ankle bending upward more and the toes pressing down harder. The Achilles tendon was pulled harder, like stretching a thicker rubber band. Ground forces and the twisting force at the ankle also rose. This geometry allowed the tendon to store more energy when the foot first landed, and return it as the animal pushed off.

Importantly, even though both the 'soaking up' part upon landing and the 'push off' part got bigger at higher speeds, they balance out over each hop. As a result, the ankle's total work per hop stayed roughly constant. Instead, the tendon was doing more of the job, and the muscles didn't have to burn much extra energy.

On the flip side, because kangaroos run their tendons hard, the study warned that there wouldn't be much of a safety margin before something could fail. This, in turn, meant the biomechanics of the kangaroos' hop could limit how big they could get and how sharply they can turn.

The researchers also wrote in their paper that "future work should examine a broader range of body sizes", could assess "tendon stress at fast speeds" – perhaps "with a different experimental or modelling approach ... as kangaroos in enclosures seem unwilling to hop faster over force plates – and also "understand how posture and muscles throughout the whole body contribute to kangaroo energetics".

Does posture help kangaroos increase speed without burning more energy?

क्या मुद्रा (posture) कंगारुओं को अधिक ऊर्जा खर्च किए बिना गति बढ़ाने में मदद करती है?

Kangaroo Hopping and Energy Efficiency
कंगारू की छलांग और ऊर्जा दक्षता

- Most animals spend more energy as they move faster. Shorter periods of contact between the foot and the ground require muscles to generate force more quickly, driving up the metabolic cost.
  अधिकांश जानवर तेजी से चलने पर अधिक ऊर्जा खर्च करते हैं। पैर और जमीन के बीच कम समय का संपर्क मांसपेशियों को अधिक तेजी से बल उत्पन्न करने की आवश्यकता बनाता है, जिससे **मेटाबॉलिक लागत** बढ़ जाती है।

- Kangaroos and their relatives (**macropods**) are exceptions to this rule, however. Classic treadmill studies have shown that **red kangaroos** and **tammar wallabies** can hop faster with only a slight increase in oxygen demand, puzzling biomechanics researchers.
  हालांकि, **कंगारू और उनके रिश्तेदार (मैक्रोपोड्स)** इस नियम के अपवाद हैं। पारंपरिक ट्रेडमिल अध्ययनों से पता चला है कि **रेड कंगारू** और **टामर वालाबी** केवल थोड़ी ऑक्सीजन मांग के साथ तेजी से छलांग लगा सकते हैं, जिससे **बायोमैकेनिक्स शोधकर्ता** चकित हैं।

- Past studies have pointed to their **ankle extensor muscle-tendon units**, which can store and return **elastic energy** like springs, but that alone couldn't explain why large macropods don't incur energy costs that other similar quadrupeds do.
  पिछली अध्ययनों ने उनके **एंकल एक्सटेंसर मसल-टेंडन यूनिट्स** की ओर संकेत किया है, जो स्प्रिंग की तरह **इलास्टिक ऊर्जा** को संग्रहीत और वापस कर सकते हैं, लेकिन यह अकेले यह नहीं समझा सका कि बड़े मैक्रोपोड्स में ऊर्जा की लागत अन्य समान चतुष्पदों की तुलना में कम क्यों है।

- Attempts to crack the mystery using **stride timing** or **breathing coordination** fell short as well and didn't distinguish small from large macropods.
  स्ट्राइड टाइमिंग या **साँसों के समन्वय** का उपयोग करके इस रहस्य को सुलझाने के प्रयास भी असफल रहे और उन्होंने छोटे और बड़े मैक्रोपोड्स के बीच अंतर नहीं किया।

- A new study by researchers from **Australia, the UK, and the US**, reported in **eLife**, may have finally found the answer.
  ऑस्ट्रेलिया, यूके, और यूएस के शोधकर्ताओं द्वारा eLife में प्रकाशित एक नए अध्ययन ने शायद इसका उत्तर खोज लिया है।

- The researchers focused on **posture**, i.e., the combination of **joint angles** a kangaroo adopts when its foot is on the ground. They found that posture actively modulated the **leverage at the ankle** and could raise the amount of **elastic energy returned** as the kangaroo moves faster.
  शोधकर्ताओं ने **पोस्चर (मुद्रा)** पर ध्यान केंद्रित किया, अर्थात जब कंगारू का पैर जमीन पर होता है तब वह **जोड़ों के कोणों** का कौन-सा संयोजन अपनाता है। उन्होंने पाया कि मुद्रा **एंकल लीवरेज** को सक्रिय रूप से नियंत्रित करती है और जैसे-जैसे कंगारू तेज़ चलता है, **वापसी इलास्टिक ऊर्जा** की मात्रा बढ़ सकती है

- If this model is validated, it would mean kangaroos can meet higher **mechanical demands** without their muscles performing extra work, thus delinking **speed** from **metabolic cost**.
  यदि यह मॉडल सत्यापित होता है, तो इसका अर्थ होगा कि कंगारू अपनी मांसपेशियों को अतिरिक्त कार्य किए बिना अधिक **यांत्रिक मांगों** को पूरा कर सकते हैं, जिससे **गति** और **ऊर्जा लागत** का संबंध टूट जाता है।

- The researchers recorded **3D motion** and **ground forces** from **16 red and eastern grey kangaroos** hopping at **2–4.5 m/s** on force plates.
  शोधकर्ताओं ने **16 रेड और ईस्टर्न ग्रे कंगारुओं** की **2–4.5 मीटर प्रति सेकंड** की छलांग के दौरान **3D गति** और **ग्राउंड फोर्सेज** दर्ज कीं।

- Then they built a **scaled musculoskeletal model** on a computer to model the **joint kinematics**, **joint rotations**, **effective mechanical advantage**, **ankle work**, and **Achilles tendon stress**.
  फिर उन्होंने कंप्यूटर पर एक **मस्क्युलोस्केलेटल मॉडल** तैयार किया, ताकि **जोड़ों की गतिशीलता**, **घुमाव**, **यांत्रिक लाभ**, **एंकल कार्य**, और **एकिलीस टेंडन तनाव** का मॉडल तैयार किया जा सके।

- As they hopped faster, the team found that kangaroos bent their legs more when they slowed down, with the ankle bending upward more and the toes pressing down harder.
  जैसे-जैसे वे तेजी से छलांग लगाते गए, टीम ने पाया कि कंगारू जब धीमे होते हैं तो अपने पैरों को अधिक मोड़ते हैं, एंकल ऊपर की ओर झुकता है और पंजे नीचे की ओर ज़्यादा दबाव डालते हैं।

- The **Achilles tendon** was pulled harder, like stretching a thicker rubber band. **Ground forces** and the **twisting force** at the ankle also rose.
  एकिलीस टेंडन को अधिक खींचा गया, जैसे किसी **मोटी रबर बैंड** को फैलाया जा रहा हो। **ग्राउंड फोर्सेज़** और **एंकल पर मोड़ बल** भी बढ़ गया।

- This geometry allowed the tendon to **store more energy** when the foot first landed, and return it as the animal pushed off.
  इस संरचना ने टेंडन को पहली बार पैर के जमीन पर पड़ते ही अधिक **ऊर्जा संग्रहीत** करने और फिर **धक्का देने पर उसे वापस करने** की अनुमति दी।

- Importantly, even though both the 'soaking up' part upon landing and the 'push off' part got bigger at higher speeds, they **balance out** over each hop.
  महत्वपूर्ण रूप से, भले ही **लैंडिंग** और **पुश ऑफ** के हिस्से उच्च गति पर बड़े हो गए, लेकिन वे प्रत्येक छलांग में **संतुलित** रहे।

- As a result, the **ankle's total work per hop** stayed roughly constant. Instead, the **tendon** was doing more of the job, and the **muscles didn't have to burn much extra energy**.
  परिणामस्वरूप, प्रत्येक छलांग पर **एंकल का कुल कार्य** लगभग स्थिर रहा। इसके बजाय, **टेंडन** ने अधिक काम किया और **मांसपेशियों को अतिरिक्त ऊर्जा खर्च नहीं करनी पड़ी**।

- On the flip side, because kangaroos **run their tendons hard**, the study warned that there wouldn't be much of a **safety margin** before something could fail.
  दूसरी ओर, क्योंकि कंगारू अपने **टेंडन पर अधिक दबाव डालते हैं**, अध्ययन ने चेतावनी दी कि किसी विफलता से पहले **सुरक्षा सीमा बहुत कम** है।

- This could limit how big they could get and how sharply they can turn.
  यह यह भी सीमित कर सकता है कि वे कितने बड़े हो सकते हैं और कितनी तेजी से मुड़ सकते हैं।

- The researchers also wrote that "future work should examine a **broader range of body sizes**," assess **tendon stress at fast speeds**, and "understand how posture and muscles throughout the whole body contribute to **kangaroo energetics**."
  शोधकर्ताओं ने यह भी लिखा कि "भविष्य के अध्ययनों को **शरीर के आकारों की व्यापक सीमा** की जांच करनी चाहिए," **तेज़ गति पर टेंडन तनाव** का मूल्यांकन करना चाहिए, और यह समझना चाहिए कि **पूरे शरीर की मुद्रा और मांसपेशियाँ** कंगारू की ऊर्जा प्रणाली में कैसे योगदान देती हैं।"

What method identifies species by sequencing a short, standard stretch of DNA, such as the *COI* gene in animals, and comparing it to a reference library to find a match? It works even with fragments, eggs or larvae when visible features are missing.

Answers to October 28 quiz:
1. Hydrocarbon with carbon atoms bonded at right angles – Ans: Cubane
2. Platinum complex whose cis form is medically useful – Ans: Platin
3. Ring-shaped molecule drawn with a circle inside a ring – Ans: Benzene
4. Aromatic compounds with chirality but no chiral centres – Ans: Helicene
5. Naphthalene isomer with a visible colour yet also aromatic – Ans: Azulene
Visual: **Xylene**
First contact: K.N. Viswanathan | Tamal Biswas | Anmol Agrawal | Stan James | Disha Singh

QUIZ

Cubane

• **Cubane** is a **synthetic hydrocarbon** with the chemical formula C_8H_8.
• Its structure consists of **eight carbon atoms** arranged at the **corners of a cube**, with each carbon atom bonded to **three other carbons** and **one hydrogen atom**.
• The molecule is named **"cubane"** because of its **cube-like geometry**.
• The most unique feature of cubane is that **carbon atoms are bonded at right angles (90°)** instead of the usual tetrahedral angle of 109.5°.
• Cubane is one of the most **strained organic molecules** ever synthesized, yet it is **remarkably stable** under normal conditions.

Applications and Importance of Cubane

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1. High-Energy Materials:
• Due to its high **strain energy**, cubane is a potential candidate for use in **high-energy fuels and explosives**.
• When combusted or decomposed, it releases a large amount of energy.

2. Medicinal Chemistry:
• Cubane can act as a **bioisostere of benzene**, meaning it can replace benzene rings in drugs to change their properties (e.g., solubility, metabolic stability).
• This helps in designing new pharmaceuticals with improved biological activity.

3. Nanotechnology and Molecular Design:
• The **rigid cubic framework** of cubane allows for precise control of spatial arrangement, making it useful in designing **molecular scaffolds** and **nanostructures**.

Why the Right-Angle Bonding is Unique

• In normal hydrocarbons, carbon atoms form **tetrahedral bonds** at angles close to **109.5°**.
• In cubane, these bonds are forced into **90° angles**, causing **huge strain** but still maintaining molecular integrity.
• The successful synthesis of cubane demonstrated that **chemical stability** is not determined only by strain energy, but also by the **absence of accessible reaction pathways** for decomposition.

Cisplatin – A Platinum Complex and Its Medical Importance

• **Cisplatin**, chemically known as **cis-diamminedichloroplatinum(II)**, is one of the most important **platinum-based coordination compounds** used in medicine.
• It is specifically the **cis-form** of the complex that is medically active, while the **trans-form** is inactive and toxic.
• Cisplatin is widely used as a **chemotherapeutic drug** in the treatment of various types of cancers including **testicular, ovarian, bladder, and lung cancers**.

Medical Applications

• **Testicular cancer:** Most effective and has led to cure rates above **90%** in combination therapies.
• **Ovarian cancer:** Used in combination with paclitaxel or carboplatin.
• **Bladder cancer and lung cancer:** Administered as part of multi-drug regimens.
• Also being explored for use in **head and neck cancers**.

Benzene – The Ring-Shaped Aromatic Compound

• **Benzene** is one of the most important **aromatic hydrocarbons** in organic chemistry, represented by a **ring-shaped molecule with a circle inside** to denote **delocalised π-electrons**.
• It is the **simplest aromatic compound**, with the molecular formula C_6H_6, and forms the structural basis for many other aromatic compounds such as toluene, phenol, and aniline.
• The circle drawn inside the hexagonal ring represents **resonance or delocalisation** of electrons — a key feature of aromaticity.

Aromaticity of Benzene

• Benzene exhibits **aromaticity**, a special kind of stability found in cyclic conjugated π-systems.
• According to **Hückel's Rule (4n + 2 π-electrons)**, benzene with **6 π-electrons (n = 1)** is **aromatic**.
• The delocalised electrons circulate around the ring, reducing electron–electron repulsion and making benzene less reactive than alkenes.
• This aromatic stability is reflected in its **heat of hydrogenation**, which is much lower than expected for a structure with three isolated double bonds.

Resonance in Benzene

• Benzene can be represented by two **resonance structures** (Kekulé structures) with alternating single and double bonds.
 • However, the actual structure is a **hybrid** of these two forms.
 • The equal bond lengths and delocalised electron cloud confirm that **no fixed double bonds** exist in benzene — instead, all bonds are equivalent.
 • This concept is symbolised by the **circle inside the hexagon**, representing the **resonance hybrid**.

• **Industrial Applications:**

* Used in manufacturing of **plastics (polystyrene, nylon)**, **synthetic rubber**, **dyes**, **detergents**, and **pesticides**.
   • **Pharmaceuticals:** Used as a precursor for drugs like **aspirin** and **phenacetin**.
   • **Solvent:** Common laboratory and industrial solvent for fats, waxes, resins, and oils.
   • **Note:** Due to toxicity and carcinogenic nature, benzene use as a solvent has been **restricted** in many countries.

Health and Environmental Concerns

• **Benzene is toxic and carcinogenic** (Group 1 carcinogen by WHO and IARC).
 • Chronic exposure can cause **bone marrow suppression**, **anemia**, and **leukemia**.
 • Hence, strict industrial safety regulations and environmental standards limit benzene emissions and workplace exposure.

Helicene – Aromatic Compounds with Chirality but No Chiral Centres

• **Helicenes** are a unique class of **polycyclic aromatic hydrocarbons (PAHs)** that exhibit **chirality** without possessing any **chiral carbon atoms**.
 • Their chirality arises not from asymmetric atoms but from the **helical (spiral-like) arrangement** of multiple aromatic rings fused together in an **ortho-condensed fashion**.
 • This special type of chirality is known as **axial or helical chirality**.

• The general formula of helicenes is $C_{4n+2}H_{2n+4}$, where *n* denotes the number of fused benzene rings.

Applications

• **Optoelectronic Materials:** Helicenes are used in **organic light-emitting diodes (OLEDs)** and **circularly polarised light emitters** due to their chiroptical properties.
 • **Molecular Electronics:** Their helical π-systems enable efficient **charge transport** and **spin-polarisation**.
 • **Asymmetric Catalysis:** Chiral helicenes act as **ligands** and **catalysts** in enantioselective organic reactions.
 • **Sensing and Recognition:** Helicenes can serve as **molecular sensors** for detecting chiral compounds or light polarisation.
 • **Pharmaceutical Design:** Some helicene-based derivatives show potential **anticancer and antibacterial activity**.

India's IT dream is at a crossroads

For nearly three decades, India's Information Technology (IT) sector has been the crown jewel of the country's economic transformation – a symbol of upward mobility, global relevance, and middle-class aspiration. Though the IT industry recruits only about 1% of the Indian workforce, it contributes about 7% of the country's GDP. Young engineers from Tier-II towns once saw a job at Infosys or Tata Consultancy Services (TCS) as a passport to prosperity. But today, that dream is flickering. With TCS announcing its steepest-ever layoffs – nearly 20,000 jobs shed in a single quarter– and other companies quietly following suit, the question arises: Is IT no longer the golden calf for aspiring tech professionals?

Shashi Tharoor

Member of Parliament for the Thiruvananthapuram constituency in the Lok Sabha and Chairman, Parliamentary Standing Committee on External Affairs

A profound metamorphosis

The answer is complex. India's IT sector is not collapsing, but it is undergoing a profound metamorphosis – one that demands urgent attention, strategic recalibration, and a renewed commitment to future-ready skills. The 'Layoff Wave' is a symptom of structural change in the industry. It is happening in the U.S. too: Amazon has announced it would reduce its corporate workforce by 14,000, thanks to deployment of AI. Meta is laying off 8,000. In India, TCS's decision to cut 3.2% of its workforce, primarily targeting mid- and senior-level roles, is not an isolated event: other IT majors are doing similar things. Industry estimates suggest that over 50,000 IT jobs may be lost by the end of the fiscal year. IT insiders say these are not likely to be mass firings in the traditional sense, but 'silent layoffs' – performance-linked exits, voluntary resignations, and delayed promotions that quietly trim the workforce without triggering headlines.

The reasons are manifold. First, AI-driven automation is reshaping the very nature of IT work. Routine tasks – reporting, coordination, basic coding – are increasingly handled by algorithms. The advent of models from companies such as OpenAI and Anthropic, alongside the rise of Agentic AI – autonomous systems capable of reasoning and executing multi-step tasks, is fundamentally disrupting India's IT services sector by automating routine work, drastically improving developer productivity, and shifting the industry's focus towards high-value, AI-driven digital transformation. While AI can never replicate human beings' capacity for empathy or emotion, these tasks do not require such qualities and can be performed without human intervention.

Second, U.S. immigration policies have grown more restrictive, with the hike in H-1B visa fees and tariff threats prompting Indian firms to localise their overseas workforce. Indian IT firms simply cannot pay $100,000 to get a low- or mid-level professional to the U.S. to execute tasks that would not rake in such a level of profit.

Third, client budgets are tightening, especially in the U.S. and Europe, where economic uncertainty has led to cautious IT spending. In short, the outsourcing model that once relied on scale and cost arbitrage is being replaced by one that prizes specialised expertise, lean teams, and AI fluency.

The end of the Assembly line

India's IT sector was built on the back of a simple promise: hire thousands of engineers, train them in basic coding, and deploy them to serve global clients. It was a digital assembly line – efficient, scalable, and profitable. But that model is now – let us be blunt – obsolete.

Today's clients don't want armies of coders; they want solutions. They want cloud-native architectures, cybersecurity frameworks, generative AI integrations. They want fewer people who can do more. And they want them fast. This shift has exposed a skill mismatch in the Indian IT workforce. Many mid-career professionals, promoted for managerial ability rather than technical depth, now find themselves ill-equipped for the new demands. Legacy skills – SAP ECC, mainframes, non-cloud platforms – are less relevant. To take just one example: SAP ECC (SAP ERP Central Component) is the core of SAP's traditional enterprise resource planning (ERP) software suite, the digital backbone that helps large organisations manage their day-to-day business operations across departments. Today AI can replicate the skills needed to operate it. Mastery of that component is no longer such an indispensable asset in an IT professional. The question arises: fine, but what else can you do?

The result is a painful churn: experienced workers being let go, fresh graduates struggling to find entry points, and companies scrambling to retrain their staff. In the face of this rapid technological shift, the government should consider requiring IT companies engaging in mass layoffs to provide a mandatory 6-9 months' salary as a compensation package, offering a crucial safety net for workers suddenly losing their livelihoods and needing to secure new skills for the evolving job market.

And yet, all is not lost for our IT sector. India's tech proficiency still commands global respect. It contributes over $280 billion to the economy, employs nearly 6 million people, and powers digital transformation across industries. But the sheen of guaranteed success – the idea that a tech degree equals a stable career – is fading. For young professionals, the path is no longer linear. A computer science degree is not enough. One must master AI, data science, cloud computing, and cybersecurity – and keep learning. The days of coasting on basic Java or .NET (or even SAP ECC) are over.

From retrenchment to reinvention

So, what can we do? If India wants to retain its IT edge, it must act on multiple fronts. For policymakers, the challenge is to reimagine skilling. India's engineering colleges must overhaul their curricula. Government programmes must incentivise AI literacy, not just digital literacy. And industry must invest in reskilling, not just recruitment.

The first obvious task is AI 'upskilling' on a very large scale. TCS has already upskilled over 550,000 employees in basic AI skills and 100,000 in advanced ones. This must become the norm, not the exception. Public-private partnerships can accelerate this effort.

Along with this, the need for urgent curriculum reform is imperative. Engineering education must move beyond rote coding. Courses in machine learning, ethics in AI, and product thinking should be mainstream. Soft skills – communication, collaboration, critical thinking – are equally vital.

Our startup ecosystem will need greater support from the government and from venture capitalists. India's tech future lies not just in services but in products. Supporting AI startups, deep-tech ventures, and innovation hubs can create new jobs and diversify the sector. The government must engage with global partners to ensure visa access, data sovereignty, and trade stability. Protectionism abroad must be matched with policy clarity at home.

For those laid off or displaced in the current churn, severance pay is not enough. They will need career transition support, mental health resources, and retraining subsidies. The Indian IT industry has never felt the need for social safety nets before, but the time for them is now.

The Indian IT story is not ending – it is evolving. From manpower to mindpower, from outsourcing to innovation, from quantity to quality, this change is challenging but unavoidable. The transition will undoubtedly be painful. But it can also be purposeful.

We must stop measuring success by headcount alone. It is no longer about the number of bright Indians employed in IT. Instead, let us ask: Are we building solutions that matter? Are we empowering workers to thrive in the AI age? Are we telling a story of resilience, reinvention, and relevance? I asked friends in the know if the bloom is off India's IT rose. Their answers suggest that the rose may have lost some petals, but its roots are deep, and its bloom can return – if we nurture, water and fertilise it with vision, skill, and courage. This will need policy leadership. But there is no reason yet to lose hope.

> The Indian IT story is not ending — it is evolving. The transition will undoubtedly be painful. But it can also be purposeful

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India's IT dream is at a crossroads
भारत का आईटी सपना एक चौराहे पर है

Transformation of India's IT Sector
भारत के आईटी क्षेत्र का रूपांतरण

- For nearly **three decades**, India's **Information Technology (IT) sector** has been the **crown jewel** of the country's economic transformation — a symbol of **upward mobility**, **global relevance**, and **middle-class aspiration**.
  लगभग **तीन दशकों** से भारत का **सूचना प्रौद्योगिकी (आईटी) क्षेत्र** देश के आर्थिक परिवर्तन का **मणि** रहा है — जो **सामाजिक प्रगति**, **वैश्विक प्रासंगिकता**, और **मध्यम वर्गीय आकांक्षा** का प्रतीक है।

- Though the IT industry recruits only about **1% of the Indian workforce**, it contributes about **7% of the country's GDP**.
  भले ही आईटी उद्योग केवल **1% भारतीय कार्यबल** को रोजगार देता है, लेकिन यह देश के **जीडीपी का लगभग 7%** योगदान करता है।

- Young engineers from **Tier-II towns** once saw a job at **Infosys** or **Tata Consultancy Services (TCS)** as a passport to prosperity.
  टियर-2 शहरों के युवा इंजीनियर कभी **इंफोसिस** या **टीसीएस** में नौकरी को समृद्धि का पासपोर्ट मानते थे।

- Today, that dream is flickering. With **TCS announcing its steepest-ever layoffs** — nearly **20,000 jobs shed in a single quarter** — and other companies quietly following suit, the question arises: Is IT no longer the golden calf for aspiring tech professionals?
  आज वह सपना **मंद पड़ रहा है**। **टीसीएस** ने **एक तिमाही में लगभग 20,000 नौकरियाँ** घटाने की घोषणा की है, और अन्य कंपनियाँ भी ऐसा ही कर रही हैं। इससे प्रश्न उठता है — क्या आईटी अब **तकनीकी पेशेवरों के लिए स्वर्णिम क्षेत्र** नहीं रहा?

A Profound Metamorphosis
एक गहरा रूपांतरण

- The answer is complex. India's IT sector is not collapsing, but it is undergoing a **profound metamorphosis** demanding **urgent attention**, **strategic recalibration**, and **future-ready skills**.
  इसका उत्तर जटिल है। भारत का आईटी क्षेत्र ढह नहीं रहा है, बल्कि यह एक **गहरे रूपांतरण** से गुजर रहा है, जिसे **तत्काल ध्यान**, **रणनीतिक पुनसर्रेखण**, और **भविष्य-उन्मुख कौशल** की आवश्यकता है।

- The **'Layoff Wave'** is a symptom of **structural change** in the industry.
  'छंटनी लहर' इस उद्योग में **संरचनात्मक परिवर्तन** का संकेत है।

- It is happening in the **U.S.** too — **Amazon** has announced reducing its corporate workforce by **14,000** and **Meta** is laying off **8,000** employees due to **AI deployment**.
  यह **अमेरिका** में भी हो रहा है — **अमेज़न** ने अपने **14,000 कर्मचारियों** को और **मेटा** ने **8,000 कर्मचारियों** को **एआई तकनीक** के चलते हटाने की घोषणा की है।

- In India, **TCS** cut **3.2%** of its workforce, mainly **mid- and senior-level roles**, and other IT majors are doing similar things.
  भारत में, **टीसीएस** ने अपने कार्यबल का **3.2%** घटाया है, विशेष रूप से **मध्य और वरिष्ठ स्तर के पदों** पर, और अन्य प्रमुख आईटी कंपनियाँ भी ऐसा ही कर रही हैं।

- Over **50,000 IT jobs** may be lost by the end of the **fiscal year**, according to industry estimates.
  उद्योग अनुमानों के अनुसार, **वित्तीय वर्ष** के अंत तक **50,000 से अधिक आईटी नौकरियाँ** समाप्त हो सकती हैं।

- These are not **mass firings**, but **'silent layoffs'** — performance-linked exits, voluntary resignations, and delayed promotions reducing workforce quietly.
  यह पारंपरिक अर्थों में **सामूहिक छंटनी** नहीं है, बल्कि **'मौन छंटनी'** है — जिसमें **प्रदर्शन आधारित निकास**, **स्वैच्छिक इस्तीफे**, और **विलंबित पदोन्नतियाँ** शामिल हैं।

Reasons for the Transformation
रूपांतरण के कारण

- **AI-driven automation** is reshaping the very nature of IT work.
  एआई-संचालित स्वचालन आईटी कार्य की प्रकृति को पूरी तरह बदल रहा है।

- **Routine tasks** like **reporting, coordination, and basic coding** are now handled by **algorithms**.
  रिपोर्टिंग, **समन्वय**, और **बुनियादी कोडिंग** जैसे नियमित कार्य अब **एल्गोरिदम** द्वारा किए जा रहे हैं।

- Models by **OpenAI** and **Anthropic**, and the rise of **Agentic AI** — capable of reasoning and executing multi-step tasks — are disrupting India's IT services sector.
  OpenAI और **Anthropic** जैसी कंपनियों के मॉडल तथा **Agentic AI** का उदय — जो **तर्क और बहु-चरणीय कार्य निष्पादन** में सक्षम हैं — भारत के आईटी सेवा क्षेत्र को बदल रहे हैं।

- These technologies are **automating routine work**, **improving developer productivity**, and shifting focus towards **AI-driven digital transformation**.
  ये तकनीकें **नियमित कार्यों का स्वचालन**, **डेवलपर उत्पादकता में वृद्धि**, और **एआई आधारित डिजिटल परिवर्तन** की ओर ध्यान केंद्रित कर रही हैं।

- While **AI** cannot replicate **human empathy** or **emotion**, such tasks don't need these traits and can be done **without human intervention**.

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भले ही **एआई मानवीय सहानुभूति** या **भावनाएँ** दोहरा नहीं सकता, लेकिन इन कार्यों को **मानव हस्तक्षेप के बिना** किया जा सकता है।

- **U.S. immigration policies** have become more restrictive — with **H-1B visa fee hikes** and **tariff threats**, Indian firms are **localising their overseas workforce**.
  अमेरिकी आव्रजन नीतियाँ सख्त हो गई हैं — **H-1B वीज़ा शुल्क वृद्धि** और **टैरिफ खतरों** के कारण भारतीय कंपनियाँ अपने **विदेशी कार्यबल का स्थानीयकरण** कर रही हैं।

- Indian firms can't pay **$100,000** to send mid-level professionals abroad for low-profit tasks.
  भारतीय कंपनियाँ **$100,000** खर्च करके मध्यम स्तर के कर्मचारियों को कम लाभ वाले कार्यों के लिए विदेश नहीं भेज सकतीं।

- **Client budgets** in the **U.S. and Europe** are tightening due to **economic uncertainty**, leading to **cautious IT spending**.
  अमेरिका और यूरोप में **आर्थिक अनिश्चितता** के कारण **ग्राहक बजट** सख्त हो रहे हैं, जिससे **आईटी खर्च में सतर्कता** बढ़ रही है।

- The **outsourcing model** based on **scale and cost advantage** is being replaced by one valuing **specialised expertise**, **lean teams**, and **AI fluency**.
  पैमाने और लागत लाभ पर आधारित **आउटसोर्सिंग मॉडल** को अब **विशेषज्ञता**, **छोटे दलों**, और **एआई दक्षता** वाले मॉडल से बदला जा रहा है।

The End of the Assembly Line
असेंबली लाइन का अंत

- **India's IT sector** was built on the back of a simple promise: hire thousands of engineers, train them in basic coding, and deploy them to serve global clients.
  भारत का आईटी क्षेत्र एक सरल वादे पर बना था: हजारों इंजीनियरों को नियुक्त करना, उन्हें **मूलभूत कोडिंग** में प्रशिक्षित करना, और उन्हें **वैश्विक ग्राहकों की सेवा** के लिए तैनात करना।

- It was a **digital assembly line** — efficient, scalable, and profitable.
  यह एक **डिजिटल असेंबली लाइन** थी — **कुशल**, **विस्तारणीय**, और **लाभदायक**।

- But that model is now — let us be blunt — **obsolete**.
  लेकिन वह मॉडल अब — स्पष्ट रूप से कहें तो — **पुराना (obsolete)** हो चुका है।

- Today's clients don't want **armies of coders**; they want **solutions**.
  आज के ग्राहक **कोडरों की सेनाएँ** नहीं चाहते; वे **समाधान (solutions)** चाहते हैं।

- They want **cloud-native architectures**, **cybersecurity frameworks**, **generative AI integrations**.
  वे **क्लाउड-नेटिव आर्किटेक्चर**, **साइबर सुरक्षा फ्रेमवर्क**, और **जनरेटिव एआई एकीकरण** चाहते हैं।

- They want **fewer people** who can do **more**, and they want them **fast**.
  वे **कम लोगों** से **अधिक कार्य** चाहते हैं, और वह भी **तेजी से**।

- This shift has exposed a **skill mismatch** in the **Indian IT workforce**.
  इस बदलाव ने **भारतीय आईटी कार्यबल** में **कौशल असंगति (skill mismatch)** को उजागर किया है।

- Many **mid-career professionals**, promoted for **managerial ability** rather than **technical depth**, now find themselves **ill-equipped** for the new demands.
  कई **मध्यम-कैरियर पेशेवर**, जिन्हें **तकनीकी गहराई** की बजाय **प्रबंधन कौशल** के लिए पदोन्नत किया गया था, अब **नई मांगों** के लिए **असक्षम** महसूस कर रहे हैं।

- **Legacy skills** — **SAP ECC**, **mainframes**, **non-cloud platforms** — are less relevant.
  पुरानी कौशल (Legacy skills) — जैसे **SAP ECC**, **मेनफ्रेम्स**, **नॉन-क्लाउड प्लेटफॉर्म्स** — अब कम प्रासंगिक हैं।

- To take just one example: **SAP ECC (SAP ERP Central Component)** is the core of **SAP's traditional ERP suite**, which helps large organisations manage daily operations.
  एक उदाहरण लें: **SAP ECC (SAP ERP Central Component) SAP** के **पारंपरिक ERP सूट** का मुख्य भाग है, जो बड़ी संस्थाओं को उनके दैनिक कार्यों के प्रबंधन में मदद करता है।

- Today **AI can replicate** the skills needed to operate it.
  आज **एआई (AI)** उन कौशलों की **नकल (replicate)** कर सकता है जो इसे संचालित करने के लिए आवश्यक थे।

- Mastery of that component is **no longer an indispensable asset** in an IT professional.
  उस घटक में निपुणता अब किसी आईटी पेशेवर के लिए **अनिवार्य संपत्ति नहीं रही**।

- The question arises: **fine, but what else can you do?**
  प्रश्न उठता है: ठीक है, लेकिन अब आप और क्या कर सकते हैं?

- The result is a **painful churn**: experienced workers being let go, fresh graduates struggling to find entry points, and companies scrambling to retrain staff.
  परिणामस्वरूप एक **कठिन उथल-पुथल (painful churn)** देखी जा रही है: अनुभवी कर्मचारियों को निकाला जा रहा है, नए स्नातक **प्रवेश अवसरों** के लिए संघर्ष कर रहे हैं, और कंपनियाँ अपने स्टाफ को **पुनः प्रशिक्षित** करने में जुटी हैं।

- In the face of this **rapid technological shift**, the **government** should consider requiring IT companies engaging in **mass layoffs** to provide a **mandatory 6–9 months' salary** as compensation.
  इस **तेजी से बदलते तकनीकी माहौल** में, **सरकार** को विचार करना चाहिए कि **सामूहिक छंटनी (mass layoffs)** करने वाली आईटी कंपनियों को **6–9 महीनों का अनिवार्य वेतन मुआवजा** देना पड़े।

- This would offer a **safety net** for workers losing livelihoods and needing to **secure new skills**.
  इससे अपनी **नौकरी खोने वाले कर्मचारियों** को एक **सुरक्षा जाल (safety net)** मिलेगा और वे **नई कौशल** हासिल कर पाएँगे।

- And yet, all is not lost for our **IT sector**.
  फिर भी, हमारे **आईटी क्षेत्र** के लिए सब कुछ खत्म नहीं हुआ है।

- India's tech proficiency still commands **global respect**.
  भारत की **तकनीकी दक्षता** अब भी **वैश्विक सम्मान** प्राप्त करती है।

- It contributes over **$280 billion** to the economy, employs nearly **6 million people**, and powers **digital transformation** across industries.
  यह अर्थव्यवस्था में **$280 बिलियन से अधिक** का योगदान देता है, लगभग **60 लाख लोगों** को रोजगार प्रदान करता है, और विभिन्न उद्योगों में **डिजिटल परिवर्तन** को बढ़ावा देता है।

- But the **sheen of guaranteed success** — the idea that a tech degree equals a stable career — is **fading**.
  लेकिन **निश्चित सफलता की चमक** — यानी तकनीकी डिग्री का मतलब स्थिर करियर — अब **मंद पड़ रही है।**

- For young professionals, the path is **no longer linear**.
  युवाओं के लिए अब करियर का रास्ता **सरल या रैखिक नहीं** रहा।

- A **computer science degree** is not enough.
  केवल **कंप्यूटर साइंस की डिग्री** अब पर्याप्त नहीं है।

- One must master **AI, data science, cloud computing, and cybersecurity** — and keep learning.
  व्यक्ति को **एआई, डेटा साइंस, क्लाउड कंप्यूटिंग, और साइबर सुरक्षा** में निपुण होना चाहिए — और **लगातार सीखते रहना चाहिए।**

- The days of coasting on **basic Java or .NET (or even SAP ECC)** are over.
  बेसिक जावा, .NET, या SAP ECC के सहारे करियर चलाने के दिन अब **समाप्त हो चुके हैं।**

From Retrenchment to Reinvention
छंटनी से पुनराविष्कार तक

- If India wants to **retain its IT edge**, it must act on **multiple fronts**.
  यदि भारत अपने **आईटी लाभ (IT edge)** को बनाए रखना चाहता है, तो उसे **कई स्तरों पर कार्य** करना होगा।

- For **policymakers**, the challenge is to **reimagine skilling**.
  नीति निर्माताओं के लिए चुनौती यह है कि वे **कौशल विकास (skilling)** को नए सिरे से परिभाषित करें।

- India's **engineering colleges** must overhaul their **curricula**.
  भारत के **इंजीनियरिंग कॉलेजों** को अपने **पाठ्यक्रमों (curricula)** में **बड़े बदलाव** करने होंगे।

- Government programmes must **incentivise AI literacy**, not just digital literacy.
  सरकारी कार्यक्रमों को केवल **डिजिटल साक्षरता** नहीं, बल्कि **एआई साक्षरता** को भी **प्रोत्साहन** देना चाहिए।

- Industry must invest in **reskilling**, not just **recruitment**.
  उद्योग को केवल **भर्ती (recruitment)** पर नहीं, बल्कि **पुनः कौशल विकास (reskilling)** पर निवेश करना चाहिए।

- The first obvious task is **AI upskilling** on a **very large scale**.
  पहला स्पष्ट कदम होना चाहिए **एआई अपस्किलिंग (AI upskilling)** को **बहुत बड़े पैमाने** पर लागू करना।

- **TCS** has already **upskilled over 550,000 employees** in basic AI skills and **100,000 in advanced ones**.
  टीसीएस पहले ही **5.5 लाख कर्मचारियों** को **बेसिक एआई कौशल** और **1 लाख को उन्नत एआई कौशल** में प्रशिक्षित कर चुका है।
- This must become the **norm, not the exception**.
  यह अब **अपवाद नहीं, बल्कि सामान्य मानक (norm)** बनना चाहिए।
- **Public-private partnerships** can accelerate this effort.
  सार्वजनिक-निजी साझेदारी (PPP) इस प्रयास को **तेज़ी से आगे बढ़ा सकती है।**
- Along with this, **urgent curriculum reform** is imperative.
  इसके साथ ही, **तत्काल पाठ्यक्रम सुधार (curriculum reform)** आवश्यक है।
- **Engineering education** must move beyond **rote coding**.
  इंजीनियरिंग शिक्षा को केवल **रटने वाली कोडिंग (rote coding)** से आगे बढ़ना होगा।
- Courses in **machine learning, ethics in AI, and product thinking** should be mainstream.
  मशीन लर्निंग, एआई नैतिकता (ethics), और उत्पाद सोच (product thinking) जैसे विषयों को **मुख्यधारा में** लाना चाहिए।
- **Soft skills** — communication, collaboration, and critical thinking — are equally vital.
  सॉफ्ट स्किल्स — जैसे संचार, सहयोग, और आलोचनात्मक सोच — भी उतने ही आवश्यक हैं।
- India's **startup ecosystem** will need **greater support** from **government** and **venture capitalists**.
  भारत के **स्टार्टअप इकोसिस्टम** को **सरकार** और **वेंचर कैपिटलिस्ट्स** से **अधिक समर्थन** की आवश्यकता होगी।
- India's tech future lies not just in **services**, but in **products**.
  भारत का तकनीकी भविष्य केवल **सेवाओं (services)** में नहीं, बल्कि **उत्पादों (products)** में है।
- Supporting **AI startups, deep-tech ventures, and innovation hubs** can create **new jobs** and **diversify the sector**.
  एआई स्टार्टअप्स, डीप-टेक उपक्रमों, और नवाचार हब्स को समर्थन देने से **नई नौकरियाँ** बनेंगी और क्षेत्र में **विविधता** आएगी।
- The government must engage with **global partners** to ensure **visa access, data sovereignty, and trade stability**.
  सरकार को **वैश्विक साझेदारों** के साथ मिलकर **वीजा पहुँच, डेटा संप्रभुता**, और **व्यापार स्थिरता** सुनिश्चित करनी चाहिए।
- **Protectionism abroad** must be matched with **policy clarity at home**.
  विदेशी संरक्षणवाद (Protectionism) का मुकाबला **घरेलू नीति की स्पष्टता (policy clarity)** से करना होगा।
- For those **laid off or displaced**, **severance pay** is not enough.
  जो **कर्मचारी निकाले गए या विस्थापित हुए**, उनके लिए केवल **सेवरेंस पे (severance pay)** पर्याप्त नहीं है।
- They will need **career transition support, mental health resources, and retraining subsidies**.
  उन्हें **करियर ट्रांजिशन सहायता, मानसिक स्वास्थ्य संसाधन**, और **पुनः प्रशिक्षण अनुदान** की आवश्यकता होगी।
- The Indian IT industry has never felt the need for **social safety nets** before, but **the time for them is now**.
  भारतीय आईटी उद्योग ने पहले कभी **सामाजिक सुरक्षा जाल (social safety nets)** की आवश्यकता महसूस नहीं की, लेकिन **अब समय आ गया है।**
- The **Indian IT story** is not ending — it is **evolving**.
  भारतीय आईटी कहानी समाप्त नहीं हो रही — यह **विकसित हो रही है।**
- From **manpower to mindpower**, from **outsourcing to innovation**, from **quantity to quality**, this change is **challenging but unavoidable**.
  मानव शक्ति से बौद्धिक शक्ति, आउटसोर्सिंग से नवाचार, और **संख्या से गुणवत्ता** की ओर यह परिवर्तन **चुनौतीपूर्ण लेकिन अपरिहार्य** है।
- The transition will be **painful**, but it can also be **purposeful**.
  यह परिवर्तन **कष्टदायक** होगा, लेकिन **सार्थक (purposeful)** भी हो सकता है।
- We must stop measuring success by **headcount alone**.
  हमें सफलता को केवल **कर्मचारियों की संख्या (headcount)** से नहीं मापना चाहिए।

- Instead, we must ask: Are we **building solutions that matter**? Are we **empowering workers** for the **AI age**?
  इसके बजाय हमें पूछना चाहिए: क्या हम **महत्वपूर्ण समाधान बना रहे हैं**? क्या हम **एआई युग** के लिए **कर्मचारियों को सशक्त** कर रहे हैं?

- The **rose of India's IT** may have lost some petals, but its **roots are deep**, and its **bloom can return** — if we **nurture it with vision, skill, and courage**.
  भारत की आईटी गुलाब ने कुछ **पंखुड़ियाँ खोई** हैं, लेकिन इसकी **जड़ें गहरी** हैं, और यह **फिर से खिल सकता है** — यदि हम इसे **दृष्टि, कौशल, और साहस** से पोषित करें।

- This will need **policy leadership**, but there is **no reason to lose hope**.
  इसके लिए **नीतिगत नेतृत्व** की आवश्यकता होगी, लेकिन **आशा खोने का कोई कारण नहीं है**।

A Kerala story

Eradicating poverty should be seen as a never-ending task

GS III: Economy: Poverty

Kerala, known for its exemplary record in social and human development, and for healthcare systems comparable to those of developed nations, achieved another milestone on its 69th formation day, on November 1 – the eradication of extreme poverty. This resulted from a four-year, meticulously planned programme involving a gamut of agencies, spearheaded by the local self-government department, alongside extensive community participation. It was during the first Cabinet meeting of the second LDF government led by Pinarayi Vijayan in May 2021 that the Extreme Poverty Eradication Programme (EPEP) was launched. Successive State governments deserve credit for Kerala's people-centric development and decentralised planning, which ensured that poverty reduced from 59.8% in 1973-74 to 11.3% in 2011-12. NITI Aayog's National Multidimensional Poverty Index (2023) stated that Kerala was the least impoverished State, based on the headcount ratio. Just 0.55% of Kerala's population was multidimensionally poor – far below the national average of 14.96%. Instead of relying on self-enrolment, the government deployed nearly 4 lakh trained enumerators, supported by a robust local body system and Kudumbashree workers, to identify the abjectly poor. After several levels of vetting, 64,006 extremely poor families – comprising 1,03,099 individuals, many lacking basic documents – were identified based on the four-point criteria of access to food, health, means of livelihood, and housing. A uniform solution was inadequate for such diverse needs, necessitating an experiment in welfare governance: the preparation of custom-made micro plans for each identified family and the provision of essential support such as identification documents, housing, livelihoods, regular medicine, cooked meals, palliative care and, in some cases, organ transplants.

Combating poverty is a never-ending task and criticism of the claim of erasing extreme poverty – particularly regarding the plight of the tribal population – is inescapable. The State government has launched EPEP 2.0 to prevent relapse and to ensure that no new household falls into extreme poverty. The LDF has pledged to tackle all forms of poverty in mission mode. Critics of the 'Kerala Model' have often cited stagnant growth and rising unemployment as evidence of its perceived failure. The State has accelerated major infrastructure projects and high-tech green industries to bridge the deficit in these areas. It has also been skilling the educated to alleviate joblessness. The EPEP shows that progressive governance can be rooted in welfarism and growth simultaneously, without compromising social safety or sustainability. The largely community-driven model may not be flawless, but it is self-evolving and strengthens democracy at the grassroots. It presents an alternative development paradigm – a Kerala story worth propagating.

A Kerala story
एक केरल की कहानी

- **Eradicating poverty** should be seen as a **never-ending task**.
  गरीबी उन्मूलन को एक **कभी न समाप्त होने वाला कार्य (never-ending task)** माना जाना चाहिए।

Kerala Eradicates Extreme Poverty
केरल ने अत्यधिक गरीबी का उन्मूलन किया

- **Kerala**, known for its exemplary record in **social and human development**, and for **healthcare systems** comparable to those of **developed nations**, achieved another **milestone on its 69th formation day (November 1)** — the **eradication of extreme poverty**.
  केरल, जो अपने **सामाजिक और मानव विकास** के उत्कृष्ट रिकॉर्ड और **विकसित देशों जैसे स्वास्थ्य प्रणाली** के लिए जाना जाता है, ने अपने **69वें स्थापना दिवस (1 नवंबर)** पर एक और **महत्वपूर्ण उपलब्धि** हासिल की — **अत्यधिक गरीबी का उन्मूलन**।

- This resulted from a **four-year, meticulously planned programme** involving a gamut of agencies, spearheaded by the **local self-government department**, alongside **extensive community participation**.
  यह उपलब्धि **चार साल के सावधानीपूर्वक योजनाबद्ध कार्यक्रम** का परिणाम थी, जिसमें कई एजेंसियां शामिल थीं और जिसका नेतृत्व **स्थानीय स्वशासन विभाग** ने किया, साथ ही **व्यापक सामुदायिक भागीदारी** भी रही।

- It was during the **first Cabinet meeting of the second LDF government** led by **Pinarayi Vijayan** in **May 2021** that the **Extreme Poverty Eradication Programme (EPEP)** was launched.
  मई 2021 में **पिनाराई विजयन** के नेतृत्व में **दूसरी एलडीएफ सरकार की पहली कैबिनेट बैठक** के दौरान **अत्यधिक गरीबी उन्मूलन कार्यक्रम (EPEP)** शुरू किया गया था।

- **Successive State governments** deserve credit for Kerala's **people-centric development** and **decentralised planning**, which ensured that poverty reduced from **59.8% in 1973–74** to **11.3% in 2011–12**.
  केरल के **जन-केंद्रित विकास** और **विकेन्द्रीकृत योजना** के लिए **लगातार राज्य सरकारें** श्रेय की पात्र हैं, जिसने गरीबी को **1973–74 में 59.8%** से घटाकर **2011–12 में 11.3%** कर दिया।

- **NITI Aayog's National Multidimensional Poverty Index (2023)** stated that Kerala was the **least impoverished State**, with only **0.55%** of its population being **multidimensionally poor**, far below the **national average of 14.96%**.
  नीति आयोग के राष्ट्रीय बहुआयामी गरीबी सूचकांक (2023) के अनुसार, केरल **सबसे कम गरीब राज्य** था, जहां केवल **0.55% आबादी बहुआयामी रूप से गरीब** थी, जो **राष्ट्रीय औसत 14.96%** से काफी कम है।

- Instead of relying on **self-enrolment**, the government deployed **nearly 4 lakh trained enumerators**, supported by a **robust local body system** and **Kudumbashree workers**, to identify the **abjectly poor**.
  स्वयं पंजीकरण पर निर्भर रहने के बजाय, सरकार ने **लगभग 4 लाख प्रशिक्षित गणनाकारों** को नियुक्त किया, जिन्हें **मजबूत स्थानीय निकाय प्रणाली** और **कुडुंबश्री कार्यकर्ताओं** का सहयोग मिला, ताकि **अत्यंत गरीबों** की पहचान की जा सके।

- After several levels of vetting, **64,006 extremely poor families** — comprising **1,03,099 individuals**, many lacking basic documents — were identified based on **four-point criteria**: **food, health, livelihood, and housing**.
  कई चरणों की जांच के बाद, **64,006 अत्यंत गरीब परिवारों** — जिनमें **1,03,099 व्यक्ति** शामिल थे और

जिनमें से कई के पास **मूल दस्तावेज नहीं थे** — की पहचान **चार मानदंडों (खाद्य, स्वास्थ्य, आजीविका और आवास)** के आधार पर की गई।

- A **uniform solution** was inadequate for such diverse needs, necessitating an experiment in **welfare governance**: preparation of **custom-made micro plans** for each identified family and provision of support like **identification documents, housing, livelihoods, medicines, cooked meals, palliative care**, and even **organ transplants**.

  इतनी विविध आवश्यकताओं के लिए एक **समान समाधान अपर्याप्त** था, जिससे **कल्याण शासन में प्रयोग** की आवश्यकता पड़ी — प्रत्येक परिवार के लिए **विशेष रूप से तैयार माइक्रो योजनाएं** बनाना और उन्हें **पहचान दस्तावेज, आवास, आजीविका, दवाएं, पका हुआ भोजन, उपशामक देखभाल**, और कुछ मामलों में **अंग प्रत्यारोपण** जैसी सहायता प्रदान करना।

- Combating poverty is a **never-ending task**, and criticism of the claim of **erasing extreme poverty** — particularly regarding the **tribal population** — is inescapable.

  गरीबी से लड़ना एक **निरंतर प्रक्रिया** है, और **अत्यधिक गरीबी मिटाने के दावे** की आलोचना — विशेष रूप से **जनजातीय आबादी** के संदर्भ में — अपरिहार्य है।

- The State government has launched **EPEP 2.0** to prevent **relapse** and to ensure that **no new household falls into extreme poverty**.

  राज्य सरकार ने **EPEP 2.0** शुरू किया है ताकि **गरीबी की पुनरावृत्ति** को रोका जा सके और यह सुनिश्चित किया जा सके कि **कोई नया परिवार अत्यधिक गरीबी में न गिरे**

- The LDF has pledged to tackle **all forms of poverty in mission mode**.

  एलडीएफ ने **सभी प्रकार की गरीबी** को मिशन मोड में समाप्त करने का संकल्प लिया है।

- Critics of the **'Kerala Model'** have often cited **stagnant growth** and **rising unemployment** as evidence of its **perceived failure**.

  'केरल मॉडल' के आलोचक अक्सर इसके **ठहरे हुए विकास** और **बढ़ती बेरोजगारी** को इसकी **कथित विफलता** का प्रमाण बताते हैं।

- The State has **accelerated major infrastructure projects** and **high-tech green industries** to bridge this **deficit**, and has been **skilling the educated** to alleviate **joblessness**.

  राज्य ने इस **घाटे को पाटने** के लिए **प्रमुख बुनियादी ढांचा परियोजनाओं** और **हाई-टेक हरित उद्योगों** को तेज किया है, साथ ही **शिक्षित युवाओं को कौशल प्रशिक्षण** देकर **बेरोजगारी को कम करने** का प्रयास किया है।

- The **EPEP** shows that **progressive governance** can be rooted in **welfarism and growth simultaneously**, without compromising **social safety or sustainability**.

  EPEP यह दिखाता है कि **प्रगतिशील शासन** को **कल्याणवाद और विकास** दोनों पर आधारित किया जा सकता है, बिना **सामाजिक सुरक्षा या स्थिरता** से समझौता किए।

- The **community-driven model** may not be flawless, but it is **self-evolving** and **strengthens democracy at the grassroots**.

  यह **सामुदायिक-आधारित मॉडल** भले ही पूर्ण न हो, लेकिन यह **स्व-विकसित** है और **जमीनी स्तर पर लोकतंत्र को मजबूत** करता है।

- It presents an **alternative development paradigm** — a **Kerala story worth propagating**.

  यह एक **वैकल्पिक विकास मॉडल** प्रस्तुत करता है — एक **केरल की कहानी जो प्रचार योग्य है।**

New pathways to end extreme poverty

Kerala's participatory model offers lessons for the world

GS III: Inclusive Growth

STATE OF PLAY

Jiju P. Alex

The Extreme Poverty Eradication Programme (EPEP), by the Government of Kerala, has redefined the notion of State interventions aimed at alleviating poverty, and it has the potential to evolve into a global model.

Most importantly, it highlights a new approach to identifying and addressing deprivation. Apart from nearly achieving the first and second Sustainable Development Goals (SDGs), it also demonstrates how poverty can be eliminated in a participatory manner by involving local governments, the community and development agencies, with consistent follow-up.

Kerala's approach to poverty reduction differed from the country's traditional poverty alleviation programmes. The long-enacted policies for land reforms, universal primary education, and public distribution would have a lasting impact on the livelihood security of its people.

Furthermore, democratic decentralisation enabled local governments to implement numerous local-level projects. Along with this, Kudumbashree emerged as a pioneering model of the self-help group (SHG) networks in India, particularly for its scale and approach to poverty eradication and women's empowerment.

The incidence of poverty in the State was 59.74% in 1973-74, which reduced to 11.3% in 2011-12. According to the NITI Aayog, Kerala is now the least impoverished State, with a Multidimensional Poverty Index (MPI) of 0.55 per cent in 2019-21, a decrease from 0.70% in 2015-16. Despite this achievement, there were still islands of extreme poverty in the State, which required customised assistance, based on a deeper understanding of its causes.

Following the MPI framework, the factors contributing to extreme poverty were identified through a participatory process. Poor health conditions, disability, old age, a lack of entitlements, food, land, shelter, employment, facilities, and Severe Acute Malnutrition (SAM) in children were considered severe distress factors. The historical deprivation of the marginalised sectors of society, such as SC, ST, and fishermen and the social deprivation of HIV-affected persons, orphans, urban poor, and the LGBTQIA, were also identified.

Impoverished households were selected through surveys conducted by a team of volunteers from Kudumbashree, people's representatives, officials, and residents, led by the local governments.

Around 1,18,309 poor households were scrutinised through a participatory nomination process from wards and divisions, from which 87,158 were shortlisted as recommended by the local governments. Subsequently, they were interviewed using a mobile application, and a priority list of 73,747 households was prepared. The Grama Sabhas further scrutinised this priority list for another round of eliminating ineligible households, resulting in the final list of 64,006 extremely poor families.

The most innovative feature of EPEP is the creation of customised micro-plans for each identified household, moving away from a one-size-fits-all welfare model. The programme unfolded in three distinct stages: the immediate care plan, the intermediate plan, and the long-term plan.

While the immediate care plan addressed urgent requirements such as food, medical care, and entitlement documents for social security, the intermediate plan focused on providing transitional support to improve living conditions and ensure self-reliance, like temporary housing. The long-term plans focused on establishing livelihoods or securing permanent shelter, among other objectives. The process was monitored by a Management Information System (MIS) to ensure timely delivery and accountability.

The EPEP has unequivocally demonstrated a plausible and highly effective pathway to eradicate extreme poverty by using the principles of multidimensional poverty and leveraging decentralised governance. What next?

Sustaining this effort warrants continuous monitoring to ensure that these households do not return to extreme poverty. The current system of interdepartmental coordination offers immense potential for detecting early warning signals of deprivation from vulnerable households. A dedicated institutional mechanism is required to sustain this achievement and showcase this model as a lasting solution.

The author is a member of Kerala State Planning Board

New Pathways to End Extreme Poverty
अत्यधिक गरीबी समाप्त करने के नए मार्ग

Extreme Poverty Eradication Programme (EPEP)
अत्यधिक गरीबी उन्मूलन कार्यक्रम (EPEP)

- The **Extreme Poverty Eradication Programme (EPEP)**, by the **Government of Kerala**, has redefined the notion of State interventions aimed at alleviating poverty, and it has the potential to evolve into a global model.
  केरल सरकार द्वारा शुरू किया गया **अत्यधिक गरीबी उन्मूलन कार्यक्रम (EPEP)** गरीबी को कम करने के लिए राज्य के हस्तक्षेपों की अवधारणा को पुनर्परिभाषित करता है, और इसमें एक **वैश्विक मॉडल** बनने की क्षमता है।

- Most importantly, it highlights a **new approach** to identifying and addressing deprivation.
  सबसे महत्वपूर्ण रूप से, यह अभाव की पहचान और समाधान के लिए एक **नए दृष्टिकोण** को उजागर करता है।

- Apart from nearly achieving the **first and second Sustainable Development Goals (SDGs)**, it also demonstrates how poverty can be eliminated in a **participatory manner** by involving **local governments, the community, and development agencies**, with consistent follow-up.
  पहले और दूसरे सतत विकास लक्ष्यों (SDGs) को लगभग प्राप्त करने के अलावा, यह यह भी दर्शाता है कि **स्थानीय सरकारों, समुदायों और विकास एजेंसियों** को शामिल करके और **लगातार निगरानी** के माध्यम से गरीबी को **सहभागी तरीके से** कैसे समाप्त किया जा सकता है।

- **Kerala's approach** to poverty reduction differed from the country's **traditional poverty alleviation programmes**.
  गरीबी उन्मूलन के प्रति **केरल का दृष्टिकोण** देश के **पारंपरिक गरीबी उन्मूलन कार्यक्रमों** से अलग था।

- The long-enacted policies for **land reforms, universal primary education**, and **public distribution** would have a lasting impact on the **livelihood security** of its people.
  भूमि सुधार, सार्वभौमिक प्राथमिक शिक्षा, और **सार्वजनिक वितरण प्रणाली** से संबंधित दीर्घकालिक नीतियों का लोगों की **जीविका सुरक्षा** पर स्थायी प्रभाव पड़ा।

- Furthermore, **democratic decentralisation** enabled **local governments** to implement numerous **local-level projects**.
  इसके अलावा, **लोकतांत्रिक विकेंद्रीकरण** ने स्थानीय सरकारों को कई **स्थानीय स्तर की परियोजनाओं** को लागू करने में सक्षम बनाया।

- Along with this, **Kudumbashree** emerged as a **pioneering model of Self-Help Group (SHG) networks** in India, particularly for its scale and approach to **poverty eradication and women's empowerment**.
  इसके साथ ही, **कुडुंबश्री** भारत में **स्वयं सहायता समूह (SHG)** नेटवर्क का एक **अग्रणी मॉडल** बनकर उभरा, विशेष रूप से अपने **गरीबी उन्मूलन और महिला सशक्तिकरण** के पैमाने और दृष्टिकोण के लिए।

- The incidence of poverty in the State was **59.74% in 1973-74**, which reduced to **11.3% in 2011-12**.
  राज्य में गरीबी की दर **1973-74 में 59.74%** थी, जो घटकर **2011-12 में 11.3%** रह गई।

- According to the **NITI Aayog**, Kerala is now the **least impoverished State**, with a **Multidimensional Poverty Index (MPI)** of **0.55% in 2019-21**, a decrease from **0.70% in 2015-16**.
  नीति आयोग के अनुसार, केरल अब **सबसे कम गरीब राज्य** है, जिसका **बहुआयामी गरीबी सूचकांक (MPI) 2019-21 में 0.55%** है, जो **2015-16 के 0.70%** से कम हुआ है।

- Despite this achievement, there were still **islands of extreme poverty** in the State, which required **customised assistance**, based on a deeper understanding of its causes.
  इस उपलब्धि के बावजूद, राज्य में अभी भी **अत्यधिक गरीबी के द्वीप** मौजूद थे, जिन्हें उनके कारणों की गहन समझ के आधार पर **विशेष रूप से तैयार सहायता** की आवश्यकता थी।

- Following the **MPI framework**, the factors contributing to **extreme poverty** were identified through a **participatory process**.
  MPI ढांचे का अनुसरण करते हुए, **अत्यधिक गरीबी** में योगदान देने वाले कारकों की पहचान **सहभागी प्रक्रिया** के माध्यम से की गई।

- **Poor health conditions, disability, old age, lack of entitlements, food, land, shelter, employment, facilities**, and **Severe Acute Malnutrition (SAM)** in children were considered **severe distress factors**.
  खराब स्वास्थ्य स्थिति, विकलांगता, वृद्धावस्था, अधिकारों की कमी, भोजन, भूमि, आश्रय, रोजगार, सुविधाओं की कमी, और बच्चों में **गंभीर तीव्र कुपोषण (SAM)** को गंभीर संकट कारक माना गया।

- The **historical deprivation** of the marginalised sectors of society, such as **SC, ST, and fishermen**, and the **social deprivation** of **HIV-affected persons, orphans, urban poor**, and the **LGBTQIA community**, were also identified.

  समाज के हाशिए पर मौजूद वर्गों जैसे **अनुसूचित जाति (SC), अनुसूचित जनजाति (ST), और मछुआरे समुदाय** की ऐतिहासिक वंचना, तथा **HIV प्रभावित व्यक्ति, अनाथ, शहरी गरीब, और LGBTQIA समुदाय** की **सामाजिक वंचना** को भी पहचाना गया।

Extreme Poverty Eradication Project (EPEP)
अत्यंत गरीबी उन्मूलन परियोजना (EPEP)

- **Impoverished households** were selected through surveys conducted by a team of volunteers from **Kudumbashree**, people's representatives, officials, and residents, led by the local governments.

  गरीब परिवारों का चयन **कुडुंबश्री**, जन प्रतिनिधियों, अधिकारियों और निवासियों की टीम द्वारा स्थानीय सरकारों के नेतृत्व में किए गए सर्वेक्षणों के माध्यम से किया गया।

- Around **1,18,309 poor households** were scrutinised through a **participatory nomination process** from wards and divisions, from which **87,158 were shortlisted** as recommended by the local governments.

  लगभग **1,18,309 गरीब परिवारों** की **भागीदारी आधारित नामांकन प्रक्रिया** के माध्यम से जांच की गई, जिनमें से **87,158 परिवारों** को स्थानीय सरकारों की सिफारिश पर **शॉर्टलिस्ट** किया गया।

- Subsequently, they were interviewed using a **mobile application**, and a **priority list of 73,747 households** was prepared.

  इसके बाद, उन्हें **मोबाइल एप्लिकेशन** के माध्यम से साक्षात्कार किया गया और **73,747 परिवारों** की एक **प्राथमिकता सूची** तैयार की गई।

- The **Grama Sabhas** further scrutinised this priority list for another round of eliminating ineligible households, resulting in the **final list of 64,006 extremely poor families**.

  ग्राम सभाओं ने इस प्राथमिकता सूची की आगे जांच की और अयोग्य परिवारों को हटाने के बाद **64,006 अत्यंत गरीब परिवारों** की **अंतिम सूची** तैयार की।

- The most **innovative feature** of EPEP is the creation of **customised micro-plans** for each identified household, moving away from a **one-size-fits-all welfare model**.

  EPEP की सबसे **नवोन्मेषी विशेषता** प्रत्येक चिन्हित परिवार के लिए **अनुकूलित सूक्ष्म योजनाओं** का निर्माण है, जो **एकसमान कल्याण मॉडल** से अलग है।

- The programme unfolded in **three distinct stages**: the **immediate care plan**, the **intermediate plan**, and the **long-term plan**.

  यह कार्यक्रम **तीन अलग-अलग चरणों** में चला: **तत्काल देखभाल योजना, मध्यवर्ती योजना,** और **दीर्घकालिक योजना।**

- The **immediate care plan** addressed **urgent requirements** such as **food, medical care, and entitlement documents** for social security.

  तत्काल देखभाल योजना ने **खाद्य, चिकित्सा देखभाल,** और **सामाजिक सुरक्षा के लिए अधिकार दस्तावेजों** जैसी **तत्काल आवश्यकताओं** को संबोधित किया।

- The **intermediate plan** focused on providing **transitional support** to improve **living conditions** and ensure **self-reliance**, like **temporary housing**.

  मध्यवर्ती योजना का उद्देश्य **जीवन स्थितियों** में सुधार और **आत्मनिर्भरता** सुनिश्चित करने हेतु **संक्रमणकालीन सहायता** प्रदान करना था, जैसे **अस्थायी आवास।**

- The **long-term plans** focused on establishing **livelihoods** or securing **permanent shelter**, among other objectives.

  दीर्घकालिक योजनाओं का फोकस **जीविकोपार्जन स्थापित करने** या **स्थायी आवास सुनिश्चित करने** जैसे अन्य उद्देश्यों पर था।

- The process was **monitored by a Management Information System (MIS)** to ensure **timely delivery** and **accountability**.

  इस प्रक्रिया की निगरानी **प्रबंधन सूचना प्रणाली (MIS)** द्वारा की गई ताकि **समय पर वितरण** और **जवाबदेही** सुनिश्चित हो सके।

- The **EPEP has demonstrated** a plausible and highly **effective pathway** to **eradicate extreme poverty** by using the principles of **multidimensional poverty** and leveraging **decentralised governance**.

EPEP ने **बहुआयामी गरीबी** के सिद्धांतों और **विकेंद्रीकृत शासन** का उपयोग करके **अत्यंत गरीबी को समाप्त करने** का एक **संभाव्य और अत्यंत प्रभावी मार्ग** प्रदर्शित किया है।

- **Sustaining this effort** warrants continuous monitoring to ensure that these households do not return to extreme poverty.
  इस प्रयास को **सतत बनाए रखना** आवश्यक है ताकि ये परिवार फिर से **अत्यंत गरीबी** में न लौटें।

- The current system of **interdepartmental coordination** offers immense potential for detecting **early warning signals of deprivation** from vulnerable households.
  वर्तमान **अंतर-विभागीय समन्वय प्रणाली** में **कमजोर परिवारों से वंचना के प्रारंभिक संकेतों** का पता लगाने की अत्यधिक क्षमता है।

- A **dedicated institutional mechanism** is required to **sustain this achievement** and **showcase this model** as a **lasting solution**.
  इस उपलब्धि को **सतत बनाए रखने** और इस मॉडल को एक **स्थायी समाधान** के रूप में **प्रदर्शित करने** के लिए एक **समर्पित संस्थागत तंत्र** आवश्यक है।

NEWS IN NUMBERS

Estimated yield of India's bioeconomy sector by 2030

GS III: Bioeconomy

300 in $ billion. India's bioeconomy sector, encompassing agriculture, forestry, fisheries, and aquaculture, is projected to reach $300 billion by 2030, as per a NITI Aayog report. The report offers tailored solutions to the challenges faced by smallholders. PTI

Estimated yield of India's bioeconomy sector by 2030
2030 तक भारत के जैव-अर्थव्यवस्था क्षेत्र का अनुमानित उत्पादन

- **300 in $ billion.**
  300 अरब डॉलर।

- **India's bioeconomy sector**, encompassing **agriculture, forestry, fisheries, and aquaculture**, is projected to reach **$300 billion by 2030**, as per a **NITI Aayog report.**
  भारत का **जैव-अर्थव्यवस्था क्षेत्र**, जिसमें **कृषि, वानिकी, मत्स्य पालन और जलीय कृषि** शामिल हैं, **नीति आयोग की रिपोर्ट** के अनुसार **2030 तक 300 अरब डॉलर** तक पहुंचने का अनुमान है।

- The **report offers tailored solutions** to the **challenges faced by smallholders.**
  यह **रिपोर्ट छोटे किसानों द्वारा झेली जा रही चुनौतियों** के लिए **विशिष्ट समाधान प्रदान करती है।**

The decline in white collar hiring in India last month

GS III: Economy

9 in per cent. India's white-collar hiring activity eased in October as the Diwali-Dussehra festive cluster temporarily slowed recruitment momentum. The hiring data for the IT sector revealed that the emerging technologies sub-sector registered a 60% year-on-year growth. **PTI**

The decline in white collar hiring in India last month
पिछले महीने भारत में श्वेत कॉलर नियुक्तियों में गिरावट

- **9 in per cent.**
  9 प्रतिशत।
- **India's white-collar hiring activity** eased in **October** as the **Diwali-Dussehra festive cluster** temporarily **slowed recruitment momentum.**
  भारत में श्वेत कॉलर नियुक्ति गतिविधि अक्टूबर में कम हो गई क्योंकि दिवाली-दशहरा त्योहारों के समूह ने अस्थायी रूप से **भर्ती की गति को** धीमा कर दिया।
- The **hiring data for the IT sector** revealed that the **emerging technologies sub-sector** registered a **60% year-on-year growth.**
  आईटी क्षेत्र के नियुक्ति आंकड़ों से पता चला कि **उभरती प्रौद्योगिकियों के उप-क्षेत्र** ने वर्ष-दर-वर्ष 60% वृद्धि दर्ज की।

Has cloud seeding been effective?

How does the process work? How does it aim to settle the build of smog and particulate matter in the air? When did India first experiment with cloud seeding? What was the Cloud Aerosol Interaction and Precipitation Enhancement Experiment? Have the recent trials in Delhi been successful?

GS III: S&T

EXPLAINER

Jacob Koshy

The story so far:
For the first time in nearly 50 years, Delhi conducted two cloud seeding trials with the Indian Institute of Technology Kanpur (IITK) last week. The aim was to induce rain over Delhi to settle the build of smog and particulate matter that had deteriorated the air quality.

What is cloud seeding?
Cloud seeding involves spraying a salt mixture into clouds. The science is that such seeding, which is done by aircraft fitted with flares that fire the salt mixture into clouds, can induce ice or water vapour within the clouds to form water droplets. When lots of such droplets coalesce, they can pour down as rain.

What has been its history?
Cloud seeding has been around for at least three quarters of a century with mixed success. Beginning in the 1940s, General Electric scientists William Schaefer and Bernard Vonnegut chanced upon the principle of using dry ice to form ice crystals in their lab freezer. They then decided to experiment on real clouds. It was reported that they successfully made it snow over Pittsfield in Massachusetts, U.S. This got the U.S. government excited and a formal programme called Project Cirrus was born. While creating rain was certainly on the back of their minds, the big excitement was the prospect of taming hurricanes, which did not pan out well. In the 1950s and 60s, the use of cloud seeding as a weather modification tool became popular. The Soviets seeded clouds over Leningrad to protect May Day parades – years before China used cloud seeding for clear skies ahead of the inaugural ceremony of the Olympics in 2008. The U.S. launched Project Skywater, dumping silver iodide from planes over the Rockies.

What has India's experience been?
Nearly coincident with Project Cirrus, S.K. Banerji, the first Indian Director General of the India Meteorological Department (IMD), oversaw the first cloud seeding experiments in Kolkata by releasing salt and silver iodide in hydrogen balloons in 1952. Most of these were administered as rockets that were fired from the ground. And while these experiments seemed to suggest that on the days when seeding was done, there was more rain compared to days when there was no seeding, it wasn't verifiable if the rain was due to natural sources or from the seeding. There was even an attempt to conduct such seeding in Delhi in 1962 but it failed.
It's only from the 1970s that researchers properly started to use planes and fly to the top of the clouds to spray salt solutions. They also studied cloud physics, condensation, what kind of clouds gave rain, which ones didn't, and so on. Several States, when grappling with drought, have experimented with cloud seeding. The results have been sporadic and there was never any systematic way to tell how much rain could reasonably be expected if a certain amount of salt mixture was scattered. There was also less clarity on where exactly one could expect rain. The cost-benefit also was not clear, given that hiring aircraft, pilots, technical personnel and making salt mixtures was expensive.

What was the CAIPEEX?
Initiated by the Pune-based Indian Institute of Tropical Meteorology in 2009, Cloud Aerosol Interaction and Precipitation Enhancement Experiment (CAIPEEX) was a systematic scientific investigation to quantify if there were any benefits from cloud seeding. For that it actually studied the interior world of clouds, its physics, and water droplet formation for nearly a decade after which from 2017-2019 they physically identified, using radar and other instruments, clouds that were suitable for seeding.
This experiment was conducted over a drought prone region called Solapur, Maharashtra, and hence a natural test ground to measure enhancement (if there was any). Once the clouds were identified they flew aircraft and fired flares of calcium chloride (no silver iodide used) into some clouds and left others 'unseeded.' Their overall finding was that Solapur got an extra 867 million litres of water – which is considerable. In terms of rainfall measured on the ground: seeded clouds gave an average 46% more rain at the seeded locations relative to the unseeded ones.
Over a 100 square km area downwind, there was 18% more rain in the seed versus unseeded.

What happened in Delhi?
There were two flights on October 28 when IIT Kanpur flew its own plane and flared clouds. The results were disappointing with no rainfall triggered, though researchers at IITK said that some parts of Delhi reported a 'light drizzle' and a 'small improvement' in air quality. The drawback was the quality of clouds. The CAIPEEX demonstrated that only monsoon clouds which had a certain quantity of moisture could hope to yield sufficient water. Such clouds are absent in the post-monsoon over Delhi.
For seven years, there have been various proposals for seeding over Delhi that have been discouraged by scientists due to the winter atmospheric characteristics. IIT Kanpur has however said that it will continue 'trials' during this season.

For a better sky: A view of the aircraft after the second trial of cloud seeding in Delhi, on October 28. ANI

THE GIST

▼ Cloud seeding has been around for at least three quarters of a century with mixed success.

▼ Cloud seeding involves spraying a salt mixture into clouds. The science is that such seeding, which is done by aircraft fitted with flares that fire the salt mixture into clouds, can induce ice or water vapour within the clouds to form water droplets.

▼ There were two flights on October 28 when IIT Kanpur flew its own plane and flared clouds. The results were disappointing with no rainfall triggered.

Has cloud seeding been effective?
क्या क्लाउड सीडिंग प्रभावी रही है?

Cloud Seeding in Delhi
दिल्ली में बादल बीजारोपण (Cloud Seeding)

- For the **first time in nearly 50 years**, Delhi conducted **two cloud seeding trials** with the **Indian Institute of Technology Kanpur (IITK)** last week.
  लगभग **50 वर्षों में पहली बार**, दिल्ली ने पिछले सप्ताह **भारतीय प्रौद्योगिकी संस्थान कानपुर (IITK)** के साथ **दो बादल बीजारोपण परीक्षण (cloud seeding trials)** किए।
- The aim was to **induce rain over Delhi** to settle the **smog and particulate matter** that had **deteriorated the air quality**.
  इसका उद्देश्य **दिल्ली में वर्षा उत्पन्न करना** था ताकि **धुंध और कण पदार्थ (particulate matter)** को कम करके **वायु गुणवत्ता में सुधार** किया जा सके।

What is Cloud Seeding?
बादल बीजारोपण क्या है?

- Cloud seeding involves **spraying a salt mixture into clouds**.
  बादल बीजारोपण में **बादलों में नमक मिश्रण का छिड़काव** किया जाता है।
- The science is that such seeding, done by **aircraft fitted with flares** that fire the **salt mixture into clouds**, can induce **ice or water vapour** within the clouds to form **water droplets**.
  इसका वैज्ञानिक सिद्धांत यह है कि **फ्लेयर लगे विमानों द्वारा नमक मिश्रण को बादलों में दागने** से उनमें **बर्फ या जल वाष्प** बनकर **जल की बूंदों में परिवर्तित** हो सकता है।
- When many such droplets **coalesce**, they can **pour down as rain**.
  जब ऐसी कई बूंदें **आपस में मिल जाती हैं**, तो वे **वर्षा के रूप में गिर सकती हैं।**

What has been its History?
इसका इतिहास क्या रहा है?

- Cloud seeding has been around for **at least three quarters of a century** with **mixed success**.
  बादल बीजारोपण की प्रक्रिया **लगभग 75 वर्षों (तीन चौथाई सदी)** से चली आ रही है, जिसके परिणाम **मिश्रित सफलता** वाले रहे हैं।
- Beginning in the **1940s**, **General Electric scientists William Schaefer and Bernard Vonnegut** discovered the principle of using **dry ice to form ice crystals** in their lab freezer.
  1940 के दशक में, जनरल इलेक्ट्रिक के वैज्ञानिक **विलियम शेफ़र और बर्नार्ड वॉननेगट** ने प्रयोगशाला में **ड्राई आइस से बर्फ के क्रिस्टल बनाने के सिद्धांत** की खोज की।
- They then experimented on real clouds and reportedly **made it snow over Pittsfield, Massachusetts, U.S.**
  इसके बाद उन्होंने वास्तविक बादलों पर प्रयोग किया और बताया गया कि उन्होंने **यू.एस. के मैसाचुसेट्स स्थित पिट्सफील्ड में बर्फबारी करवाई।**
- This led to the **U.S. government launching Project Cirrus**, aimed at taming hurricanes, though it **did not succeed**.
  इससे **अमेरिकी सरकार ने "प्रोजेक्ट सिरस" (Project Cirrus)** नामक कार्यक्रम शुरू किया, जिसका उद्देश्य **तूफानों को नियंत्रित करना** था, लेकिन यह **सफल नहीं हुआ।**
- In the **1950s and 60s**, cloud seeding became popular as a **weather modification tool**.
  1950 और 1960 के दशक में बादल बीजारोपण एक **मौसम संशोधन तकनीक** के रूप में लोकप्रिय हुआ।
- The **Soviets** used it over **Leningrad** to protect **May Day parades**, years before **China used cloud seeding for clear skies** during the **2008 Olympics**.

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सोवियत संघ ने इसे **लेनिनग्राद** में **मई डे परेड** की रक्षा के लिए इस्तेमाल किया, जो **2008 ओलंपिक से कई साल पहले था**, जब चीन ने साफ आसमान के लिए cloud seeding का उपयोग किया

- The **U.S. also launched Project Skywater**, dumping **silver iodide** from planes over the **Rockies**.
  संयुक्त राज्य अमेरिका ने "प्रोजेक्ट स्काइवाटर" (Project Skywater) भी शुरू किया, जिसमें **रॉकी पर्वतों के ऊपर विमानों से सिल्वर आयोडाइड** छोड़ा गया।

What has India's Experience been?
भारत का अनुभव क्या रहा है?

- Around the same time as Project Cirrus, **S.K. Banerji**, the **first Indian Director General of IMD (India Meteorological Department)**, conducted **India's first cloud seeding experiments in Kolkata in 1952** using **salt and silver iodide in hydrogen balloons**.
  प्रोजेक्ट सिरस के समय ही, **एस.के. बनर्जी**, जो **भारतीय मौसम विज्ञान विभाग (IMD)** के प्रथम महानिदेशक थे, ने **1952 में कोलकाता में** भारत का पहला cloud seeding प्रयोग किया, जिसमें **हाइड्रोजन गुब्बारों में नमक और सिल्वर आयोडाइड** छोड़ा गया

- Most experiments were done using **rockets fired from the ground**.
  अधिकांश प्रयोग **भूमि से छोड़े गए रॉकेटों** द्वारा किए गए थे।

- On days when seeding was done, **rainfall appeared higher**, but it was **not verifiable** whether the rain was due to seeding or natural causes.
  जिन दिनों बीजारोपण किया गया, उन दिनों **वर्षा अधिक दिखाई दी**, लेकिन यह **सत्यापित नहीं किया जा सका** कि वर्षा **बीजारोपण के कारण हुई या प्राकृतिक रूप से**।

- There was even an attempt to **conduct seeding in Delhi in 1962**, but it **failed**.
  1962 में दिल्ली में cloud seeding करने का प्रयास भी किया गया था, लेकिन यह **असफल रहा।**

- From the **1970s**, researchers started to **use aircraft to fly to the top of clouds** to spray **salt solutions**, and also studied **cloud physics and condensation processes**.
  1970 के दशक से वैज्ञानिकों ने **विमानों द्वारा बादलों के शीर्ष तक उड़ान भरकर नमक के घोल का छिड़काव** शुरू किया और **बादल भौतिकी (cloud physics)** और **संघनन प्रक्रियाओं** का अध्ययन किया।

- Several **Indian States** experimented with cloud seeding during **drought years**, but results were **sporadic** and there was **no systematic method** to estimate rainfall outcomes.
  कई **भारतीय राज्यों** ने सूखे के वर्षों में cloud seeding प्रयोग किए, लेकिन परिणाम **अनियमित** रहे और वर्षा का सटीक अनुमान लगाने की कोई व्यवस्थित विधि नहीं थी।

- There was also **uncertainty on where and how much rain would occur**, and **cost-benefit analysis** remained unclear due to **high expenses** on **aircraft, pilots, and salt mixtures**.
  यह भी **स्पष्ट नहीं था कि वर्षा कहाँ और कितनी होगी**, और **लागत-लाभ विश्लेषण (cost-benefit analysis)** भी अस्पष्ट रहा क्योंकि **विमानों, पायलटों और नमक मिश्रणों** की लागत बहुत अधिक थी।

Cloud Aerosol Interaction and Precipitation Enhancement Experiment (CAIPEEX)
बादल एयरोसोल परस्पर क्रिया और वर्षा संवर्धन प्रयोग (CAIPEEX)

- **Initiated by** the **Pune-based Indian Institute of Tropical Meteorology (IITM)** in **2009**, CAIPEEX was a systematic **scientific investigation** to quantify if there were any **benefits from cloud seeding**.
  पुणे स्थित भारतीय उष्णकटिबंधीय मौसम विज्ञान संस्थान (IITM) द्वारा 2009 में शुरू किया गया **CAIPEEX** एक व्यवस्थित **वैज्ञानिक अनुसंधान** था जिसका उद्देश्य यह मापना था कि **क्लाउड सीडिंग से कोई लाभ होता है या नहीं।**

- For that, it actually studied the **interior world of clouds**, their **physics**, and **water droplet formation** for nearly **a decade** after which, from **2017–2019**, they physically identified, using **radar and other instruments**, clouds that were **suitable for seeding**.
  इसके लिए, इसने लगभग **एक दशक** तक **बादलों के आंतरिक स्वरूप**, उनकी **भौतिकी**, और **जल-बूंद निर्माण** का अध्ययन किया। इसके बाद **2017–2019** के दौरान **रडार और अन्य उपकरणों** की मदद से उन बादलों की पहचान की गई जो सीडिंग के लिए उपयुक्त थे।

- This experiment was conducted over a **drought-prone region called Solapur, Maharashtra**, which was a **natural test ground** to measure enhancement (if there was any).

यह प्रयोग **महाराष्ट्र के सूखा-प्रवण क्षेत्र सोलापुर** में किया गया, जो संवर्धन (यदि हुआ हो) को मापने के लिए एक **प्राकृतिक परीक्षण क्षेत्र** था।

- Once the clouds were identified, they **flew aircraft** and **fired flares of calcium chloride** (no silver iodide used) into some clouds and left others **'unseeded.'**
  बादलों की पहचान के बाद, वैज्ञानिकों ने **विमान उड़ाकर कुछ बादलों में कैल्शियम क्लोराइड के फ्लेयर दागे** (कोई सिल्वर आयोडाइड इस्तेमाल नहीं किया गया) और कुछ बादलों को **'अनसीडेड'** छोड़ा।

- Their overall finding was that **Solapur got an extra 867 million litres of water**, which is **considerable**.
  उनके कुल निष्कर्षों के अनुसार, **सोलापुर को अतिरिक्त 867 मिलियन लीटर पानी** प्राप्त हुआ — जो कि **काफी महत्वपूर्ण** है।

- In terms of rainfall measured on the ground, **seeded clouds gave an average 46% more rain** at the seeded locations relative to the unseeded ones.
  जमीन पर मापी गई वर्षा के अनुसार, **सीडेड बादलों ने अनसीडेड बादलों की तुलना में औसतन 46% अधिक वर्षा** दी।

- Over a **100 square km area downwind**, there was **18% more rain** in the seeded versus unseeded.
  100 वर्ग किमी डाउनविंड क्षेत्र में सीडेड क्षेत्रों में **18% अधिक वर्षा** दर्ज की गई।

What happened in Delhi?
दिल्ली में क्या हुआ?

- There were **two flights on October 28** when **IIT Kanpur** flew its own plane and **flared clouds**.
  28 अक्टूबर को **IIT कानपुर** ने अपना विमान उड़ाकर **बादलों में फ्लेयर छोड़े**।

- The results were **disappointing**, with **no rainfall triggered**, though researchers at IITK said that **some parts of Delhi** reported a **'light drizzle'** and a **'small improvement'** in air quality.
  परिणाम **निराशाजनक** रहे क्योंकि **कोई वर्षा नहीं हुई**, हालांकि **IIT कानपुर** के शोधकर्ताओं ने बताया कि **दिल्ली के कुछ हिस्सों** में **'हल्की बूंदाबांदी'** और **'वायु गुणवत्ता में थोड़ा सुधार'** दर्ज किया गया।

- The drawback was the **quality of clouds**. The CAIPEEX demonstrated that only **monsoon clouds** with a **certain quantity of moisture** could yield sufficient water.
  समस्या **बादलों की गुणवत्ता** की थी। **CAIPEEX** ने दिखाया कि केवल **मानसूनी बादल**, जिनमें **पर्याप्त नमी** हो, वही पर्याप्त पानी प्रदान कर सकते हैं।

- Such clouds are **absent in the post-monsoon season** over **Delhi**.
  ऐसे बादल **दिल्ली में मानसून के बाद के मौसम** में **अनुपस्थित** रहते हैं।

- For **seven years**, there have been **various proposals** for **seeding over Delhi**, but scientists have **discouraged** them due to **winter atmospheric characteristics**.
  पिछले **सात वर्षों** से **दिल्ली में क्लाउड सीडिंग** के लिए **कई प्रस्ताव** आए हैं, लेकिन वैज्ञानिकों ने **सर्दियों की वायुमंडलीय स्थितियों** के कारण इन्हें **हतोत्साहित** किया है।

- **IIT Kanpur**, however, has said that it will **continue trials** during this season.
  हालांकि, **IIT कानपुर** ने कहा है कि वह इस मौसम में **परीक्षण जारी रखेगा**।