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THE HINDU NEWSPAPER

26 APRIL 2026

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PCS

GS I: History

Muni Narayana Prasad, head of Narayana Gurukula, dies

Renowned scholar Swami Muni Narayana Prasad, head of the Narayana Gurukula in Varkala of Kerala, passed away on Friday. He was 87 years old and was suffering from heart-related ailments. A highly respected figure in the lineage of Sree Narayana Guru, Muni Narayana Prasad began his association with the Narayana Gurukula movement in 1955 and became the third individual to head Narayana Gurukula in 1999. He won the Kerala Sahitya Akademi award twice – in 2015 and 2018, and the nation honoured him with the Padma Shri in 2024.

and became the third individual to head Narayana Gurukula in 1999.

श्री नारायण गुरु की परंपरा में एक अत्यंत सम्मानित व्यक्तित्व, मुनि नारायण प्रसाद ने 1955 में नारायण गुरुकुल आंदोलन से अपना जुड़ाव शुरू किया और 1999 में नारायण गुरुकुल के तीसरे प्रमुख बने।

- He won the Kerala Sahitya Akademi award twice — in 2015 and 2018, and the nation honoured him with the Padma Shri in 2024.

उन्होंने केरल साहित्य अकादमी पुरस्कार दो बार — 2015 और 2018 में जीता, और देश ने उन्हें 2024 में पद्म श्री से सम्मानित किया।

26A. Muni Narayana Prasad, head of Narayana Gurukula, dies

नारायण गुरुकुल के प्रमुख मुनि नारायण प्रसाद का निधन

- Renowned scholar Swami Muni Narayana Prasad, head of the Narayana Gurukula in Varkala of Kerala, passed away on Friday.

प्रसिद्ध विद्वान स्वामी मुनि नारायण प्रसाद, जो केरल के वर्कला स्थित नारायण गुरुकुल के प्रमुख थे, का शुक्रवार को निधन हो गया।

- A highly respected figure in the lineage of Sree Narayana Guru, Muni Narayana Prasad began his association with the Narayana Gurukula movement in 1955

It was unwarranted to quote me: ex-Army chief Naravane A global film headlined by an Assam-born actor finds a spot at Guadalajara fete

PCS
The Hindu Bureau
GUWAHATI

A British-produced and Portuguese-directed film with an Assam-born actor in the lead role was screened at the 41st Guadalajara International Film Festival in Mexico on Friday.

A Teacher's Gift was part of the Premio Maguey section, one of the festival's prominent competitive strands, regarded as one of the leading cinematic events in Central and Latin America.

Directed by Artur Ribeiro of Portugal and produced by Eric Ollerenshaw of the U.K., the film features an ensemble cast, including Anjali Patil, Dhruv Sehgal, and Varun Buddhadev. Rajdeep Choudhury, born in Silchar in southern Assam, is the lead actor and writer of the film.

Increasing visibility

Mr. Choudhury has previously appeared in Hindi films such as *Jack & Dil* and *Mister Mummy*. His journey from Northeast India to the U.K. adds a personal



A still from the film *A Teacher's Gift*. SPECIAL ARRANGEMENT

dimension to the film's growing global presence, reflecting the increasing visibility of regional voices in contemporary cinema.

Before its selection in Guadalajara, *A Teacher's Gift* built a steady presence across the international festival circuit, with official selections at Tribeca Film Festival Lisboa, the International Film Festival of India, and the IRIS Prize Film Festival. It won the Best British Asian Feature Film of Bridging Cultures in the U.K. Asian Film Festival in London 2025.

A Teacher's Gift has been selected for the Unrestricted View Film Festival

at a BIFA-qualifying festival, making it eligible for consideration at the British Independent Film Awards, 2026. In addition, it was included in the WAVES Bazaar film market, connecting it with industry professionals and expanding its reach within global networks.

"Bringing *A Teacher's Gift* to an international audience at Guadalajara is a deeply meaningful moment for me. The story is rooted in personal experiences, and to see it travel across cultures and connect with diverse audiences is both humbling and encouraging," Mr. Choudhury said.

26A. It was unwarranted to quote me: ex-Army chief Naravane

मुझे उद्धृत करना अनावश्यक था: पूर्व सेना प्रमुख नरवणे

- Former Army chief General Manoj Naravane has come out with two books since his unpublished memoir, *Four Stars of Destiny*, caused a controversy earlier this year and looking back, he said it was "not warranted" to unnecessarily quote and drag him into the limelight.

पूर्व सेना प्रमुख जनरल मनोज नरवणे ने अपनी अप्रकाशित आत्मकथा फोर स्टार्स ऑफ डेस्टिनी से इस वर्ष की शुरुआत में हुए विवाद के बाद दो किताबें प्रकाशित की हैं और पीछे मुड़कर देखते हुए उन्होंने कहा कि उन्हें अनावश्यक रूप से उद्धृत करना और सुर्खियों में लाना "उचित नहीं था"।



26A. A global film headlined by an Assam-born actor finds a spot at Guadalajara fete

असम में जन्मे अभिनेता द्वारा अभिनीत एक वैश्विक फिल्म को ग्वाडलाहारा उत्सव में स्थान मिला

- A **British-produced** and **Portuguese-directed** film with an **Assam-born actor** in the lead role was screened at the **41st Guadalajara International Film Festival** in **Mexico** on Friday. एक ब्रिटेन निर्मित और पुर्तगाली निर्देशित फिल्म, जिसमें एक असम में जन्मे अभिनेता मुख्य भूमिका में हैं, को शुक्रवार को मेक्सिको में आयोजित 41वें ग्वाडलाहारा अंतर्राष्ट्रीय फिल्म महोत्सव में प्रदर्शित किया गया।
- **A Teacher's Gift** was part of the **Premio Maguey** section, one of the festival's prominent competitive strands, regarded as one of the leading cinematic events in **Central and Latin America**.
A **Teacher's Gift** फिल्म प्रेमियो मागुए सेक्शन का हिस्सा थी, जो महोत्सव की प्रमुख प्रतिस्पर्धात्मक श्रेणियों में से एक है और मध्य एवं लैटिन अमेरिका के प्रमुख सिनेमाई आयोजनों में गिनी जाती है।
- Directed by **Artur Ribeiro** of Portugal and produced by **Eric Ollershaw** of the U.K., the film features an ensemble cast, including **Anjali Patil**, **Dhruv Sehgal**, and **Varun Buddhadev**. पुर्तगाल के आर्तुर रिबेरो द्वारा निर्देशित और यू.के. के एरिक ओलरेशॉ द्वारा निर्मित इस फिल्म में अंजलि पाटिल, ध्रुव सहगल, और वरुण बुद्धदेव सहित कई कलाकार हैं।
- **Rajdeep Choudhury**, born in **Silchar** in southern Assam, is the lead actor and writer of the film.
राजदीप चौधरी, जिनका जन्म दक्षिणी असम के सिलचर में हुआ, इस फिल्म के मुख्य अभिनेता और लेखक हैं।
- Before its selection in **Guadalajara**, **A Teacher's Gift** built a steady presence across the **international festival circuit**, with official selections at **Tribeca Film Festival Lisboa**, the **International Film Festival of India**, and the **IRIS Prize Film Festival**.
ग्वाडलाहारा में चयन से पहले, **A Teacher's Gift** ने अंतर्राष्ट्रीय फिल्म महोत्सवों में अपनी मजबूत उपस्थिति दर्ज कराई, जिसमें ट्रिबेका फिल्म फेस्टिवल लिस्बन, भारत अंतर्राष्ट्रीय फिल्म महोत्सव, और आईरिस प्राइज फिल्म फेस्टिवल शामिल हैं।
- It won the **Best British Asian Feature Film of Bridging Cultures** in the **U.K. Asian Film Festival in London 2025**.
इसने लंदन 2025 में आयोजित यू.के. एशियन फिल्म फेस्टिवल में ब्रिजिंग कल्चर्स श्रेणी में सर्वश्रेष्ठ ब्रिटिश एशियन फीचर फिल्म का पुरस्कार जीता।

Back to the roots

Far from the influence of urban life, Kurma Gramam in Andhra Pradesh embraces a simple way of living, guided by age-old practices and traditions aimed at sustainability



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Kurma Gramam, a serene village in Srikakulam district of Andhra Pradesh, offers a compelling portrait of a self-sustained and tradition-oriented way of life. Far from the influence of urban life, the village embraces a simple way of living, guided by age-old practices and traditions aimed at sustainability. Daily life in the village follows a structured and mindful routine. The day begins in the early hours with prayers in a dedicated hall illuminated by the gentle glow of castor oil lamps, creating a peaceful and spiritual atmosphere. This is followed by a group yoga practice, where villagers, including children, join to improve physical well-being and mental discipline. Education is imparted through a traditional gurukulam, where children are taught Vedic texts, scriptures, and languages such as Sanskrit and Telugu, ensuring the preservation of ancient knowledge and values. A striking feature of the village is its strong sense of self-reliance. Houses are constructed by

the residents themselves using natural materials such as mud, clay, and wood. Kitchens are equipped with traditional firewood stoves for cooking, while garments are woven locally on handlooms rather than sourced from outside. Water is manually drawn from wells, and everyday tasks are carried out with a deep connection to nature. Community living lies at the heart of Kurma Gramam. Collective food preparation in social kitchens and the practice of serving meals to visitors highlight the village's spirit of cooperation and hospitality. The village attracts nearly 400 visitors every weekend, drawn by its unique lifestyle. The village stands as a model of simplicity, discipline, and cultural continuity. Agriculture forms the backbone of the community, with residents cultivating their own crops and relying largely on locally available resources for sustenance. As evening sets in, devotional rituals, music, and prayer bring the community together once again. (Text by Harish Gilat)



The hearth that feeds: Wood-fired stoves are used for cooking in the self-sustained village.



26A. Back to the roots

जड़ों की ओर वापसी

- Far from the influence of **urban life**, **Kurma Gramam in Andhra Pradesh** embraces a simple way of living, guided by **age-old practices and traditions** aimed at **sustainability**.
शहरी जीवन के प्रभाव से दूर, आंध्र प्रदेश का कुर्मा ग्रामम एक सरल जीवनशैली अपनाता है, जो प्राचीन परंपराओं और प्रथाओं द्वारा निर्देशित है और सततता पर केंद्रित है।
- **Kurma Gramam**, a serene village in **Srikakulam district of Andhra Pradesh**, offers a compelling portrait of a **self-sustained** and **tradition-oriented** way of life.
कुर्मा ग्रामम, आंध्र प्रदेश के श्रीकाकुलम जिले का एक शांत गांव, आत्मनिर्भर और परंपरा-आधारित जीवनशैली की एक प्रभावशाली तस्वीर प्रस्तुत करता है।
- Far from the influence of urban life, the village embraces a simple way of living, guided by age-old practices and traditions aimed at sustainability.
शहरी जीवन के प्रभाव से दूर, यह गांव एक सरल जीवनशैली अपनाता है, जो प्राचीन परंपराओं और सततता पर आधारित है।
- Daily life in the village follows a **structured and mindful routine**.
गांव का दैनिक जीवन एक संगठित और सजग दिनचर्या का पालन करता है।
- The day begins in the early hours with **prayers** in a dedicated hall illuminated by the gentle glow of **castor oil lamps**, creating a peaceful and **spiritual atmosphere**.
दिन की शुरुआत सुबह जल्दी **प्रार्थनाओं** से होती है, जो एक विशेष हॉल में **अरंडी के तेल के दीपकों** की हल्की रोशनी में होती है, जिससे शांत और **आध्यात्मिक वातावरण** बनता है।
- This is followed by a group **yoga practice**, where villagers, including children, join to improve **physical well-being** and **mental discipline**.
इसके बाद सामूहिक **योग अभ्यास** होता है, जिसमें बच्चे सहित सभी ग्रामीण शामिल होते हैं, जिससे **शारीरिक स्वास्थ्य** और **मानसिक अनुशासन** में सुधार होता है।
- Education is imparted through a traditional **gurukulam**, where children are taught **Vedic texts, scriptures**, and languages such as **Sanskrit** and **Telugu**, ensuring the preservation of **ancient knowledge and values**.
शिक्षा पारंपरिक **गुरुकुलम** के माध्यम से दी जाती है, जहां बच्चों को **वैदिक ग्रंथ, शास्त्र, और संस्कृत व तेलुगु** जैसी भाषाएं सिखाई जाती हैं, जिससे **प्राचीन ज्ञान और मूल्यों** का संरक्षण होता है।
- A striking feature of the village is its strong sense of **self-reliance**.
गांव की एक प्रमुख विशेषता इसकी मजबूत **आत्मनिर्भरता** है।
- Houses are constructed by the residents themselves using **natural materials** such as **mud, clay, and wood**.
घर स्वयं निवासी **प्राकृतिक सामग्रियों** जैसे **मिट्टी, चिकनी मिट्टी और लकड़ी** का उपयोग करके बनाते हैं।
- Kitchens are equipped with traditional **firewood stoves** for cooking, while garments are woven locally on **handlooms** rather than sourced from outside.
रसोई में पारंपरिक **लकड़ी के चूल्हों** का उपयोग होता है, जबकि कपड़े बाहर से लाने के बजाय स्थानीय **हैंडलूम** पर बुने जाते हैं।
- Water is manually drawn from **wells**, and everyday tasks are carried out with a deep **connection to nature**.
पानी **कुओं** से हाथ से निकाला जाता है, और दैनिक कार्य प्रकृति के साथ गहरे **संबंध** के साथ किए जाते हैं।
- **Community living** lies at the heart of **Kurma Gramam**.
सामुदायिक जीवन कुर्मा ग्रामम के केंद्र में है।
- Collective food preparation in **social kitchens** and the practice of serving meals to visitors highlight the village's spirit of **cooperation and hospitality**.
सामुदायिक रसोई में सामूहिक भोजन बनाना और आगंतुकों को भोजन परोसना गांव की **सहयोग और आतिथ्य** की भावना को दर्शाता है।



- The village attracts nearly **400 visitors** every weekend, drawn by its unique **lifestyle**.
यह गांव हर सप्ताहांत लगभग **400 आगंतुकों** को आकर्षित करता है, जो इसकी अनूठी **जीवनशैली** से प्रभावित होते हैं।
- The village stands as a model of **simplicity, discipline, and cultural continuity**.
यह गांव **सरलता, अनुशासन और सांस्कृतिक निरंतरता** का एक आदर्श है।
- **Agriculture** forms the backbone of the community, with residents cultivating their own crops and relying largely on **locally available resources** for sustenance.
कृषि समुदाय की रीढ़ है, जहां निवासी अपनी फसलें स्वयं उगाते हैं और मुख्य रूप से **स्थानीय संसाधनों** पर निर्भर रहते हैं।
- As evening sets in, **devotional rituals, music, and prayer** bring the community together once again.
जैसे ही शाम होती है, **भक्ति अनुष्ठान, संगीत और प्रार्थना** फिर से समुदाय को एक साथ लाते हैं।

Apple's quiet architect

John Ternus

While Tim Cook leaves a lasting legacy, the company's new CEO will face a lot of pressure to redefine its strategy and products in the age of AI

Id PCS

ILLUSTRATION: SREEJITH R. KUMAR

When Apple announced its next CEO, most people would not have heard the name **John Ternus**. But to insiders, the man has been behind the company's most valuable products.

From the iPod to iPhone Air, and even the most recent MAC Neo, Mr. Ternus's signature is on almost all devices designed at Cupertino. He has spent the past quarter century at the Silicon Valley giant, supporting CEO Tim Cook grow Apple from a \$350 billion company to a \$4 trillion behemoth.

Mr. Ternus received a Bachelor of Science in Engineering with a major in mechanical engineering from the University of Pennsylvania in 1997. After graduating, he joined Virtual Research Systems as a mechanical engineer. Virtual Research Systems was part of the early virtual reality wave of the 1980s and 1990s, where Mr. Ternus worked on VR headsets and immersive technologies, an experience that would prove invaluable for his work on Apple's Vision Pro.

He arrived at Apple in 2001 and joined the company's product design team. Over the following 12 years he climbed steadily. A Bloomberg report de-



scribed him as "charismatic and well-liked". By 2013, he had become vice-president of hardware engineering. And by 2021, he was senior vice-president, taking over the role from Dan Riccio and stepping into the executive team.

His team was behind every generation of iPad, the latest iPhone lineup, and AirPods. He also played a crucial role in the Mac's transition to Apple silicon, a move that weaned Apple from relying on Intel for chipsets, and a portfolio that would be the envy of any hardware engineer. Under his leadership, the Mac became more powerful and more popular than at any point in its four-decade history. His team redefined the iPhone lineup with the iPhone 17 Pro and Pro Max, as well as the strikingly thin iPhone Air. He drove AirPods to become, arguably, the world's best in-ear headphones, with noise cancellation that set a new industry benchmark and the

addition of over-the-counter hearing aid capability.

For all that technical achievement, Mr. Ternus has remained distinctly away from the limelight. His public appearances have been almost entirely confined to Apple's own product events, where he has presented new hardware with an easy confidence that made clear he understood what he was talking about at a molecular level. On naming Mr. Ternus as his successor, Mr. Cook said he has "the mind of an engineer, the soul of an innovator, and the heart to lead with integrity and honour."

Work-in-progress

But the challenges ahead for Mr. Ternus are formidable. Apple's AI strategy remains a work-in-progress, Siri has fallen behind rivals, and geopolitical headwinds continue to complicate the company's global supply chain.

While Mr. Cook leaves a lasting legacy, there will be

a lot of pressure on Mr. Ternus to redefine Apple in the age of AI. In the past 15 years, under Mr. Cook's leadership, the company has largely played the role of a custodian of Steve Jobs' legacy. It is now time to experiment on some new form factors and discard a few older ones.

Apple is trailing behind Samsung and Huawei in foldable phones. While the duo have shipped successive generations of foldable smartphones and smart rings, Apple has largely remained stuck with its tried and tested form factor and product portfolios. There are signs of change at Cupertino, particularly with the recent launch of the thinnest iPhone – iPhone Air – and MacBook Neo, that signal more hardware redesigns in the future.

Mr Ternus's background in hardware engineering and design makes him well-suited to lead Apple's charge. However, he's stepping into a potentially pivotal moment for the company. The lag in AI adoption is a major concern and he'll be overseeing it at a time when global supply chains are under strain. Apple's developer conference in June will offer an early indication of how he intends to steer the company through that transition – and whether its quiet architect can now become its defining leader.

26A. Apple's quiet architect

एप्पल का शांत वास्तुकार

• While **Tim Cook** leaves a lasting legacy, the company's new CEO will face a lot of pressure to redefine its strategy and products in the age of **AI**.

जहाँ **टिम कुक** एक स्थायी विरासत छोड़ते हैं, वहीं कंपनी के नए CEO को **AI** के युग में अपनी रणनीति और उत्पादों को फिर से परिभाषित करने का भारी दबाव झेलना होगा।

• When Apple announced its next CEO, most people would not have heard the name **John Ternus**.

जब एप्पल ने अपने अगले CEO की घोषणा की, तो अधिकांश लोगों ने **जॉन टर्नस** का नाम नहीं सुना होगा।

• But to insiders, the man has been behind the company's most valuable products.

लेकिन अंदरूनी लोगों के लिए, यह व्यक्ति कंपनी के सबसे मूल्यवान उत्पादों के पीछे रहा है।

- From the iPod to iPhone Air, and even the most recent MAC Neo, Mr. Ternus's signature is on almost all devices designed at Cupertino.



iPod से iPhone Air तक, और हाल ही के MAC Neo तक, क्यूपर्टिनो में डिज़ाइन किए गए लगभग सभी उपकरणों पर श्री टर्नस की छाप है।

- He has spent the past quarter century at the Silicon Valley giant, supporting CEO **Tim Cook** grow Apple from a \$350 billion company to a \$4 trillion behemoth.
उन्होंने पिछले 25 वर्षों में सिलिकॉन वैली की इस कंपनी में काम करते हुए CEO **टिम कुक** के साथ एप्पल को \$350 बिलियन से \$4 ट्रिलियन की कंपनी बनाने में योगदान दिया है।
- Mr. Ternus received a Bachelor of Science in Engineering with a major in mechanical engineering from the University of Pennsylvania in 1997.
श्री टर्नस ने 1997 में यूनिवर्सिटी ऑफ पेनसिल्वेनिया से मैकेनिकल इंजीनियरिंग में बैचलर ऑफ साइंस की डिग्री प्राप्त की।
- After graduating, he joined Virtual Research Systems as a mechanical engineer.
स्नातक होने के बाद, उन्होंने Virtual Research Systems में मैकेनिकल इंजीनियर के रूप में काम शुरू किया।
- Virtual Research Systems was part of the early virtual reality wave of the 1980s and 1990s, where Mr. Ternus worked on VR headsets and immersive technologies, an experience that would prove invaluable for his work on Apple's Vision Pro.
Virtual Research Systems 1980 और 1990 के दशक की शुरुआती वर्चुअल रियलिटी लहर का हिस्सा था, जहाँ श्री टर्नस ने VR हेडसेट्स और इमर्सिव तकनीकों पर काम किया, जो बाद में Apple के Vision Pro के लिए उपयोगी साबित हुआ।
- He arrived at Apple in 2001 and joined the company's product design team.
वह 2001 में एप्पल में शामिल हुए और कंपनी की प्रोडक्ट डिजाइन टीम का हिस्सा बने।
- Over the following 12 years he climbed steadily.
अगले 12 वर्षों में उन्होंने लगातार प्रगति की।
- A Bloomberg report described him as "charismatic and well-liked".
ब्लूमबर्ग की एक रिपोर्ट ने उन्हें "आकर्षक और लोकप्रिय" बताया।
- By 2013, he had become vice-president of hardware engineering.
2013 तक वह हार्डवेयर इंजीनियरिंग के वाइस प्रेसिडेंट बन गए।
- And by 2021, he was senior vice-president, taking over the role from Dan Riccio and stepping into the executive team.
और 2021 तक वह सीनियर वाइस प्रेसिडेंट बने, डैन रिकियो की जगह लेकर एग्जीक्यूटिव टीम में शामिल हुए।
- His team was behind every generation of iPad, the latest iPhone lineup, and AirPods.
उनकी टीम हर iPad, नवीनतम iPhone लाइनअप और AirPods के पीछे रही है।
- He also played a crucial role in the Mac's transition to Apple silicon, a move that weaned Apple from relying on Intel for chipsets, and a portfolio that would be the envy of any hardware engineer.
उन्होंने Mac को Apple silicon पर स्थानांतरित करने में महत्वपूर्ण भूमिका निभाई, जिससे एप्पल Intel पर निर्भरता से मुक्त हुआ और एक ऐसा पोर्टफोलियो बना जो किसी भी हार्डवेयर इंजीनियर के लिए ईर्ष्या का विषय हो।
- Under his leadership, the Mac became more powerful and more popular than at any point in its four-decade history.
उनके नेतृत्व में Mac अपनी 40 साल की इतिहास में सबसे शक्तिशाली और लोकप्रिय बन गया।
- His team redefined the iPhone lineup with the iPhone 17 Pro and Pro Max, as well as the strikingly thin iPhone Air.
उनकी टीम ने iPhone 17 Pro और Pro Max तथा बेहद पतले iPhone Air के साथ iPhone लाइनअप को नया रूप दिया।
- He drove AirPods to become, arguably, the world's best in-ear headphones, with noise cancellation that set a new industry benchmark and the addition of over-the-counter hearing



aid capability.

उन्होंने AirPods को दुनिया के सर्वश्रेष्ठ इन-ईयर हेडफोन्स में बदल दिया, जिसमें उत्कृष्ट नॉइज़ कैंसलेशन और ओवर-द-काउंटर हियरिंग एड क्षमता शामिल है।

- For all that technical achievement, Mr. Ternus has remained distinctly away from the limelight. इन सभी तकनीकी उपलब्धियों के बावजूद, श्री टर्नस हमेशा सुर्खियों से दूर रहे हैं।
- His public appearances have been almost entirely confined to Apple's own product events, where he has presented new hardware with an easy confidence that made clear he understood what he was talking about at a molecular level.
उनकी सार्वजनिक उपस्थिति लगभग केवल एप्पल के प्रोडक्ट इवेंट्स तक सीमित रही है, जहाँ उन्होंने नए हार्डवेयर को आत्मविश्वास के साथ प्रस्तुत किया।
- On naming Mr. Ternus as his successor, Mr. Cook said he has "the mind of an engineer, the soul of an innovator, and the heart to lead with integrity and honour."
उन्हें अपना उत्तराधिकारी घोषित करते हुए श्री कुक ने कहा कि उनमें "एक इंजीनियर का दिमाग, एक नवप्रवर्तक की आत्मा और ईमानदारी से नेतृत्व करने का दिल" है।

Work-in-progress

कार्य प्रगति पर

- But the challenges ahead for Mr. Ternus are formidable.
लेकिन श्री टर्नस के सामने चुनौतियाँ बहुत बड़ी हैं।
- Apple's AI strategy remains a work-in-progress, Siri has fallen behind rivals, and geopolitical headwinds continue to complicate the company's global supply chain.
एप्पल की AI रणनीति अभी विकसित हो रही है, Siri प्रतिस्पर्धियों से पीछे रह गई है, और वैश्विक राजनीतिक परिस्थितियाँ सप्लाई चेन को जटिल बना रही हैं।
- While Mr. Cook leaves a lasting legacy, there will be a lot of pressure on Mr. Ternus to redefine Apple in the age of AI.
जहाँ श्री कुक एक मजबूत विरासत छोड़ते हैं, वहीं AI युग में एप्पल को फिर से परिभाषित करने का दबाव श्री टर्नस पर होगा।
- In the past 15 years, under Mr. Cook's leadership, the company has largely played the role of a custodian of **Steve Jobs' legacy**.
पिछले 15 वर्षों में, श्री कुक के नेतृत्व में कंपनी ने मुख्य रूप से **स्टीव जॉब्स की विरासत** को संरक्षित करने का काम किया है।
- It is now time to experiment on some new form factors and discard a few older ones.
अब समय है कि कुछ नए फॉर्म फैक्टर पर प्रयोग किया जाए और कुछ पुराने को छोड़ा जाए।
- Apple is trailing behind Samsung and Huawei in foldable phones.
एप्पल फोल्डेबल फोन्स में Samsung और Huawei से पीछे है।
- While the duo have shipped successive generations of foldable smartphones and smart rings, Apple has largely remained stuck with its tried and tested form factor and product portfolios.
जहाँ ये कंपनियाँ लगातार नए फोल्डेबल स्मार्टफोन्स और स्मार्ट रिंग्स ला रही हैं, वहीं एप्पल अभी भी पुराने फॉर्म फैक्टर पर टिका हुआ है।
- There are signs of change at Cupertino, particularly with the recent launch of the thinnest iPhone — iPhone Air — and MacBook Neo, that signal more hardware redesigns in the future.
क्यूपर्टिनो में बदलाव के संकेत मिल रहे हैं, खासकर सबसे पतले iPhone Air और MacBook Neo के लॉन्च के साथ, जो भविष्य में और बदलाव का संकेत देते हैं।
- Mr Ternus's background in hardware engineering and design makes him well-suited to lead Apple's charge.
हार्डवेयर इंजीनियरिंग और डिजाइन में उनकी पृष्ठभूमि उन्हें एप्पल का नेतृत्व करने के लिए उपयुक्त बनाती है।



- However, he's stepping into a potentially pivotal moment for the company. हालांकि, वह कंपनी के लिए एक निर्णायक समय में नेतृत्व संभाल रहे हैं।
- The lag in AI adoption is a major concern and he'll be overseeing it at a time when global supply chains are under strain. AI अपनाने में देरी एक बड़ी चिंता है और वह इसे ऐसे समय में संभालेंगे जब वैश्विक सप्लाई चेन दबाव में है।
- Apple's developer conference in June will offer an early indication of how he intends to steer the company through that transition — and whether its quiet architect can now become its defining leader. जून में होने वाला एप्पल डेवलपर कॉन्फ्रेंस यह संकेत देगा कि वह कंपनी को इस परिवर्तन के दौर में कैसे आगे बढ़ाएंगे — और क्या यह शांत वास्तुकार अब एक निर्णायक नेता बन जाएगा।

Suryavanshi becomes youngest to score 1,000 runs in T20s



SHIV KUMAR PUSHPAKAR

PCS
With his third 15-ball fifty in this IPL season, Vaibhav Suryavanshi (15 years, 29 days) became the youngest player to score 1,000 runs in T20 cricket. He is now the fastest player to reach the milestone in the format by balls (473), breaking the record held by Mitchell Owen (533).

26A. Suryavanshi becomes youngest to score 1,000 runs in T20s

सूर्यवंशी बने T20 में 1,000 रन बनाने वाले सबसे युवा खिलाड़ी

- With his third **15-ball fifty** in this IPL season, **Vaibhav Suryavanshi** (15 years, 29 days) became the **youngest player to score 1,000 runs in T20 cricket**. इस IPL सीज़न में अपने तीसरे 15 गेंदों पर अर्धशतक के साथ वैभव सूर्यवंशी (15 वर्ष, 29 दिन) T20 क्रिकेट में 1,000 रन बनाने वाले सबसे युवा खिलाड़ी बन गए।
- He is now the **fastest player** to reach the milestone in the format by balls (473), breaking the record held by **Mitchell Owen** (533). वह अब गेंदों के हिसाब से (473) इस उपलब्धि तक पहुंचने वाले सबसे तेज खिलाड़ी बन गए हैं, उन्होंने मिचेल ओवेन (533) का रिकॉर्ड तोड़ दिया।

दिया।

GS Paper 1: History	26 April 2026
TOPICS COVERED	
26A	

Peace march



Monks from the Maha Bodhi Society take out a peace walk on the occasion of Bodhi Week (Bodhi Saptaha) in Bengaluru on Saturday. ANI

Monks from the Maha Bodhi Society take out a peace walk on the occasion of Bodhi Week (Bodhi Saptaha) in Bengaluru on Saturday.

Rhythms of Pooram



Ceremonial start: As part of the 'Pooram Vilambaram' ritual marking the start of Thrissur Pooram, deity Neythalakavilamma emerges atop jumbo Ernakulam Sivakumar through Thekke Gopura Nada (southern entrance) of Sree Vadakkunnathan Temple on Saturday. K.K. NALLES

Ceremonial start: As part of the 'Pooram Vilambaram' ritual marking the start of Thrissur Pooram, deity Neythalakavilamma emerges atop jumbo Ernakulam Sivakumar through Thekke Gopura



Nada(southern entrance) of Sree Vadakkunnathan Temple on Saturday.

GS Paper 1: Society		26 April 2026
TOPICS COVERED		
26A	Count the vulnerable: Census chief संवेदनशील लोगों की गणना करें: जनगणना प्रमुख	
26A	Domestic work and its quest for recognition घरेलू कार्य और उसकी पहचान की खोज	

Count the vulnerable: Census chief

Registrar-General Mritunjay Kumar Narayan asks officials to ensure that such sections of people, including those affected by communal, political and social tensions, are counted as any omission may lead to litigation in future; information on demolition and new constructions is to be noted, he adds

GS I Society
Vijaita Singh
NEW DELHI

The Registrar-General and Census Commissioner, Mritunjay Kumar Narayan, has asked the State directorates to identify and prepare a list of villages, habitats, and sections of the population vulnerable to "threat, intimidation or interference" during the ongoing Census exercise.

The Commissioner asked the States to avoid enumerators who may be biased towards specific social or religious communities as far as possible as their appointment for fieldwork could prove counter-productive.

In an April 20 communication to the Directorate of Census Operations, Mr. Narayan asked officials to ensure that vulnerable sections of people, which include those affected by communal, political, and social tensions, are counted as any omission may lead to litigation in future.

Earlier this week, three members of a family were

arrested in Dhenkanal, Odisha, for allegedly attacking four teachers when they went to the house for Census fieldwork.

A central support helpline, 1855, for queries or guidance related to the first phase of the Census, House Listing Operations (HLO), has been launched. The Census is being conducted in two phases – HLO and Population Enumeration.

The first phase will be conducted from April 1 to September 30 in phases for all States. The second phase, which will also count caste, will be carried out in February 2027. This is the first digital Census and the first to allow self-enumeration.

Risk assessment
The charge officers, who are in charge of field operations, have been asked to prepare the list by touring the areas extensively and in consultation with the local village officials, police or block development officials.

"They should identify



Counting on: The States are directed to avoid enumerators who may be biased towards any community. SUSHIL KUMAR VERMA

the source of such threat/intimidation and identify the names of persons who are likely to spearhead such offence of undue influence. While doing this exercise they shall take into account both the past incidents and the current apprehensions," Mr. Narayan said.

He added that a plan should be ready to cover areas which were difficult to access, such as forest villages and hamlets.

"Similarly, every district would have people who are difficult to be enumer-

ated. Such groups would include people who are highly mobile/floating population like migrant labour, those engaged in occupations like herding of sheep/cattle and such other nomadic tribes, gatherers of forest produce, seafarers who are likely to be absent during the entire period of enumeration, homeless people, street children, people living in areas affected by some form of social/political tension, etc.," Mr. Narayan said.

The Commissioner said that if a population had

now started living in villages that were uninhabited during the previous Census, then they were to be enumerated without omission.

"At the same time, the information about the areas where demolition has taken place or new residential constructions have come up or otherwise major construction activities such as road works, irrigation dams, etc. are in execution should also be available. Special efforts are required to enumerate people residing in such areas," the letter said.

Teachers on duty

Elaborating on the role of enumerators, the letter stated that the Right to Education (RTE) Act has specifically allowed the use of teachers in Census activity and they may be appointed enumerators/supervisors in the first preference.

"In case of shortage of teachers, other officials of the government and local bodies are to be appointed as Census personnel. The

officials appointed should preferably be from the local area and should be familiar with local conditions. However, if there is a situation on ground which suggests that a local would act in a biased manner and this would affect the Census, the PCO (Principal Charge Officer) should appoint persons from outside the area. However, pregnant ladies, persons with severe chronic ailments, severe disabilities, persons below matriculate, persons biased towards specific social/religious communities, etc., may be avoided to the extent possible as appointing them for fieldwork would be difficult/counter-productive," it said. Pointing out that the details once recorded cannot be altered at a later stage, he said that in the past, some of the District Magistrates had approached the Census organisation with the plea that the Census enumeration had not been carried out properly in their districts and that the situation may be rectified.

26A. Count the vulnerable: Census chief संवेदनशील लोगों की गणना करें: जनगणना प्रमुख

- Registrar-General Mritunjay Kumar Narayan asks officials to ensure that such sections of people, including those affected by communal, political and social tensions, are counted as any omission may lead to litigation in future; information on demolition and new constructions is to be noted, he adds.

रजिस्ट्रार-जनरल मृत्युंजय कुमार नारायण ने अधिकारियों से कहा कि ऐसे लोगों के वर्ग, जिनमें सांप्रदायिक, राजनीतिक और सामाजिक तनावों से प्रभावित लोग शामिल हैं, की गणना सुनिश्चित की जाए क्योंकि किसी भी चूक से भविष्य में कानूनी विवाद हो सकता है; उन्होंने यह भी कहा कि ध्वस्तीकरण और नई निर्माण गतिविधियों की जानकारी भी दर्ज की जाए।

- The Registrar-General and Census Commissioner, Mritunjay Kumar Narayan, has asked the State directorates to identify and prepare a list of villages, habitats, and sections of the population vulnerable to "threat, intimidation or interference" during the ongoing Census exercise.

रजिस्ट्रार-जनरल और जनगणना आयुक्त, मृत्युंजय कुमार नारायण ने राज्य निदेशालयों से कहा है कि वे चल



रही जनगणना प्रक्रिया के दौरान “धमकी, डराने या हस्तक्षेप” के प्रति संवेदनशील गांवों, बस्तियों और आबादी के वर्गों की पहचान कर सूची तैयार करें।

- The Commissioner asked the States to avoid **enumerators** who may be biased towards specific social or religious communities as far as possible as their appointment for **fieldwork** could prove counter-productive.
आयुक्त ने राज्यों से कहा कि वे ऐसे गणनाकर्मियों से बचें जो किसी विशेष सामाजिक या धार्मिक समुदाय के प्रति पक्षपाती हो सकते हैं क्योंकि उनकी मैदानी कार्य में नियुक्ति प्रतिकूल साबित हो सकती है।
- In an April 20 communication to the **Directorate of Census Operations**, Mr. Narayan asked officials to ensure that vulnerable sections of people, which include those affected by communal, political, and social tensions, are counted as any omission may lead to litigation in future.
20 अप्रैल को जनगणना संचालन निदेशालय को भेजे गए संदेश में श्री नारायण ने अधिकारियों से कहा कि संवेदनशील वर्गों की गणना सुनिश्चित की जाए क्योंकि किसी भी चूक से भविष्य में कानूनी विवाद हो सकता है।
- Earlier this week, three members of a family were arrested in **Dhenkanal, Odisha**, for allegedly attacking four teachers when they went to the house for Census fieldwork.
इस सप्ताह की शुरुआत में ओडिशा के डेंकानाल में एक परिवार के तीन सदस्यों को गिरफ्तार किया गया, जिन्होंने कथित रूप से जनगणना के कार्य के लिए घर आए चार शिक्षकों पर हमला किया था।
- A central support helpline, **1855**, for queries or guidance related to the first phase of the Census, **House Listing Operations (HLO)**, has been launched.
जनगणना के पहले चरण हाउस लिस्टिंग ऑपरेशन्स (HLO) से संबंधित प्रश्नों या मार्गदर्शन के लिए एक केंद्रीय हेल्पलाइन 1855 शुरू की गई है।
- The Census is being conducted in **two phases** — HLO and **Population Enumeration**.
जनगणना दो चरणों में की जा रही है — HLO और जनसंख्या गणना।
- The first phase will be conducted from April 1 to September 30 in phases for all States.
पहला चरण 1 अप्रैल से 30 सितंबर तक सभी राज्यों में चरणबद्ध तरीके से आयोजित किया जाएगा।
- The second phase, which will also count **caste**, will be carried out in **February 2027**.
दूसरा चरण, जिसमें जाति गणना भी शामिल होगी, फरवरी 2027 में आयोजित किया जाएगा।
- This is the first **digital Census** and the first to allow **self-enumeration**.
यह पहली डिजिटल जनगणना है और पहली बार इसमें स्वयं-गणना की अनुमति दी गई है।

Risk assessment

जोखिम मूल्यांकन

- The **charge officers**, who are in charge of field operations, have been asked to prepare the list by touring the areas extensively and in consultation with the local village officials, police or block development officials.
चार्ज अधिकारी, जो मैदानी कार्य के प्रभारी हैं, से कहा गया है कि वे व्यापक दौरे और स्थानीय गांव अधिकारियों, पुलिस या ब्लॉक विकास अधिकारियों से परामर्श करके सूची तैयार करें।
- “They should identify the source of such **threat/intimidation** and identify the names of persons who are likely to spearhead such offence of undue influence.
“उन्हें ऐसे धमकी/डराने के स्रोत की पहचान करनी चाहिए और उन व्यक्तियों के नाम भी चिन्हित करने चाहिए जो इस प्रकार के अनुचित प्रभाव का नेतृत्व कर सकते हैं।
- While doing this exercise they shall take into account both the past incidents and the current apprehensions,” Mr. Narayan said.
इस प्रक्रिया के दौरान उन्हें पिछले घटनाओं और वर्तमान आशंकाओं दोनों को ध्यान में रखना चाहिए,” श्री नारायण ने कहा।
- He added that a plan should be ready to cover areas which were difficult to access, such as **forest villages and hamlets**.



उन्होंने कहा कि उन क्षेत्रों को कवर करने के लिए योजना तैयार होनी चाहिए जो पहुंचने में कठिन हैं, जैसे वन गांव और छोटे बस्तियां।

- “Similarly, every district would have people who are difficult to be enumerated. “इसी तरह, हर जिले में ऐसे लोग होंगे जिनकी गणना करना कठिन है।
- Such groups would include people who are highly **mobile/floating population** like **migrant labour**, those engaged in occupations like herding of sheep/cattle and such other **nomadic tribes**, gatherers of forest produce, seafarers who are likely to be absent during the entire period of enumeration, **homeless people**, **street children**, people living in areas affected by some form of social/political tension, etc.,” Mr. Narayan said.
ऐसे समूहों में अत्यधिक **गतिशील/फ्लोटिंग आबादी** जैसे **प्रवासी मजदूर**, भेड़/पशु चराने वाले, अन्य **घुमंतू जनजातियां**, वन उत्पाद एकत्र करने वाले, समुद्री कार्य करने वाले, जो पूरे समय अनुपस्थित रह सकते हैं, **बेघर लोग**, **सड़क पर रहने वाले बच्चे**, और सामाजिक/राजनीतिक तनाव से प्रभावित क्षेत्रों में रहने वाले लोग शामिल हैं,” श्री नारायण ने कहा।
- The Commissioner said that if a population had now started living in villages that were uninhabited during the previous Census, then they were to be enumerated without omission. आयुक्त ने कहा कि यदि कोई आबादी अब उन गांवों में रहने लगी है जो पिछली जनगणना में निर्जन थे, तो उनकी गणना बिना किसी चूक के की जानी चाहिए।
- “At the same time, the information about the areas where **demolition** has taken place or new **residential constructions** have come up or otherwise major construction activities such as **road works**, **irrigation dams**, etc. are in execution should also be available.
“साथ ही, उन क्षेत्रों की जानकारी भी उपलब्ध होनी चाहिए जहां **ध्वस्तीकरण** हुआ है या नए **आवासीय निर्माण** हुए हैं या जहां **सड़क निर्माण**, **सिंचाई बांध** जैसी प्रमुख निर्माण गतिविधियां चल रही हैं।
- Special efforts are required to enumerate people residing in such areas,” the letter said.
ऐसे क्षेत्रों में रहने वाले लोगों की गणना के लिए विशेष प्रयास आवश्यक हैं,” पत्र में कहा गया।

Teachers on duty

शिक्षकों की भूमिका

- Elaborating on the role of **enumerators**, the letter stated that the **Right to Education (RTE) Act** has specifically allowed the use of teachers in Census activity and they may be appointed enumerators/supervisors in the first preference.
गणनाकर्मियों की भूमिका पर विस्तार से बताते हुए, पत्र में कहा गया कि **शिक्षा का अधिकार (RTE) अधिनियम** ने जनगणना कार्य में शिक्षकों के उपयोग की अनुमति दी है और उन्हें प्राथमिकता के आधार पर गणनाकर्मियों/पर्यवेक्षक नियुक्त किया जा सकता है।
- “In case of shortage of teachers, other officials of the government and local bodies are to be appointed as Census personnel.
“शिक्षकों की कमी होने पर, सरकार और स्थानीय निकायों के अन्य अधिकारियों को जनगणना कर्मियों के रूप में नियुक्त किया जाएगा।
- The officials appointed should preferably be from the local area and should be familiar with local conditions.
नियुक्त अधिकारी स्थानीय क्षेत्र से होने चाहिए और स्थानीय परिस्थितियों से परिचित होने चाहिए।
- However, if there is a situation on ground which suggests that a local would act in a biased manner and this would affect the Census, the **PCO (Principal Charge Officer)** should appoint persons from outside the area.
हालांकि, यदि ऐसी स्थिति हो जहां स्थानीय व्यक्ति पक्षपाती व्यवहार कर सकता है और इससे जनगणना प्रभावित हो सकती है, तो **PCO (प्रधान चार्ज अधिकारी)** को बाहरी व्यक्तियों को नियुक्त करना चाहिए।
- However, **pregnant ladies**, persons with severe chronic ailments, severe disabilities, persons below matriculate, persons biased towards specific social/religious communities, etc., may be avoided to the extent possible as appointing them for fieldwork would be difficult/counter-productive,” it said.



हालांकि, **गर्भवती महिलाएं**, गंभीर बीमारियों से ग्रस्त व्यक्ति, गंभीर विकलांगता वाले व्यक्ति, मैट्रिक से कम शिक्षित व्यक्ति, और विशेष सामाजिक/धार्मिक समुदायों के प्रति पक्षपाती व्यक्ति आदि को यथासंभव टालना चाहिए क्योंकि उन्हें मैदानी कार्य में नियुक्त करना कठिन या प्रतिकूल हो सकता है," इसमें कहा गया।

- Pointing out that the details once recorded cannot be altered at a later stage, he said that in the past, some of the **District Magistrates** had approached the Census organisation with the plea that the Census enumeration had not been carried out properly in their districts and that the situation may be rectified.

उन्होंने कहा कि एक बार दर्ज किए गए विवरण बाद में बदले नहीं जा सकते, और अतीत में कुछ **जिला मजिस्ट्रेटों** ने जनगणना संगठन से संपर्क किया था कि उनके जिलों में गणना सही ढंग से नहीं हुई थी और इसे ठीक किया जाना चाहिए।

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PATRIOTIC IAS



Will AAP MPs face disqualification after joining BJP?

Is there a law against defection? What are the exceptions to it and how has the Supreme Court interpreted them? What are experts' view on seven of AAP's 10 Rajya Sabha members joining the BJP last week?

CS II: Polity
Aaratrika Bhaumik

The story so far:

In a setback to the Aam Aadmi Party (AAP), seven of its 10 Rajya Sabha members, amounting to two-thirds of its strength in the Upper House, joined the Bharatiya Janata Party (BJP) on April 24. AAP MP Raghav Chadha, who was removed as the party's deputy leader in the Rajya Sabha three weeks ago, announced that he and six other party members had decided to "merge with the BJP".

Is there a law against defection?

The anti-defection law, enshrined in the Tenth Schedule to the Constitution by the 52nd Constitutional Amendment Act, 1985, seeks to curb rampant floor-crossing by elected representatives in Parliament and State legislatures. It provides for the disqualification of a legislator if they voluntarily relinquish membership of the political party on whose ticket they were elected, or if they vote, or abstain from voting, in defiance of directions issued by their party or by an authorised functionary.

What are the 'split' and 'merger' exceptions?

The Tenth Schedule originally recognised two exceptions under which members would not

MOB

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According to former Lok Sabha Secretary-General P.D.T. Achary, a valid merger requires the original political party to first merge with another party, and then the decision to be backed by at least two-thirds of the legislature party

incur disqualification. The first, the "split" exception under paragraph 3, insulated legislators from disqualification if at least one-third of the members of a legislature party defected together. Owing to its misuse to engineer defections, this exception was subsequently removed by the 91st Constitutional Amendment in 2003.

The second, the "merger" exception under paragraph 4, stipulates that a legislator will not be disqualified for joining another political party if the move is part of a merger involving their original party. Under sub-paragraph (1), a member will not be disqualified if their original party merges with another political party, and they act in accordance with such merger. Sub-paragraph (2) deems such a merger valid only if at least two-thirds of the legislature party agree to it. This exception remains in force and was intended, as reflected in parliamentary debates, to protect principled defections grounded in ideological differences.

However, paragraph 4 has been criticised for its convoluted drafting. The ambiguity lies in whether its two sub-paragraphs are to be read conjunctively or disjunctively. On a conjunctive reading, a valid merger requires both an actual merger of the original political party (under paragraph 4(1)) and the consent of at least two-thirds of the legislature party (under paragraph 4(2)). On a disjunctive reading, however, a merger may be "deemed" once two-thirds of the legislature party agrees to join another party, even without a corresponding merger at the national level.

What did the Supreme Court rule on the 'split' exception?

The Supreme Court has endorsed a conjunctive reading while interpreting the now-deleted "split" exception. In *Rajendra Singh Rana v. Swamy Prasad Maurya* (2007), where 37 MLAs of the Bahujan Samaj Party sought recognition of a formal split, the Court held that for the exception to apply, a split in the "legislature party" must stem from a corresponding split in the "original political party". The "legislature party" refers to all elected members of a House belonging to a political party, while the "original

political party" denotes the party itself.

How has the 'merger' exception been interpreted?

In 2019, 10 MLAs from the Indian National Congress in Goa joined the BJP, then in power in the State, claiming they constituted two-thirds of the 15-member Congress legislature party. Disqualification petitions were rejected by the Speaker of the Goa Legislative Assembly, who held that the move amounted to a valid "merger" under paragraph 4 of the Tenth Schedule. On February 24, 2022, the Bombay High Court upheld this decision, ruling that since the defecting legislators met the two-thirds threshold, their move constituted a "deemed merger" with the BJP.

Notably, the High Court adopted a disjunctive reading of paragraph 4 and ruled that a "deemed" merger is triggered once two-thirds of a legislature party agrees to join another party, even without approval from the original political party at the national level.

What do experts say?

According to former Lok Sabha Secretary-General P.D.T. Achary, a valid merger under Paragraph 4 of the Tenth Schedule requires the original political party to first merge with another party, and then the decision to be backed by at least two-thirds of the legislature party. "An interpretation faithful to the anti-defection law's intent would mean that Rajya Sabha MPs cannot, on their own, decide to merge with another party. In this case, it would require Arvind Kejriwal to agree to a merger with the BJP," he said. Any member, he noted, may now move a disqualification petition before the Rajya Sabha Chairman, whose decision would be open to judicial review.

However, Swapnil Tripathi, who heads Charkha, the Constitutional Law Centre at the Vidhi Centre for Legal Policy, said that the support of two-thirds of the AAP's Rajya Sabha members could allow the move to be treated as a "deemed" merger under paragraph 4(2).

He, however, pointed to a larger anomaly that is likely to be challenged. "Rajya Sabha MPs are elected by MLAs of State legislatures. Here, the MLAs who elected these members continue to belong to the AAP in Punjab, while the MPs have switched to the BJP. This creates a disconnect between the electoral base and the MPs' party affiliation, undermining the underlying objective of Rajya Sabha representation," he said.



Rajya Sabha MPs Raghav Chadha, Sandeep Pathak and Ashok Mittal meet BJP National President Nitin Nabin in New Delhi, ANI

26A. Will AAP MPs face disqualification after joining BJP?

क्या AAP सांसद BJP में शामिल होने के बाद अयोग्यता का सामना करेंगे?

- In a setback to the Aam Aadmi Party (AAP), seven of its 10 Rajya Sabha members, amounting to two-thirds of its strength in the Upper House, joined the Bharatiya Janata Party (BJP) on April 24.

आम आदमी पार्टी (AAP) के लिए एक झटके के रूप में, इसके 10 में से सात राज्यसभा सदस्यों, जो उच्च सदन में इसकी दो-तिहाई शक्ति के बराबर हैं, ने 24 अप्रैल को भारतीय जनता पार्टी (BJP) में शामिल हो गए।

- AAP MP Raghav Chadha, who was removed as the party's deputy leader in the Rajya Sabha three weeks ago, announced that he and six other party members had decided to "merge with the BJP".

AAP सांसद राघव चड्ढा, जिन्हें तीन सप्ताह पहले राज्यसभा में पार्टी के उपनेता पद से हटा दिया गया था, ने घोषणा की कि उन्होंने और छह अन्य पार्टी सदस्यों ने "BJP में विलय" करने का निर्णय लिया है।

Is there a law against defection? (क्या दल-बदल के खिलाफ कोई कानून है?)

- The anti-defection law, enshrined in the Tenth Schedule to the Constitution by the 52nd Constitutional Amendment Act, 1985, seeks to curb rampant floor-crossing by elected representatives in Parliament and State legislatures.

दल-बदल विरोधी कानून, जिसे 52वें संविधान संशोधन अधिनियम, 1985 द्वारा संविधान की दसवीं अनुसूची



में शामिल किया गया, संसद और राज्य विधानसभाओं में निर्वाचित प्रतिनिधियों द्वारा व्यापक रूप से होने वाले दल-बदल को रोकने का प्रयास करता है।

- It provides for the **disqualification** of a legislator if they voluntarily relinquish membership of the political party on whose ticket they were elected, or if they vote, or abstain from voting, in defiance of directions issued by their party or by an authorised functionary.
यह प्रावधान करता है कि यदि कोई विधायक स्वेच्छा से उस राजनीतिक दल की सदस्यता त्याग देता है जिसके टिकट पर वह निर्वाचित हुआ था, या यदि वह अपनी पार्टी या किसी अधिकृत पदाधिकारी द्वारा जारी निर्देशों के विरुद्ध मतदान करता है या मतदान से विरत रहता है, तो उसकी **अयोग्यता** घोषित की जा सकती है।

What are the 'split' and 'merger' exceptions? ('विभाजन' और 'विलय' अपवाद क्या हैं?)

- The **Tenth Schedule** originally recognised two exceptions under which members would not incur disqualification.
दसवीं अनुसूची ने प्रारंभ में दो ऐसे अपवादों को मान्यता दी थी जिनके अंतर्गत सदस्यों को अयोग्यता का सामना नहीं करना पड़ता था।
- The first, the **"split" exception under paragraph 3**, insulated legislators from disqualification if at least **one-third of the members of a legislature party defected together**.
पहला, **पैरा 3** के अंतर्गत "विभाजन" अपवाद, विधायकों को अयोग्यता से बचाता था यदि किसी विधानमंडलीय दल के कम से कम **एक-तिहाई** सदस्य एक साथ दल-बदल करते थे।
- **Owing to its misuse to engineer defections, this exception was subsequently removed by the 91st Constitutional Amendment in 2003.**
दल-बदल को प्रोत्साहित करने हेतु इसके दुरुपयोग के कारण, इस अपवाद को बाद में **91वें संविधान संशोधन** द्वारा **2003** में समाप्त कर दिया गया।
- The second, the **"merger" exception under paragraph 4**, stipulates that a legislator will not be disqualified for joining another political party if the move is part of a merger involving their original party.
दूसरा, **पैरा 4** के अंतर्गत "विलय" अपवाद यह निर्धारित करता है कि यदि कोई विधायक अपने मूल दल के विलय के हिस्से के रूप में किसी अन्य राजनीतिक दल में शामिल होता है, तो उसे अयोग्य नहीं ठहराया जाएगा।
- **Under sub-paragraph (1), a member will not be disqualified if their original party merges with another political party, and they act in accordance with such merger.**
उप-पैरा (1) के अनुसार, यदि किसी सदस्य का मूल दल किसी अन्य राजनीतिक दल में विलय हो जाता है और वह उस विलय के अनुरूप कार्य करता है, तो उसे अयोग्य नहीं ठहराया जाएगा।
- **Sub-paragraph (2) deems such a merger valid only if at least two-thirds of the legislature party agree to it.**
उप-पैरा (2) के अनुसार, ऐसा विलय तभी वैध माना जाएगा जब विधानमंडलीय दल के कम से कम **दो-तिहाई** सदस्य इससे सहमत हों।
- This exception remains in force and was intended, as reflected in parliamentary debates, to protect **principled defections** grounded in **ideological differences**.
यह अपवाद अभी भी लागू है और संसदीय बहसों में परिलक्षित रूप से इसका उद्देश्य **सैद्धांतिक दल-बदल** को, जो **वैचारिक भिन्नताओं** पर आधारित हो, संरक्षण प्रदान करना था।
- However, **paragraph 4 has been criticised for its convoluted drafting**.
हालांकि, **पैरा 4** की **जटिल भाषा-रचना** के लिए इसकी आलोचना की गई है।
- The **ambiguity lies in whether its two sub-paragraphs are to be read conjunctively or disjunctively**.
अस्पष्टता इस बात में है कि इसके दोनों उप-पैरा को **संयुक्त रूप से** या **अलग-अलग रूप से** पढ़ा जाए।
- **On a conjunctive reading, a valid merger requires both an actual merger of the original political party (under paragraph 4(1)) and the consent of at least two-thirds of the legislature party (under paragraph 4(2)).**



संयुक्त रूप से पढ़ने पर, एक वैध विलय के लिए मूल राजनीतिक दल का वास्तविक विलय (पैरा 4(1) के तहत) और विधानमंडलीय दल के कम से कम दो-तिहाई सदस्यों की सहमति (पैरा 4(2) के तहत) दोनों आवश्यक हैं।

- On a disjunctive reading, however, a merger may be “deemed” once **two-thirds** of the legislature party agrees to join another party, even without a corresponding merger at the national level.

हालांकि, अलग-अलग रूप से पढ़ने पर, यदि विधानमंडलीय दल के दो-तिहाई सदस्य किसी अन्य दल में शामिल होने पर सहमत हो जाएं, तो बिना राष्ट्रीय स्तर पर वास्तविक विलय के भी इसे “विलय” माना जा सकता है।

What did the Supreme Court rule on the ‘split’ exception?

सुप्रीम कोर्ट ने ‘विभाजन’ अपवाद पर क्या निर्णय दिया?

- The **Supreme Court** has endorsed a **conjunctive reading** while interpreting the now-deleted “split” exception.

सुप्रीम कोर्ट ने अब हटाए जा चुके “विभाजन” अपवाद की व्याख्या करते समय **संयुक्त व्याख्या** का समर्थन किया है।

- In **Rajendra Singh Rana v. Swamy Prasad Maurya (2007)**, where 37 MLAs of the **Bahujan Samaj Party** sought recognition of a formal split, the Court held that for the exception to apply, a split in the “legislature party” must stem from a corresponding split in the “original political party”.

राजेंद्र सिंह राणा बनाम स्वामी प्रसाद मौर्य (2007) मामले में, जहां **बहुजन समाज पार्टी** के 37 विधायकों ने औपचारिक विभाजन की मान्यता मांगी थी, न्यायालय ने कहा कि इस अपवाद के लागू होने के लिए “विधानमंडलीय दल” में विभाजन का स्रोत “मूल राजनीतिक दल” में समानांतर विभाजन होना चाहिए।

- The “legislature party” refers to all elected members of a House belonging to a political party, while the “original political party” denotes the party itself.

“विधानमंडलीय दल” से तात्पर्य किसी सदन के सभी निर्वाचित सदस्यों से है जो किसी राजनीतिक दल से संबंधित होते हैं, जबकि “मूल राजनीतिक दल” से तात्पर्य स्वयं उस दल से है।

How has the ‘merger’ exception been interpreted? (‘विलय’ अपवाद की व्याख्या कैसे की गई है?)

- In **2019**, 10 MLAs from the **Indian National Congress** in **Goa** joined the **BJP**, then in power in the State, claiming they constituted two-thirds of the 15-member Congress legislature party. **2019** में, **गोवा** में **भारतीय राष्ट्रीय कांग्रेस** के 10 विधायक उस समय राज्य में सत्तारूढ़ **BJP** में शामिल हो गए, यह दावा करते हुए कि वे 15 सदस्यीय कांग्रेस विधानमंडलीय दल के दो-तिहाई थे।

- Disqualification petitions were rejected by the **Speaker of the Goa Legislative Assembly**, who held that the move amounted to a valid “merger” under **paragraph 4 of the Tenth Schedule**.

अयोग्यता याचिकाओं को **गोवा विधानसभा के अध्यक्ष** द्वारा खारिज कर दिया गया, जिन्होंने माना कि यह कदम **दसवीं अनुसूची के पैरा 4** के तहत एक वैध “विलय” है।

- On **February 24, 2022**, the **Bombay High Court** upheld this decision, ruling that since the defecting legislators met the **two-thirds threshold**, their move constituted a “deemed merger” with the BJP.

24 फरवरी 2022 को, **बॉम्बे हाई कोर्ट** ने इस निर्णय को बरकरार रखते हुए कहा कि चूंकि दल-बदल करने वाले विधायक **दो-तिहाई सीमा** को पूरा करते हैं, इसलिए उनका कदम BJP के साथ “माना गया विलय” है।

- Notably, the High Court adopted a **disjunctive reading** of paragraph 4 and ruled that a “deemed” merger is triggered once two-thirds of a legislature party agrees to join another party, even without approval from the original political party at the national level.

विशेष रूप से, उच्च न्यायालय ने पैरा 4 की **अलग-अलग व्याख्या** अपनाई और निर्णय दिया कि “माना गया”



विलय तब माना जाएगा जब किसी विधानमंडलीय दल के दो-तिहाई सदस्य किसी अन्य दल में शामिल होने पर सहमत हो जाएं, भले ही राष्ट्रीय स्तर पर मूल राजनीतिक दल की स्वीकृति न हो।

What do experts say? (विशेषज्ञ क्या कहते हैं?)

- According to former **Lok Sabha Secretary-General P.D.T. Achary**, a valid merger under Paragraph 4 of the Tenth Schedule requires the original political party to first merge with another party, and then the decision to be backed by at least two-thirds of the legislature party.
पूर्व लोकसभा महासचिव पी.डी.टी. आचार्य के अनुसार, दसवीं अनुसूची के पैरा 4 के तहत एक वैध विलय के लिए पहले मूल राजनीतिक दल का किसी अन्य दल में विलय होना आवश्यक है और उसके बाद इस निर्णय को विधानमंडलीय दल के कम से कम दो-तिहाई सदस्यों का समर्थन मिलना चाहिए।
- “An interpretation faithful to the anti-defection law’s intent would mean that **Rajya Sabha MPs cannot, on their own, decide to merge with another party.**
“दल-बदल विरोधी कानून के उद्देश्य के प्रति वफादार व्याख्या का अर्थ होगा कि राज्यसभा सांसद अपने आप किसी अन्य दल में विलय का निर्णय नहीं ले सकते।
- In this case, it would require **Arvind Kejriwal to agree to a merger with the BJP,**” he said.
इस मामले में, **अरविंद केजरीवाल** को BJP के साथ विलय के लिए सहमत होना आवश्यक होगा,” उन्होंने कहा।
- Any member, he noted, may now move a **disqualification petition** before the **Rajya Sabha Chairman**, whose decision would be open to **judicial review.**
उन्होंने कहा कि अब कोई भी सदस्य **राज्यसभा अध्यक्ष** के समक्ष **अयोग्यता याचिका** दायर कर सकता है, जिसका निर्णय **न्यायिक समीक्षा** के अधीन होगा।
- However, **Swapnil Tripathi**, who heads **Charkha, the Constitutional Law Centre at the Vidhi Centre for Legal Policy**, said that the support of two-thirds of the AAP’s Rajya Sabha members could allow the move to be treated as a “deemed” merger under paragraph 4(2).
हालांकि, **स्वप्निल त्रिपाठी**, जो **विदि सेंटर फॉर लीगल पॉलिसी** के अंतर्गत **चर्खा, द कॉन्स्टिट्यूशनल लॉ सेंटर** के प्रमुख हैं, ने कहा कि AAP के राज्यसभा सदस्यों के दो-तिहाई समर्थन से इस कदम को पैरा 4(2) के तहत “माना गया” विलय माना जा सकता है।
- He, however, pointed to a larger anomaly that is likely to be challenged.
हालांकि, उन्होंने एक बड़े असामान्यता की ओर संकेत किया, जिसे चुनौती दी जा सकती है।
- “**Rajya Sabha MPs are elected by MLAs of State legislatures.**
“राज्यसभा सांसदों का चुनाव **राज्य विधानसभाओं के विधायकों** द्वारा किया जाता है।
- Here, the MLAs who elected these members continue to belong to the AAP in **Punjab**, while the MPs have switched to the BJP.
यहां, जिन विधायकों ने इन सदस्यों को चुना, वे **पंजाब** में अभी भी AAP से जुड़े हैं, जबकि सांसद BJP में चले गए हैं।
- This creates a **disconnect** between the electoral base and the MPs’ party affiliation, undermining the underlying objective of **Rajya Sabha representation,**” he said.
इससे निर्वाचन आधार और सांसदों की पार्टी संबद्धता के बीच **विसंगति** उत्पन्न होती है, जो **राज्यसभा प्रतिनिधित्व** के मूल उद्देश्य को कमजोर करती है,” उन्होंने कहा।

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TOPICS COVERED		
26A	Israel flies out 240 from Mizoram amid war scare युद्ध की आशंका के बीच इज़राइल ने मिज़ोरम से 240 लोगों को निकाला	
26A	What rules govern international waters?	



	अंतरराष्ट्रीय जल क्षेत्रों को कौन से नियम संचालित करते हैं?
26A	Iran's wartime apparatchik ईरान का युद्धकालीन तंत्रकार
26A	Downing Street says sovereignty of Falklands Islands rest with the U.K. डाउनिंग स्ट्रीट ने कहा कि फॉकलैंड द्वीपों की संप्रभुता यू.के. के पास है
26A	Bill seeking three-year pause on H-1B visas moved in U.S. Congress अमेरिकी कांग्रेस में H-1B वीज़ा पर तीन साल के विराम का बिल पेश

Chasing hope



Congolese refugees run behind the first repatriation convoy in Busuma camp, Burundi. The camp was set up after M23 fighters took control of the eastern Congolese city of Uvira, prompting a mass influx of people fleeing violence. Thousands of refugees have slowly trickled back home in the past few months after the Rwandan-backed rebels withdrew from the key town under international pressure. REUTERS

Congolese refugees run behind the first repatriation convoy in Busuma camp, Burundi. The camp was set up after M23 fighters took control of the eastern Congolese city of Uvira, prompting a mass influx of people fleeing violence. Thousands of refugees have slowly trickled back home in the past few months after the Rwandan-backed rebels withdrew from the key town under international pressure.

Israel flies out 240 from Mizoram amid war scare

GS II: IR

Kallol Bhattacharjee
NEW DELHI

An advisory by the Centre about the security situation in Israel, amid the ongoing war in West Asia, has come into focus after Israel flew around 240 individuals from Mizoram to Tel Aviv on Thursday as part of its 'Operation Wings of Dawn', sanctioned by Israeli Prime Minister Benjamin Netanyahu.

Though members of the Bnei Menashe community have been taken to Israel on earlier occasions, this is the first time that such a large number of them are being flown against the backdrop of the regional war.

The departure of the individuals from Mizoram has brought attention to the fact that since February 28, when the U.S.-Israel



Fresh start: A member of the Bnei Menashe community reacts upon arrival at Ben Gurion Airport near Tel Aviv on April 23. AFP

war against Iran started, the Centre has maintained a travel advisory for Indian nationals in Israel pointing at the "prevailing security situation in the region", indicating the high risk condition persisting in the country that has faced missile attacks from Iran as well as Lebanon's pro-Iran militia Hezbollah.

The Jewish Agency for

Israel (JAFI) said Thursday's flight from New Delhi carried the first of three batches of individuals from the Bnei Menashe community, who are generally found in Churachandpur of Manipur and in areas along the India-Myanmar border in Mizoram. The rest of the community members are expected to leave in the coming days.

In a statement, JAFI said: "The flight included dozens of young families, who will initially move into absorption centres in Nof HaGalil, where they will also reunite with relatives who made 'aliyah' (religious immigration) in previous years." The total number of such individuals is expected to be around 600, it added.

In response to The Hindu's questions, an official maintained that India did not provide any help to facilitate the flight and said, "India's responsibility is to ensure that our citizens are not human-trafficked while travelling abroad and that apart, we cannot stop anyone from undertaking legal migration."

Official sources said that while India's advisory on the prevailing security risk in Israel exists, Israeli agen-

cies managed to proceed with the operation, as it is a religious process that they have established.

According to The Jerusalem Post report, the new arrivals would be settled in Kiryat Yam, a suburb near Haifa.

The group arrived at Ben Gurion Airport under an initiative spearheaded by the Aliyah and Integration Ministry and JAFI. They are expected to be settled in the northern part of Israel, which has been in recent months targeted by the Hezbollah. Operation Wings of Dawn is the result of a decision made by Mr. Netanyahu, Minister of Aliyah and Integration, Ofir Sofer, and Minister of Finance, Bezalel Smotrich, to complete the immigration of the rest of the Bnei Menashe community from Mizoram and Manipur.

26A. Israel flies out 240 from Mizoram amid war scare

युद्ध की आशंका के बीच इज़राइल ने मिजोरम से 240 लोगों को निकाला

- An advisory by the Centre about the security situation in Israel, amid the ongoing war in West Asia, has come into focus after Israel flew around 240 individuals from Mizoram to Tel Aviv on Thursday as part of its 'Operation Wings of Dawn', sanctioned by Israeli Prime Minister Benjamin Netanyahu.



पश्चिम एशिया में जारी युद्ध के बीच इज़राइल की सुरक्षा स्थिति पर केंद्र द्वारा जारी परामर्श तब चर्चा में आया जब इज़राइल ने गुरुवार को अपने 'ऑपरेशन विंग्स ऑफ डॉन' के तहत मिजोरम से लगभग 240 लोगों को तेल अवीव भेजा, जिसे इज़राइली प्रधानमंत्री बेंजामिन नेतन्याहू ने मंजूरी दी।

- Though members of the **Bnei Menashe community** have been taken to Israel on earlier occasions, this is the first time that such a large number of them are being flown against the backdrop of the **regional war**.
हालांकि **बेनी मेनाशे समुदाय** के सदस्यों को पहले भी इज़राइल ले जाया गया है, लेकिन **क्षेत्रीय युद्ध** की पृष्ठभूमि में इतनी बड़ी संख्या में उन्हें पहली बार भेजा जा रहा है।
- The departure of the individuals from Mizoram has brought attention to the fact that since February 28, when the **U.S.-Israel war against Iran** started, the Centre has maintained a **travel advisory** for Indian nationals in Israel pointing at the "**prevailing security situation in the region**", indicating the **high risk condition** persisting in the country that has faced **missile attacks** from Iran as well as Lebanon's pro-Iran militia **Hezbollah**.
मिजोरम से इन लोगों के प्रस्थान ने इस तथ्य पर ध्यान आकर्षित किया है कि 28 फरवरी से, जब **ईरान के खिलाफ अमेरिका-इज़राइल युद्ध** शुरू हुआ, तब से केंद्र ने इज़राइल में भारतीय नागरिकों के लिए **यात्रा परामर्श** जारी रखा है, जिसमें "**क्षेत्र में प्रचलित सुरक्षा स्थिति**" की ओर संकेत किया गया है, जो उस देश में जारी **उच्च जोखिम की स्थिति** को दर्शाता है जिसने ईरान और लेबनान समर्थित मिलिशिया **हिज़बुल्लाह** से **मिसाइल हमलों** का सामना किया है।
- The **Jewish Agency for Israel (JAFI)** said Thursday's flight from **New Delhi** carried the first of three batches of individuals from the **Bnei Menashe community**, who are generally found in **Churachandpur of Manipur** and in areas along the **India-Myanmar border in Mizoram**.
ज्यूइश एजेंसी फॉर इज़राइल (JAFI) ने कहा कि गुरुवार की **नई दिल्ली** से उड़ान में **बेनी मेनाशे समुदाय** के पहले समूह के लोग थे, जो आमतौर पर **मणिपुर के चुराचांदपुर और मिजोरम में भारत-म्यांमार सीमा** के क्षेत्रों में पाए जाते हैं।
- The rest of the community members are expected to leave in the coming days.
समुदाय के बाकी सदस्यों के आने वाले दिनों में प्रस्थान करने की उम्मीद है।
- In a statement, JAFI said: "The flight included dozens of **young families**, who will initially move into **absorption centres in Nof HaGalil**, where they will also reunite with relatives who made '**aliyah**' (religious immigration) in previous years."
एक बयान में, JAFI ने कहा: "इस उड़ान में दर्जनों **युवा परिवार** शामिल थे, जो पहले **नोफ हागलील के अवशोषण केंद्रों** में जाएंगे, जहां वे उन रिश्तेदारों से भी मिलेंगे जिन्होंने पिछले वर्षों में '**अलियाह**' (धार्मिक प्रवास) किया था।"
- The total number of such individuals is expected to be around **600**, it added.
इस प्रकार के व्यक्तियों की कुल संख्या लगभग **600** होने की उम्मीद है, यह भी जोड़ा गया।
- In response to The Hindu's questions, an official maintained that India did not provide any help to facilitate the flight and said, "India's responsibility is to ensure that our citizens are not **human-trafficked** while travelling abroad and that apart, we cannot stop anyone from undertaking **legal migration**."
द हिंदू के प्रश्नों के जवाब में, एक अधिकारी ने कहा कि भारत ने इस उड़ान को सुगम बनाने में कोई सहायता नहीं दी और कहा, "भारत की जिम्मेदारी यह सुनिश्चित करना है कि हमारे नागरिक विदेश यात्रा के दौरान **मानव तस्करी** का शिकार न हों और इसके अलावा हम किसी को **वैध प्रवास** करने से नहीं रोक सकते।"
- Official sources said that while India's advisory on the prevailing **security risk in Israel** exists, Israeli agencies managed to proceed with the operation, as it is a **religious process** that they have established.
आधिकारिक स्रोतों ने कहा कि हालांकि इज़राइल में मौजूद **सुरक्षा जोखिम** पर भारत की सलाह जारी है, फिर भी इज़राइली एजेंसियां इस अभियान को आगे बढ़ाने में सफल रहीं क्योंकि यह एक स्थापित **धार्मिक प्रक्रिया** है।
- According to The Jerusalem Post report, the new arrivals would be settled in **Kiryat Yam**, a suburb near **Haifa**.
द जेरूसलम पोस्ट की रिपोर्ट के अनुसार, नए आगंतुकों को **हैफा** के पास स्थित **किर्यात याम** में बसाया जाएगा।



- The group arrived at **Ben Gurion Airport** under an initiative spearheaded by the **Aliyah and Integration Ministry** and JAFI.

यह समूह **बेन गुरियन हवाई अड्डे पर अलियाह और इंटीग्रेशन मंत्रालय** तथा JAFI की पहल के तहत पहुंचा।

- They are expected to be settled in the northern part of Israel, which has been in recent months targeted by Hezbollah.

उन्हें इज़राइल के उत्तरी हिस्से में बसाया जाने की उम्मीद है, जिसे हाल के महीनों में **हिज़बुल्लाह** द्वारा निशाना बनाया गया है।

- Operation Wings of Dawn** is the result of a decision made by Mr. **Netanyahu**, Minister of Aliyah and Integration, **Ofir Sofer**, and Minister of Finance, **Bezalel Smotrich**, to complete the immigration of the rest of the **Bnei Menashe community** from Mizoram and Manipur.

ऑपरेशन विंग्स ऑफ़ डॉन श्री नेतन्याहू, अलियाह और इंटीग्रेशन मंत्री **ओफिर सोफर**, और वित्त मंत्री **बेज़ालेल् स्मोट्रिच** के उस निर्णय का परिणाम है जिसमें मिजोरम और मणिपुर से शेष **बेनी मेनाशे समुदाय** के लोगों के प्रवास को पूरा करने का निर्णय लिया गया।

What rules govern international waters?

Can Iran legally restrict transit through the Strait of Hormuz? Is the U.S. blockade of the strait lawful? What is the legal position on interceptions? And in cases such as this, which organisation steps in and how? What can happen next?

SS II IR

MOB

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M. Kalyanaraman

The story so far:

In an escalation of the conflict on the Strait of Hormuz, Iran has attacked three ships, detaining two on its territorial waters. This is allegedly in response to U.S. forces seizing two ships, including a very large crude carrier linked to Iran, between Sri Lanka and Indonesia on the high seas.

What was the situation at Strait of Hormuz when war broke out?

Within a day of the war breaking out on February 28, transits across the Strait of Hormuz dwindled from some 100 vessels on a typical day to a handful. Iran put in place a system of allowing transits based on geopolitical considerations and a toll fee that media reports suggested ran to more than a million dollars per ship. India was among the biggest beneficiaries of the system, with Iran allowing some 10 Indian flagged ships and many foreign flagged ships carrying India's oil and gas supplies to pass.

The Indian government has said it has not paid any toll and was only exercising free navigation rights given to merchant ships as per international law and practice. Hundreds of Iranian vessels and vessels linked to Iran have crossed the strait meanwhile.

What did the U.S. do?

In talks with the U.S., Iran brought the Strait of Hormuz on the negotiating table, demanding the right to regulate and control the passage of ships and to charge a toll fee, partly to rebuild its economy.

Following the collapse of the peace talks on April 12, U.S. President Donald Trump announced a blockade of Iranian ships. This was less a physical blockade using naval ships and

The seas are a shared global commons that must be collectively managed. Freedom of navigation, especially for merchant ships, is to be upheld, with minimal exceptions

more a declaration of control exercised through measures such as radio warnings. The aim was partly to dismantle the regime Iran had put in place to control ship transits, and to deter Iranian ships that had until then navigated freely through the strait. Dozens of Iranian ships are reported to have been turned back.

On April 19-20, the U.S. intercepted, disabled and boarded the ship container *Touska*, an Iranian-owned and managed container ship with a cargo-carrying capacity of more than 60,000 tonnes. The U.S. said it suspects the ship was carrying cargo that could be used for military purposes.

At around the same time, U.S. forces intercepted *Tijani*, a very large crude carrier that can carry 2 million barrels of oil, between Sri Lanka and Indonesia in international waters. The U.S. says the ship was involved in the Iranian oil trade. Both vessels are in the custody of U.S. armed forces. These actions are part of efforts to cut off Iran's income sources.

How has Iran reacted?

On April 16, Mr. Trump said the strait was fully open. However, with the U.S. blockade of Iranian ships in full swing, nearly a dozen India-flagged and foreign ships bound for India lined up to transit the strait on April 17-18.

The Islamic Revolutionary Guard Corps Navy fired on two Indian-flagged ships – *Sannar Herald* and *Jag Arnav* – and ordered them to go back. Along with these two, all ships barring one returned to the Persian Gulf. India lodged a protest with the Iranian Ambassador over this.

On April 23, Iran captured *Francesca* and *Epaninondas*, two container ships seeking to exit the strait, and fired at a third one, as retaliation against the U.S. blockade of Iranian ports and the capture of Iranian ships. Iran had said the two vessels had "endangered maritime security by operating without the necessary permits and tampering with navigation systems." The two vessels are in Iran's custody.

A third ship, *Euphoria*, with Indian crew, which was shot at, is reportedly not in Iranian custody. Iran has said unless the U.S. blockade is lifted, the strait cannot be reopened for traffic.

What is the legal position on such interceptions?

Straits have long been a focus of conflict or provided leverage to belligerent parties during wars. Various treaties and agreements were signed, especially in the 20th century, establishing rights and duties for many naturally forming straits, such as across Turkey and Egypt and the Tiran Island near the Gulf of Aqaba. To create a comprehensive legal framework

for the world's waters, the United Nations Convention on the Law of the Sea (UNCLOS) was negotiated over nearly two decades and came into force in 1994. Its core principle is that the seas are a shared global commons that must be collectively managed. Freedom of navigation, especially for merchant ships, is to be upheld, with minimal exceptions. The high seas fall outside the jurisdiction of any single nation.

The U.S. imposes sanctions on government agencies and companies linked to countries it is in conflict with, as a form of economic warfare. These sanctions restrict access to funds and make business transactions difficult. However, they are based on U.S. law, not international law, and are not authorised by the United Nations. The U.S. has also intercepted ships trading in Venezuelan oil and carrying oil to Cuba.

International law upholds unfettered freedom of navigation of merchant ships on the high seas. Exceptions include hot pursuit of vessels that have committed crimes in territorial waters, explicit authorisation by the UN Security Council, vessels without nationality, or cases where the flag state consents to interception. At times, the U.S. has cited the latter grounds.

Outside the high seas, such as in territorial waters, "innocent" passage rights apply to merchant ships and even warships. "Innocent" means the ship does not pose a threat to the nation.

Does Iran have any rights over the Strait of Hormuz?

The strait is an international passage. But at its narrowest point, the territorial waters of the two border states – Iran and Oman – intersect, which means there is no high seas or exclusive economic zone there. As per UNCLOS, instead of the freedom of navigation accorded in the high seas, the concept of "transit" is applied.

As per UNCLOS, transit recognises free, unhindered passage to foreign ships. Iran cannot regulate ship traffic nor deny permission to merchant ships seeking to transit. But a few restrictions are allowed: ships must move continuously and without delay; designated traffic routes, recently revised by Iran, must be followed; ships should enter solely for the purpose of transiting the strait; and vessels must not load or unload goods in violation of the laws of Iran or Oman.

What can happen next?

The UN agency that could potentially resolve the issue is the International Maritime Organization (IMO). The IMO has indicated it is working with Iran to resolve the issue. It has proposed a plan to facilitate the evacuation of ships while upholding freedom of navigation. The IMO has decreed tolls and permits. The IMO Council had passed a resolution severely condemning Iran for attacks on commercial vessels and seeking to choke the Strait of Hormuz, but it has not been critical of the U.S.'s actions and blockade.



U.S. forces patrolling the Arabian Sea near Touska, an Iranian-flagged cargo ship, on April 20. AFP

26A. What rules govern international waters?

अंतरराष्ट्रीय जल क्षेत्रों को कौन से नियम संचालित करते हैं?

- The seas are a shared **global commons** that must be **collectively managed**. समुद्र एक साझा वैश्विक सार्वजनिक संसाधन हैं जिनका सामूहिक प्रबंधन आवश्यक है।
- Freedom of navigation**, especially for **merchant ships**, is to be upheld, with minimal exceptions.



विशेष रूप से व्यापारी जहाजों के लिए नौवहन की स्वतंत्रता को न्यूनतम अपवादों के साथ बनाए रखा जाना चाहिए।

- **Can Iran legally restrict transit through the Strait of Hormuz?**
क्या ईरान कानूनी रूप से होर्मुज़ जलडमरूमध्य के माध्यम से पारगमन को प्रतिबंधित कर सकता है?
- **Is the U.S. blockade of the strait lawful?**
क्या जलडमरूमध्य की अमेरिकी नाकाबंदी वैध है?
- **What is the legal position on interceptions?**
अवरोधन (इंटरसेप्शन) के संबंध में कानूनी स्थिति क्या है?
- **And in cases such as this, which organisation steps in and how?**
और इस प्रकार के मामलों में कौन सा संगठन हस्तक्षेप करता है और कैसे?
- **What can happen next?**
आगे क्या हो सकता है?
- **In an escalation of the conflict on the Strait of Hormuz, Iran has attacked three ships, detaining two on its territorial waters.**
होर्मुज़ जलडमरूमध्य पर संघर्ष के बढ़ने के क्रम में, ईरान ने तीन जहाजों पर हमला किया है और उनमें से दो को अपने क्षेत्रीय जल में हिरासत में लिया है।
- **This is allegedly in response to U.S. forces seizing two ships, including a very large crude carrier linked to Iran, between Sri Lanka and Indonesia on the high seas.**
यह कथित रूप से अमेरिकी बलों द्वारा दो जहाजों को जब्त करने के जवाब में है, जिनमें एक ईरान से जुड़ा बहुत बड़ा कच्चा तेल वाहक शामिल है, जो श्रीलंका और इंडोनेशिया के बीच अंतरराष्ट्रीय समुद्र में था।
- **What was the situation at Strait of Hormuz when war broke out? (युद्ध शुरू होने पर होर्मुज़ जलडमरूमध्य की स्थिति क्या थी?)**
- **Within a day of the war breaking out on February 28, transits across the Strait of Hormuz dwindled from some 100 vessels on a typical day to a handful.**
28 फरवरी को युद्ध शुरू होने के एक दिन के भीतर, होर्मुज़ जलडमरूमध्य से गुजरने वाले जहाजों की संख्या सामान्यतः लगभग 100 से घटकर बहुत कम रह गई।
- **Iran put in place a system of allowing transits based on geopolitical considerations and a toll fee that media reports suggested ran to more than a million dollars per ship.**
ईरान ने भूराजनीतिक विचारों के आधार पर पारगमन की अनुमति देने की व्यवस्था लागू की और एक टोल शुल्क लगाया, जो मीडिया रिपोर्ट्स के अनुसार प्रति जहाज एक मिलियन डॉलर से अधिक था।
- **India was among the biggest beneficiaries of the system, with Iran allowing some 10 Indian-flagged ships and many foreign-flagged ships carrying India's oil and gas supplies to pass.**
भारत इस प्रणाली का सबसे बड़ा लाभार्थी था, जहां ईरान ने लगभग 10 भारतीय ध्वज वाले जहाजों और कई विदेशी ध्वज वाले जहाजों को, जो भारत की तेल और गैस आपूर्ति ले जा रहे थे, पारगमन की अनुमति दी।
- **The Indian government has said it has not paid any toll and was only exercising free navigation rights given to merchant ships as per international law and practice.**
भारतीय सरकार ने कहा है कि उसने कोई टोल नहीं चुकाया और केवल अंतरराष्ट्रीय कानून और प्रथा के अनुसार व्यापारिक जहाजों को दिए गए मुक्त नौवहन अधिकारों का उपयोग किया।

What did the U.S. do? (अमेरिका ने क्या किया?)

- **In talks with the U.S., Iran brought the Strait of Hormuz on the negotiating table, demanding the right to regulate and control the passage of ships and to charge a toll fee, partly to rebuild its economy.**
अमेरिका के साथ वार्ता में, ईरान ने होर्मुज़ जलडमरूमध्य को बातचीत के एजेंडे पर रखा और जहाजों के आवागमन को नियंत्रित करने तथा टोल शुल्क लगाने का अधिकार मांगा, ताकि अपनी अर्थव्यवस्था को पुनर्निर्मित किया जा सके।



What is the legal position on such interceptions? (ऐसे अवरोधन पर कानूनी स्थिति क्या है?)

- Straits have long been a focus of **conflict** or provided leverage to **belligerent parties** during wars.
जलडमरूमध्य लंबे समय से **संघर्ष** का केंद्र रहे हैं या युद्धों के दौरान **युद्धरत पक्षों** को रणनीतिक लाभ प्रदान करते रहे हैं।
- Various **treaties and agreements** were signed, especially in the **20th century**, establishing rights and duties for many naturally forming straits, such as across **Turkey and Egypt and the Tiran Island near the Gulf of Aqaba**.
विशेष रूप से **20वीं सदी** में विभिन्न **संधियाँ और समझौते** किए गए, जिन्होंने कई प्राकृतिक जलडमरूमध्यों के लिए अधिकार और कर्तव्य निर्धारित किए, जैसे **तुर्की, मिस्र और अकाबा की खाड़ी के पास स्थित टिरान द्वीप**।
- To create a comprehensive legal framework for the world's waters, the **United Nations Convention on the Law of the Sea (UNCLOS)** was negotiated over nearly two decades and **came into force in 1994**.
विश्व के जल क्षेत्रों के लिए एक व्यापक कानूनी ढांचा बनाने हेतु, **संयुक्त राष्ट्र समुद्र कानून सम्मेलन (UNCLOS)** पर लगभग दो दशकों तक बातचीत की गई और यह **1994** में लागू हुआ।
- Its core principle is that the **seas are a shared global commons that must be collectively managed**.
इसका मूल सिद्धांत यह है कि समुद्र एक साझा **वैश्विक संपत्ति** है, जिन्हें सामूहिक रूप से प्रबंधित किया जाना चाहिए।
- **Freedom of navigation, especially for merchant ships, is to be upheld, with minimal exceptions**.
नौवहन की स्वतंत्रता, विशेषकर **व्यापारी जहाजों** के लिए, न्यूनतम अपवादों के साथ बनाए रखी जानी चाहिए।
- The **high seas fall outside the jurisdiction of any single nation**.
अंतरराष्ट्रीय समुद्र (हाई सीज़) किसी एक राष्ट्र के अधिकार क्षेत्र से बाहर होते हैं।
- The **U.S. imposes sanctions on government agencies and companies linked to countries it is in conflict with, as a form of economic warfare**.
अमेरिका उन देशों से जुड़े सरकारी एजेंसियों और कंपनियों पर **प्रतिबंध** लगाता है जिनसे उसका संघर्ष है, जो **आर्थिक युद्ध** का एक रूप है।
- **These sanctions restrict access to funds and make business transactions difficult**.
ये प्रतिबंध वित्त तक पहुंच को सीमित करते हैं और **व्यावसायिक लेनदेन** को कठिन बना देते हैं।
- **However, they are based on U.S. law, not international law, and are not authorised by the United Nations**.
हालांकि, ये **अमेरिकी कानून** पर आधारित हैं, न कि **अंतरराष्ट्रीय कानून** पर, और इन्हें **संयुक्त राष्ट्र** द्वारा अधिकृत नहीं किया गया है।
- The **U.S. has also intercepted ships trading in Venezuelan oil and carrying oil to Cuba**.
अमेरिका ने **वेनेजुएला के तेल** के व्यापार में लगे और **क्यूबा** को तेल ले जाने वाले जहाजों को भी रोका है।
- **International law upholds unfettered freedom of navigation of merchant ships on the high seas**.
अंतरराष्ट्रीय कानून, अंतरराष्ट्रीय समुद्रों में व्यापारी जहाजों की निर्बाध **नौवहन स्वतंत्रता** को बनाए रखता है।
- Exceptions include **hot pursuit** of vessels that have committed crimes in **territorial waters**, explicit authorisation by the **UN Security Council**, vessels without nationality, or cases where the **flag state consents** to interception.
अपवादों में **क्षेत्रीय जल** में अपराध करने वाले जहाजों का **हॉट पर्स्यूट**, **संयुक्त राष्ट्र सुरक्षा परिषद** की स्पष्ट अनुमति, बिना राष्ट्रीयता वाले जहाज, या ऐसे मामले शामिल हैं जहां **ध्वज राज्य की सहमति** से अवरोधन किया जाता है।
- At times, the U.S. has cited the latter grounds.
कभी-कभी अमेरिका ने अंतिम आधार का हवाला दिया है।



- Outside the high seas, such as in **territorial waters**, “**innocent passage**” rights apply to merchant ships and even warships.
अंतरराष्ट्रीय समुद्र के बाहर, जैसे **क्षेत्रीय जल** में, व्यापारी जहाजों और यहां तक कि युद्धपोतों पर भी “**निर्दोष पारगमन**” अधिकार लागू होते हैं।
- ‘**Innocent**’ means the ship does not pose a threat to the nation.
‘**निर्दोष**’ का अर्थ है कि जहाज राष्ट्र के लिए कोई खतरा उत्पन्न नहीं करता।
- **Does Iran have any rights over the Strait of Hormuz? (क्या ईरान को हॉर्मुज़ जलडमरूमध्य पर कोई अधिकार है?)**
- The strait is an **international passage**.
यह जलडमरूमध्य एक **अंतरराष्ट्रीय मार्ग** है।
- But at its narrowest point, the **territorial waters** of the two border states — **Iran and Oman** — intersect, which means there is no **high seas** or **exclusive economic zone** there.
लेकिन इसके सबसे संकरे स्थान पर, दो सीमावर्ती देशों — **ईरान और ओमान** — के **क्षेत्रीय जल** आपस में मिलते हैं, जिसका अर्थ है कि वहां कोई **अंतरराष्ट्रीय समुद्र** या **विशेष आर्थिक क्षेत्र** नहीं है।
- As per **UNCLOS**, instead of the freedom of navigation accorded in the high seas, the concept of “**transit**” is applied.
UNCLOS के अनुसार, अंतरराष्ट्रीय समुद्रों में दी गई नौवहन स्वतंत्रता के स्थान पर “**ट्रांजिट**” की अवधारणा लागू होती है।
- As per **UNCLOS**, transit recognises free, unhindered passage to foreign ships.
UNCLOS के अनुसार, ट्रांजिट विदेशी जहाजों को स्वतंत्र और बिना बाधा के पारगमन का अधिकार देता है।
- **Iran cannot regulate ship traffic nor deny permission to merchant ships seeking to transit.**
ईरान **जहाज यातायात** को नियंत्रित नहीं कर सकता और न ही पारगमन करने वाले व्यापारी जहाजों को अनुमति से वंचित कर सकता है।
- **But a few restrictions are allowed: ships must move continuously and without delay; designated traffic routes, recently revised by Iran, must be followed; ships should enter solely for the purpose of transiting the strait; and vessels must not load or unload goods in violation of the laws of Iran or Oman.**
लेकिन कुछ प्रतिबंध अनुमत हैं: जहाजों को लगातार और बिना विलंब के चलना चाहिए; निर्धारित **यातायात मार्गों**, जिन्हें हाल ही में ईरान ने संशोधित किया है, का पालन करना चाहिए; जहाज केवल जलडमरूमध्य पार करने के उद्देश्य से प्रवेश करें; और जहाजों को ईरान या ओमान के कानूनों का उल्लंघन करते हुए माल लोड या अनलोड नहीं करना चाहिए।

What can happen next? (आगे क्या हो सकता है?)

- The **UN agency that could potentially resolve the issue is the International Maritime Organization (IMO)**.
वह **संयुक्त राष्ट्र एजेंसी** जो इस मुद्दे को संभावित रूप से सुलझा सकती है, वह **अंतरराष्ट्रीय समुद्री संगठन (IMO)** है।
- The IMO has indicated it is working with Iran to resolve the issue.
IMO ने संकेत दिया है कि वह इस मुद्दे को हल करने के लिए ईरान के साथ कार्य कर रहा है।
- **It has proposed a plan to facilitate the evacuation of ships while upholding freedom of navigation.**
इसने **नौवहन की स्वतंत्रता** को बनाए रखते हुए **जहाजों की निकासी** को सुगम बनाने की योजना प्रस्तावित की है।
- The **IMO has decried tolls and permits**.
IMO ने **टोल और परमिट** का विरोध किया है।
- The IMO Council had passed a **resolution** severely condemning Iran for attacks on **commercial vessels** and seeking to choke the **Strait of Hormuz**, but it has not been critical



of the U.S.'s actions and blockade.

IMO परिषद ने वाणिज्यिक जहाजों पर हमलों और हॉर्मुज़ जलडमरूमध्य को अवरुद्ध करने के प्रयासों के लिए ईरान की कड़ी निंदा करते हुए एक प्रस्ताव पारित किया, लेकिन उसने अमेरिका की कारवाइयों और नाकेबंदी की आलोचना नहीं की।

Iran's wartime apparatchik

Mohammad-Bagher Ghalibaf

In a country caught between external attacks and internal pressure, with much of its top leadership killed by its enemies, the **Parliament Speaker**, who cut his teeth in the 1980-88 Iran-Iraq war and served the IRGC as a commander, emerged as the **new face of the revolutionary system**

ISSUE: 18
Stability: 10/10

Listen up... You come for our home, you are going to meet the whole family, locked, loaded and standing tall. Bring it on," Mohammad-Bagher Ghalibaf, Speaker of Iran's Parliament, Majles, wrote in a long social media post on April 2, amid speculations that the U.S. would launch a ground offensive in Iran. "Let me tell you something straight from the gut. Iranians don't just talk about defending their country, we bleed for it. We have done it before and we are ready to do it again," he added. Mr. Ghalibaf's comments were the strongest warning against any U.S. plan to launch a ground attack.

Already the face of Iran's resistance, Mr. Ghalibaf, 64, wrote back-to-back social media posts, often rebutting U.S. President Donald Trump's claims that Iran had been defeated, and reminding the U.S. and the wider world of the real economic costs of the war. Late last month, Mr. Trump threatened to destroy Iran's power plants and other civilian infrastructure if Tehran did not reopen the Strait of Hormuz and agree to a deal. Iran did not flinch.

On April 8, Mr. Trump announced a two-week ceasefire (which was extended later). As the U.S. shifted from active war to diplomacy, Mr. Ghalibaf, a former Revolutionary Guard commander and a police chief, emerged as the chief negotiator of the Islamic Republic.

Before the U.S. and Israel launched the war on Iran on February 28, Mr. Ghalibaf was just one of the top leaders. Constitutionally, the elected President holds the most powerful position in Iran after the Supreme Leader. But President Masoud Pezeshkian's focus had been on running the day-to-day affairs of the country. When it came to matters of security and strategy, Ali Khamenei had three confidants — Ali Shamkhani, chief of the newly created Defence Council; Ali Larjani, Secretary of the Security Council; and M.B. Ghalibaf.

Of the three, Larjani, a bridge between Iran's security establishment and its civilian political class, was arguably the most influential.

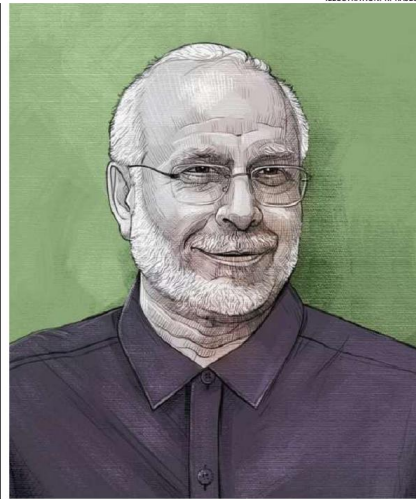
Khamenei and Shamkhani were assassinated on February 28, the first day of the war. Larjani, who had emerged as a wartime leader, was killed in an Israeli strike on March 17. In a country caught between external attacks and internal pressure, with much of its top leadership killed by its enemies, Mr. Ghalibaf, who cut his teeth in the 1980-88 Iran-Iraq war, emerged as the new apparatchik in charge. He embraced the role with a mix of revolutionary fervour and pragmatic resolve.

Links to IRGC

Born in 1961 in the small city of Torqabeh in northeast Iran, Mohammad Ghalibaf was barely an adult when the country witnessed its biggest political earthquake of the century. Shah Mohammad Reza Pahlavi, the monarch of Iran, was toppled by a mass movement in February 1979. Ayatollah Ruhollah Khomeini, a top Shia cleric who was in exile in France, returned to the country to take the reins of the post-Shah Iran. In the subsequent weeks and months, Iran underwent a radical transformation from a secular dictatorial monarchy to an Islamist theocratic semi-democracy.

Khomeini founded the Islamic Revolutionary Guard Corps (IRGC), an ideologically driven paramilitary group whose primary job was to protect the revolution and the state. Like many of his generation, Mr. Ghalibaf was also moved by what French philosopher Michel Foucault called the "political spirituality" and the "collective will" of the revolution. When Iraq invaded Iran in 1980, Mr. Ghalibaf joined the war as a frontline soldier of the IRGC.

His brother Hassan was killed during the conflict. "Back when I was 18 years old, I grabbed my rifle and ran straight into the fight to defend... Iran, the only home I ever knew," Mr. Ghalibaf said recently, recalling the Iran-Iraq war. "My own brother, Hassan, laid it all on the line in that same fight for our homeland. I still ache to wrap my arms around him one more time. That kind of pain never leaves a man," he said. In 1982, at age 21, he became the chief commander of the IRGC Imam Reza Brigade and then



the chief commander of the Fifth Nasr Division. In 1994, four years after the Iran-Iraq war, he was appointed the head of the Khatam Al-Anbia Construction, the engineering arm of the IRGC, by Ali Khamenei. Mr. Ghalibaf studied political geography at the University of Tehran for his master's degree and completed his PhD on the evolution of local institutions in Iran at Tarbiat Modares University. His rise as one of the key figures of the Islamic Republic was cemented in 1997 when Ali Khamenei named him as the IRGC Aerospace Force commander. He also completed Airbus pilot training in France and served as a professor of political geography at the University of Tehran. In October 2024, amid Israeli air strikes on Lebanon, Mr. Ghalibaf

appeared in a video showing him at the controls of an aircraft approaching Beirut.

In Iran's political spectrum, divided between 'principalists' (hardliners) and moderates/reformists, Mr. Ghalibaf placed himself as a centre-conservative politician. In July 1999, when Tehran University students held sustained protests demanding reforms, Mr. Ghalibaf was among a group of commanders who signed a letter to reformist President Mohammad Khatami, asking him to end the unrest. The commanders said their "cup of patience was full" and they would take action "if the government did not control the unrest", according to the confidential letter, which was published by the *Kayhan* newspaper.

In 2005, he became Mayor of Tehran, after an unsuccessful presidential bid. As Mayor, he was seen by many as "the man who gets things done", but he also faced corruption allegations over the functioning of the city administration. Mr. Ghalibaf ran for president again in 2013. This time, he was the main conservative candidate, but finished second to Hassan Rouhani, the moderate cleric who later signed the 2015 nuclear deal with the U.S. In 2020, after principalists regained a majority in the Majles, Mr. Ghalibaf was elected Speaker of the House.

Turbulent phase

His speakership has coincided with one of the most tumultuous phases in the history of the Islamic Republic. A sitting President was killed in a helicopter crash; the Supreme Leader was assassinated; and the country, his "beloved, unbreakable Iran", was bombed twice. There were also massive protests, which he dismissed as being led by "terrorists". Even when the political environment around him was radically transformed, Mr. Ghalibaf has remained largely nonchalant.

He once aspired to become President of the Islamic Republic. Now, he is arguably a more influential figure than the President himself. Many of his comrades were killed in the war. Even with a ceasefire in place with the U.S., the conflict is far from resolved. Washington continues to exert economic pressure on Iran through a blockade in the Gulf of Oman. The Islamic Republic may have survived the war, but its economy remains in deep trouble.

For Mr. Ghalibaf, the biggest challenge of his military and political career still lies ahead: steering the country, now ruled by a mysterious new Supreme Leader who is reportedly wounded, out of the war with a favourable strategic outcome, but without yielding to the dictates of the "Great Satan". "We do not accept negotiations under the shadow of threats," he said on April 20. "Over the past two weeks we have been preparing to reveal new cards on the battlefield," he added.

THE GIST

▼ Born in 1961 in the small city of Torqabeh in northeast Iran, Mohammad Ghalibaf was barely an adult when the country witnessed its biggest political earthquake of the century—the 1979 Islamic Revolution.

▼ In 2005, he became Mayor of Tehran, after an unsuccessful presidential bid. As Mayor, he was seen by many as "the man who gets things done", but also faced corruption allegations.

▼ In 2020, after principalists regained a majority in the Majles, Mr. Ghalibaf was elected Speaker of the House.

26A. Iran's wartime apparatchik

ईरान का युद्धकालीन तंत्रकार

- In a country caught between **external attacks** and **internal pressure**, with much of its **top leadership** killed by its enemies, the **Parliament Speaker**, who cut his teeth in the **1980-88 Iran-Iraq war** and served the **IRGC** as a commander, emerged as the **new face of the revolutionary system**.

एक ऐसे देश में जो बाहरी हमलों और आंतरिक दबाव के बीच फंसा हुआ है, जहां उसके अधिकांश शीर्ष नेतृत्व की हत्या कर दी गई है, वहां संसद अध्यक्ष, जिन्होंने 1980-88 ईरान-इराक युद्ध में अनुभव प्राप्त किया और IRGC में कमांडर रहे, क्रांतिकारी प्रणाली के नए चेहरे के रूप में उभरे।

- "Listen up... You come for our home, you are going to meet the whole family, locked, loaded and standing tall.
"सुनो... यदि तुम हमारे घर पर आओगे, तो तुम्हें पूरे परिवार का सामना करना पड़ेगा, जो तैयार और दृढ़ खड़ा है।



- Bring it on," **Mohammad-Bagher Ghalibaf**, Speaker of **Iran's Parliament (Majles)**, wrote in a long social media post on April 2, amid speculations that the **U.S.** would launch a ground offensive in **Iran**.
"आओ," **मोहम्मद-बाघेर गालिबाफ, ईरान की संसद (मजलिस)** के अध्यक्ष ने 2 अप्रैल को सोशल मीडिया पोस्ट में लिखा, जब **अमेरिका** द्वारा **ईरान** पर जमीनी हमला करने की अटकलें थीं।
- "Let me tell you something straight from the gut.
"मैं तुम्हें दिल से एक बात बताता हूँ।
- **Iranians don't just talk about defending their country, we bleed for it.**
ईरानी केवल अपने देश की रक्षा की बात नहीं करते, वे इसके लिए खून बहाते हैं।
- **We have done it before and we are ready to do it again,"** he added.
हमने पहले भी ऐसा किया है और फिर से करने के लिए तैयार हैं," उन्होंने कहा।
- **Mr. Ghalibaf's comments were the strongest warning against any U.S. plan to launch a ground attack.**
गालिबाफ की टिप्पणियां किसी भी **अमेरिकी योजना** के खिलाफ सबसे कड़ी चेतावनी थीं।
- **Already the face of Iran's resistance**, Mr. Ghalibaf, 64, wrote back-to-back social media posts, often rebutting **U.S. President Donald Trump's claims** that Iran had been defeated, and reminding the world of the **economic costs of war**.
पहले से ही ईरान के **प्रतिरोध** का चेहरा बने 64 वर्षीय गालिबाफ ने लगातार सोशल मीडिया पोस्ट किए, जिनमें उन्होंने **अमेरिकी राष्ट्रपति डोनाल्ड ट्रंप के दावों** का खंडन किया और दुनिया को **युद्ध की आर्थिक लागत** की याद दिलाई।
- **Late last month, Mr. Trump threatened to destroy Iran's power plants and other civilian infrastructure** if Tehran did not reopen the **Strait of Hormuz** and agree to a deal.
पिछले महीने के अंत में, ट्रंप ने ईरान के **बिजली संयंत्रों** और अन्य **नागरिक ढांचे** को नष्ट करने की धमकी दी यदि तेहरान **हॉर्मुज जलडमरूमध्य** को फिर से नहीं खोलता और समझौता नहीं करता।
- **Iran did not flinch.**
ईरान नहीं डगमगाया।
- **On April 8, Mr. Trump announced a two-week ceasefire** (which was extended later).
8 अप्रैल को ट्रंप ने **दो सप्ताह के युद्धविराम** की घोषणा की (जिसे बाद में बढ़ाया गया)।
- **As the U.S. shifted from active war to diplomacy, Mr. Ghalibaf, a former Revolutionary Guard commander and a police chief, emerged as the chief negotiator of the Islamic Republic.**
जैसे ही अमेरिका सक्रिय युद्ध से कूटनीति की ओर बढ़ा, पूर्व **रिवोल्यूशनरी गार्ड कमांडर** और **पुलिस प्रमुख** गालिबाफ **इस्लामिक रिपब्लिक** के मुख्य वार्ताकार के रूप में उभरे।
- **Before the U.S. and Israel launched the war on Iran on February 28, Mr. Ghalibaf was just one of the top leaders.**
28 फरवरी को अमेरिका और इज़राइल द्वारा ईरान पर युद्ध शुरू करने से पहले गालिबाफ केवल शीर्ष नेताओं में से एक थे।
- **Constitutionally, the elected President holds the most powerful position after the Supreme Leader.**
संवैधानिक रूप से, निर्वाचित **राष्ट्रपति सुप्रीम लीडर** के बाद सबसे शक्तिशाली पद होता है।
- **But President Masoud Pezeshkian's focus had been on day-to-day affairs.**
लेकिन राष्ट्रपति **मसूद पेज़ेशिकियन** का ध्यान दैनिक कार्यों पर था।
- **When it came to security and strategy, Ali Khamenei had three confidants — Ali Shamkhani, Ali Larijani, and M.B. Ghalibaf.**
सुरक्षा और रणनीति के मामलों में **अली खामेनेई** के तीन करीबी थे — **अली शामखानी, अली लारिजानी, और एम.बी. गालिबाफ**।
- **Of the three, Larijani was arguably the most influential.**
इनमें लारिजानी सबसे प्रभावशाली माने जाते थे।



- Khamenei and Shamkhani were assassinated on February 28.
खामेनेई और शामखानी की 28 फरवरी को हत्या कर दी गई।
- Larijani was killed in an Israeli strike on March 17.
लारिजानी की 17 मार्च को इज़राइली हमले में मौत हो गई।
- In a country under pressure, Mr. Ghalibaf emerged as the new **apparatchik in charge**.
ऐसे दबावग्रस्त देश में गालिबाफ नए **प्रमुख तंत्रकार** के रूप में उभरे।
- He embraced the role with **revolutionary fervour** and **pragmatic resolve**.
उन्होंने इस भूमिका को **क्रांतिकारी उत्साह** और **व्यावहारिक संकल्प** के साथ अपनाया।

Links to IRGC

IRGC से संबंध

- Born in 1961 in **Torqabeh**, Mohammad Ghalibaf witnessed the **1979 Iranian Revolution**.
1961 में **तोर्काबेह** में जन्मे गालिबाफ ने **1979 की ईरानी क्रांति** देखी।
- **Shah Mohammad Reza Pahlavi** was toppled and **Ayatollah Ruhollah Khomeini** took power.
शाह मोहम्मद रज़ा पहलवी को हटाया गया और **आयतुल्लाह रुहोल्लाह खोमैनी** सत्ता में आए।
- Iran transformed into an **Islamist theocratic semi-democracy**.
ईरान एक **इस्लामिक धर्मतांत्रिक अर्ध-लोकतंत्र** में बदल गया।
- Khomeini founded the **IRGC** to protect the revolution.
खोमैनी ने क्रांति की रक्षा के लिए **IRGC** की स्थापना की।
- When Iraq invaded Iran in 1980, Mr. Ghalibaf joined as a **frontline soldier**.
1980 में इराक के आक्रमण पर गालिबाफ **फ्रंटलाइन सैनिक** के रूप में शामिल हुए।
- His brother **Hassan** was killed in the conflict.
उनके भाई **हसन** युद्ध में मारे गए।
- At 21, he became a commander in the **IRGC**.
21 वर्ष की उम्र में वह **IRGC** में कमांडर बने।
- In 1994, he headed **Khatam Al-Anbia Construction**.
1994 में उन्होंने **खातम अल-अनबिया कंस्ट्रक्शन** का नेतृत्व किया।
- He studied at the **University of Tehran** and completed a PhD.
उन्होंने **तेहरान विश्वविद्यालय** से अध्ययन किया और पीएचडी पूरी की।
- In 1997, he became commander of the **IRGC Aerospace Force**.
1997 में वह **IRGC एयरोस्पेस फोर्स** के कमांडर बने।
- He also trained as an **Airbus pilot** in France.
उन्होंने फ्रांस में **एयरबस पायलट** प्रशिक्षण भी लिया।
- In 2005, he became **Mayor of Tehran**.
2005 में वह **तेहरान के मेयर** बने।
- He ran for President in 2013 but lost to **Hassan Rouhani**.
2013 में उन्होंने राष्ट्रपति चुनाव लड़ा लेकिन **हसन रुहानी** से हार गए।
- In 2020, he became **Speaker of Majles**.
2020 में वह **मजलिस के अध्यक्ष** बने।

Turbulent phase

उथल-पुथल का दौर

- His tenure saw a **President killed, Supreme Leader assassinated**, and repeated attacks on Iran.
उनके कार्यकाल में **राष्ट्रपति की मृत्यु, सुप्रीम लीडर की हत्या**, और ईरान पर बार-बार हमले हुए।



- There were also **mass protests**, which he called led by “terrorists”. साथ ही **जन-आंदोलन** हुए, जिन्हें उन्होंने “आतंकवादियों” द्वारा संचालित बताया।
- Despite turmoil, he remained **nonchalant**. उथल-पुथल के बावजूद वह **निश्चिंत** बने रहे।
- He once aspired to be President but is now more influential. वह कभी राष्ट्रपति बनना चाहते थे लेकिन अब अधिक प्रभावशाली हैं।
- The **conflict** is far from resolved despite a ceasefire. युद्धविराम के बावजूद **संघर्ष** अभी खत्म नहीं हुआ है।
- The U.S. continues **economic pressure** through blockade. अमेरिका **आर्थिक दबाव** बनाए हुए है।
- Iran’s **economy remains in trouble**. ईरान की **अर्थव्यवस्था संकट** में है।
- For Mr. Ghalibaf, the biggest challenge is steering the country to a **favourable strategic outcome** without yielding to the ‘**Great Satan**’. गालिबाफ के लिए सबसे बड़ी चुनौती देश को **अनुकूल रणनीतिक परिणाम** तक ले जाना है, बिना ‘**ग्रेट सैटन**’ के दबाव में आए।
- “We do not accept negotiations under the shadow of threats,” he said on April 20. “हम धमकियों की छाया में वार्ता स्वीकार नहीं करते,” उन्होंने 20 अप्रैल को कहा।
- “Over the past two weeks we have been preparing to reveal new cards on the battlefield,” he added.

“पिछले दो हफ्तों में हम युद्धक्षेत्र में नए पते खोलने की तैयारी कर रहे हैं,” उन्होंने कहा।

Downing Street says sovereignty of Falklands Islands rest with the U.K.



GS II: IR
A spokesperson for Prime Minister Keir Starmer said the sovereignty of the Falkland Islands rests with Britain, after a Pentagon memo mulled reviewing the U.S. position on the region as punishment for Britain’s stance on the Iran war. Britain and Argentina fought a war in 1982 after Argentina made a failed bid to take the islands. REUTERS

26A. Downing Street says sovereignty of Falklands Islands rest with the U.K.

डाउनिंग स्ट्रीट ने कहा कि फॉकलैंड द्वीपों की संप्रभुता यू.के. के पास है

- A spokesperson for Prime Minister **Keir Starmer** said the sovereignty of the **Falkland Islands** rests with **Britain**, after a **Pentagon memo** mulled reviewing the **U.S. position** on the region as punishment for Britain’s stance on the **Iran war**.

प्रधानमंत्री **कीर स्टारमर** के एक प्रवक्ता ने कहा कि **फॉकलैंड द्वीपों** की संप्रभुता **ब्रिटेन** के पास है, जब एक **पेंटागन मेमो**

ने **ईरान युद्ध** पर ब्रिटेन के रुख के लिए सजा के रूप में क्षेत्र पर **अमेरिकी रुख** की समीक्षा पर विचार किया।

- **Britain** and **Argentina** fought a war in **1982** after Argentina made a failed bid to take the islands. **ब्रिटेन** और **अर्जेंटीना** ने **1982** में युद्ध लड़ा था, जब अर्जेंटीना ने द्वीपों को लेने का असफल प्रयास किया।

26A. Bill seeking three-year pause on H-1B visas moved in U.S. Congress

अमेरिकी कांग्रेस में H-1B वीजा पर तीन साल के विराम का बिल पेश

Bill seeking three-year pause on H-1B visas moved in U.S. Congress



GS II: IR
A group of Republican lawmakers has introduced a bill in the U.S. Congress for a three-year pause to the H-1B visa programme, contending that it has been hijacked to replace Americans with foreign workers. Indian professionals, including tech workers and physicians, form one of the largest groups of H-1B visa holders. PTI



TELEGRAM CHANNEL: <https://t.me/patrioticIAS>
YOUTUBE CHANNEL: <https://www.youtube.com/@PatrioticIAS>
CONTACT: 9971932488



- A group of **Republican lawmakers** has introduced a bill in the **U.S. Congress** for a three-year pause to the **H-1B visa programme**, contending that it has been hijacked to replace Americans with foreign workers.
रिपब्लिकन सांसदों के एक समूह ने अमेरिकी कांग्रेस में H-1B वीजा कार्यक्रम पर तीन साल के विराम के लिए एक बिल पेश किया है, यह दावा करते हुए कि इसका दुरुपयोग अमेरिकियों की जगह विदेशी कामगारों को लाने के लिए किया गया है।
- **Indian professionals**, including **tech workers** and **physicians**, form one of the largest groups of **H-1B visa holders**.
भारतीय पेशेवर, जिनमें टेक कर्मचारी और डॉक्टर शामिल हैं, H-1B वीजा धारकों के सबसे बड़े समूहों में से एक हैं।

GS Paper III: Economy		26 April 2026
TOPICS COVERED		
26A	Can India move to 100% ethanol blending? क्या भारत 100% एथेनॉल मिश्रण की ओर बढ़ सकता है?	
26A	Shipping crisis exposes gaps in India's maritime strategy भारत की समुद्री रणनीति में कमियों को उजागर करता शिपिंग संकट	



Can India move to 100% ethanol blending?

How are ethanol blending and energy security linked? Can ethanol power aircraft too? What are the challenges?

GS III: Economy

02

The story so far:

MQB

In April 21, Union Road Transport and Highways Minister Nitin Gadkari urged India to aim for 100% ethanol blending in the near future. He was speaking in the context of boosting energy self-reliance. A government notification also extended the use of ethanol to make Sustainable Aviation Fuel.

What is 100% blending?

It refers to pure ethanol. One litre of petrol will supply 45-55% more energy than one litre of ethanol as the latter is less energy-dense.

Typical petrol engines are only certified up to E20 (20% blending). If the engine is older, the rating is also usually lower. To work with E85 or E100 blends, engines have to be flex-fuel, meaning they can run on any level of blending.

Such vehicles are not widely available in India at present. Toyota has introduced a version of its Hycross Innova as a flex-fuel vehicle; it costs ₹3-4 lakh more than the petrol version. Maruti Suzuki and Hyundai are known to have prototypes. These vehicles need to have corrosion-resistant fuel systems, different sensors, and better tuned engine control units, among others.

How does India produce ethanol for blending?

Ethanol is mostly produced from sugarcane, a water-intensive crop. Diverting sugarcane to

Using ethanol to make Sustainable Aviation Fuel (SAF) as well as to blend in fuel for road transport will increase pressure on the feedstock

make ethanol could disrupt food prices and availability. This is why India has been pushing 'second-generation' ethanol made from crop residues, such as rice straw. The government also hopes this will reduce

the amount of agricultural residue burnt.

Ethanol's production costs are, however, still not lower than those of petrol, requiring policy support and government-administered pricing. There are also indirect costs. While ethanol emits less carbon monoxide and particulate matter than petrol when combusted, sugarcane-based ethanol has to account for land use, inputs like fertilizers, and water demand.

Is CAFE III related to E100?

The government mooted the Corporate Average Fuel Efficiency (CAFE) standards in 2017. They limit the total carbon dioxide a manufacturer's fleet of vehicles may release. In response, manufacturers with a larger share of high-emission vehicles like SUVs were forced to design more efficient models.

India enforced CAFE I and II in 2017 and 2022, respectively. CAFE III lowers the fleetwide average target by around 30% from CAFE II and will kick in from April 1, 2027. Using CAFE III to push towards E85 or E100 could help overcome public resistance to ethanol blending. E20 fuel is 6-7% less efficient than pure petrol and leads to lower mileage for the same volume of fuel, increasing expenses.

E20 fuel became available from petrol pumps from 2023 and replaced other blends on the market from 2025. The National Biofuel Policy had originally said India would achieve E20 nationwide by 2030. Aggressive blending targets have also stoked industry bodies' and auto manufacturers' concerns about storage and transport infrastructure readiness.

How can India become energy-secure?

India has tried to diversify its energy base by pursuing alternative sources of oil, although these have been frustrated by U.S. sanctions; securing new sources of uranium; and offering incentives for deploying renewables. But domestic manufacturing is underdeveloped and initiatives to expand indigenous oil and gas production have delivered limited results.

Mr. Gadkari said India eventually has to produce hydrogen at \$1 a kg to become an energy exporter, against the current global norm of \$3-6/kg. The National Green Hydrogen Mission aims for this, but the hydrogen economy currently lacks commercial transport and storage options.

Can ethanol power aircraft too?

Aviation has been hard to decarbonise because aircraft can't use batteries or hydrogen at commercial scale yet, and SAF remains the primary way to comply with international emissions frameworks.

To be usable in jet engines, ethanol is subject to a process called alcohol-to-jet (ATJ). It is dehydrated, has its hydrocarbon chains lengthened, and is hydrogenated. Since ATJ prevents raw ethanol from running through jet engines, it does not reduce thrust or clog fuel lines by absorbing moisture, as critics allege.

ATJ ethanol is chemically similar to kerosene and existing aircraft fuel infrastructure can handle it. ASTM International sets global aviation fuel standards and has approved the ATJ pathway. It allows up to 50% blending in SAF.

However, using ethanol to make SAF as well as to blend in fuel for road transport will increase pressure on the feedstock.

26A. Can India move to 100% ethanol blending?

क्या भारत 100%

एथेनॉल मिश्रण की ओर बढ़ सकता है?

On April 21, Union Road Transport and Highways Minister Nitin Gadkari urged India to aim for 100% ethanol blending in the near future.

21 अप्रैल को, केंद्रीय सड़क परिवहन और राजमार्ग मंत्री नितिन गडकरी ने भारत से निकट भविष्य में 100% एथेनॉल मिश्रण का लक्ष्य रखने का आग्रह किया।

He was speaking in the context of boosting energy self-reliance.

वह ऊर्जा आत्मनिर्भरता को बढ़ावा देने के संदर्भ में बोल रहे थे।

A government notification also extended the use of ethanol to make Sustainable Aviation Fuel.

एक सरकारी अधिसूचना ने एथेनॉल के उपयोग को सस्टेनेबल एविएशन फ्यूल बनाने तक भी विस्तारित किया।

What is 100%

blending? (100% मिश्रण क्या है?)

- It refers to pure ethanol. यह शुद्ध एथेनॉल को संदर्भित करता है।
- One litre of petrol will supply 45-55% more energy than one litre of ethanol as the latter is less energy-dense.** एक लीटर पेट्रोल, एक लीटर एथेनॉल की तुलना में 45-55% अधिक ऊर्जा प्रदान करेगा क्योंकि एथेनॉल कम ऊर्जा-घनत्व वाला होता है।
- Typical petrol engines are only certified up to E20 (20% blending). सामान्य पेट्रोल इंजन केवल E20 (20% मिश्रण) तक ही प्रमाणित होते हैं।



- If the engine is older, the rating is also usually lower.
यदि इंजन पुराना है, तो उसकी रेटिंग भी सामान्यतः कम होती है।
- To work with E85 or E100 blends, engines have to be flex-fuel, meaning they can run on any level of blending.
E85 या E100 मिश्रण के साथ कार्य करने के लिए, इंजन को फ्लेक्स-फ्यूल होना आवश्यक है, अर्थात वे किसी भी स्तर के मिश्रण पर चल सकते हैं।
- Such vehicles are not widely available in India at present.
ऐसे वाहन वर्तमान में भारत में व्यापक रूप से उपलब्ध नहीं हैं।
- Toyota has introduced a version of its Hycross Innova as a flex-fuel vehicle; **it costs ₹3-4 lakh more than the petrol version.**
टोयोटा ने अपनी हाइक्रॉस इनोवा का एक फ्लेक्स-फ्यूल वाहन संस्करण प्रस्तुत किया है; इसकी कीमत पेट्रोल संस्करण से ₹3-4 लाख अधिक है।
- Maruti Suzuki and Hyundai are known to have prototypes.
मारुति सुजुकी और हुंडई के पास प्रोटोटाइप होने की जानकारी है।
- These vehicles need to have **corrosion-resistant fuel systems, different sensors**, and better tuned engine control units, among others.
इन वाहनों में संक्षारण-रोधी ईंधन प्रणाली, विभिन्न सेंसर और बेहतर ट्यून किए गए इंजन नियंत्रण इकाइयाँ आदि आवश्यक होती हैं।
- How does India produce ethanol for blending? (भारत मिश्रण हेतु एथेनॉल कैसे उत्पन्न करता है?)
- **Ethanol is mostly produced from sugarcane, a water-intensive crop.**
एथेनॉल मुख्यतः गन्ने से उत्पन्न किया जाता है, जो एक जल-गहन फसल है।
- **Diverting sugarcane to make ethanol could disrupt food prices and availability.**
एथेनॉल बनाने हेतु गन्ने का उपयोग खाद्य मूल्य और उपलब्धता को प्रभावित कर सकता है।
- **This is why India has been pushing 'second-generation' ethanol made from crop residues, such as rice straw.**
इसी कारण भारत 'द्वितीय पीढ़ी' एथेनॉल को बढ़ावा दे रहा है, जो फसल अवशेषों जैसे धान के पुआल से बनाया जाता है।
- **While ethanol emits less carbon monoxide and particulate matter than petrol when combusted, sugarcane-based ethanol has to account for land use, inputs like fertilizers, and water demand.**
यद्यपि दहन के समय एथेनॉल, पेट्रोल की तुलना में कम कार्बन मोनोऑक्साइड और कण पदार्थ उत्सर्जित करता है, परंतु गन्ना-आधारित एथेनॉल में भूमि उपयोग, उर्वरकों जैसे इनपुट और जल की मांग को भी ध्यान में रखना होता है।
- **Is CAFE III related to E100?** (क्या CAFE III, E100 से संबंधित है?)
- The government mooted the **Corporate Average Fuel Efficiency (CAFE) standards in 2017.**
सरकार ने 2017 में कॉर्पोरेट औसत ईंधन दक्षता (CAFE) मानकों का प्रस्ताव रखा।
- **They limit the total carbon dioxide a manufacturer's fleet of vehicles may release.**
ये मानक किसी निर्माता के वाहनों के बेड़े द्वारा उत्सर्जित कुल कार्बन डाइऑक्साइड को सीमित करते हैं।
- **In response, manufacturers with a larger share of high-emission vehicles like SUVs were forced to design more efficient models.**
इसके परिणामस्वरूप, उच्च उत्सर्जन वाले वाहन जैसे SUV अधिक रखने वाले निर्माताओं को अधिक दक्ष मॉडल तैयार करने के लिए बाध्य किया गया।
- **India enforced CAFE I and II in 2017 and 2022, respectively.**
भारत ने क्रमशः 2017 और 2022 में CAFE I और II लागू किए।
- **CAFE III lowers the fleetwide average target by around 30% from CAFE II and will kick in from April 1, 2027.**
CAFE III, CAFE II की तुलना में बेड़े के औसत लक्ष्य को लगभग 30% कम करता है और यह 1 अप्रैल 2027 से लागू होगा।



- Using CAFE III to push towards E85 or E100 could help overcome public resistance to ethanol blending.
E85 या E100 की दिशा में आगे बढ़ने हेतु CAFE III का उपयोग जन विरोध को कम करने में सहायक हो सकता है।
- E20 fuel is 6-7% less efficient than pure petrol and leads to lower mileage for the same volume of fuel, increasing expenses.
E20 ईंधन, शुद्ध पेट्रोल की तुलना में 6-7% कम दक्ष होता है और समान मात्रा के ईंधन पर कम माइलेज देता है, जिससे खर्च बढ़ता है।
- E20 fuel became available from petrol pumps from 2023 and replaced other blends on the market from 2025.
E20 ईंधन 2023 से पेट्रोल पंपों पर उपलब्ध हुआ और 2025 से अन्य मिश्रणों का स्थान ले लिया।
- The National Biofuel Policy had originally said India would achieve E20 nationwide by 2030.
राष्ट्रीय जैव ईंधन नीति ने मूल रूप से कहा था कि भारत 2030 तक पूरे देश में E20 हासिल कर लेगा।
- Aggressive blending targets have also stoked industry bodies' and auto manufacturers' concerns about storage and transport infrastructure readiness.
आक्रामक मिश्रण लक्ष्यों ने उद्योग संगठनों और ऑटो निर्माताओं की चिंताओं को भी बढ़ा दिया है, विशेषकर भंडारण और परिवहन अवसंरचना की तैयारी को लेकर।

How can India become energy-secure? (भारत ऊर्जा-सुरक्षित कैसे बन सकता है?)

- Mr. Gadkari said India eventually has to produce hydrogen at \$1 a kg to become an energy exporter, against the current global norm of \$3-6/kg.
श्री गडकरी ने कहा कि भारत को अंततः हाइड्रोजन का उत्पादन \$1 प्रति किलोग्राम की लागत पर करना होगा ताकि वह ऊर्जा निर्यातक बन सके, जबकि वर्तमान वैश्विक मानक \$3-6 प्रति किलोग्राम है।
- The National Green Hydrogen Mission aims for this, but the hydrogen economy currently lacks commercial transport and storage options.
राष्ट्रीय हरित हाइड्रोजन मिशन का उद्देश्य यही है, लेकिन वर्तमान में हाइड्रोजन अर्थव्यवस्था में व्यावसायिक परिवहन और भंडारण विकल्पों का अभाव है।

Can ethanol power aircraft too? (क्या एथेनॉल विमान को भी शक्ति दे सकता है?)

- Aviation has been hard to decarbonise because aircraft can't use batteries or hydrogen at commercial scale yet, and SAF remains the primary way to comply with international emissions frameworks.
विमानन क्षेत्र का डीकार्बोनाइजेशन कठिन रहा है क्योंकि विमान अभी व्यावसायिक स्तर पर बैटरियों या हाइड्रोजन का उपयोग नहीं कर सकते, और SAF अंतरराष्ट्रीय उत्सर्जन ढांचे के अनुरूप रहने का प्रमुख माध्यम बना हुआ है।
- To be usable in jet engines, ethanol is subject to a process called alcohol-to-jet (ATJ).
जेट इंजन में उपयोग योग्य बनाने के लिए, एथेनॉल को अल्कोहल-टू-जेट (ATJ) नामक प्रक्रिया से गुजरना पड़ता है।
- It is dehydrated, has its hydrocarbon chains lengthened, and is hydrogenated.
इसे निर्जलित किया जाता है, इसकी हाइड्रोकार्बन शृंखलाओं को लंबा किया जाता है, और इसे हाइड्रोजनीकृत किया जाता है।
- Since ATJ prevents raw ethanol from running through jet engines, it does not reduce thrust or clog fuel lines by absorbing moisture, as critics allege.
चूंकि ATJ कच्चे एथेनॉल को जेट इंजन में जाने से रोकता है, इसलिए यह थ्रस्ट को कम नहीं करता और न ही नमी को अवशोषित कर ईंधन लाइनों को अवरुद्ध करता है, जैसा कि आलोचक आरोप लगाते हैं।
- ATJ ethanol is chemically similar to kerosene and existing aircraft fuel infrastructure can handle it.



ATJ एथेनॉल, केरोसीन के रासायनिक रूप से समान होता है और मौजूदा विमान ईंधन अवसंरचना इसे संभाल सकती है।

- **ASTM International sets global aviation fuel standards and has approved the ATJ pathway.** ASTM इंटरनेशनल वैश्विक विमानन ईंधन मानक निर्धारित करता है और उसने ATJ मार्ग को स्वीकृति दी है।
- **It allows up to 50% blending in SAF.**

यह SAF में अधिकतम 50% मिश्रण की अनुमति देता है।

- However, using ethanol to make SAF as well as to blend in fuel for road transport will increase pressure on the feedstock.

हालांकि, SAF बनाने के साथ-साथ सड़क परिवहन के ईंधन में मिश्रण हेतु एथेनॉल के उपयोग से फीडस्टॉक पर दबाव बढ़ेगा।

GS Paper III: Science and Technology		26 April 2026
TOPICS COVERED		
26A	Revanth launches Skyroot's orbital rocket Vikram-I रेवंत ने स्काईरूट का कक्षीय रॉकेट विक्रम-I लॉन्च किया	
26A	Study shows why chronic pain, depression go hand in hand Sheetal Potdar अध्ययन बताता है कि दीर्घकालिक दर्द और अवसाद साथ-साथ क्यों चलते हैं शीटल पोटदार	
26A	Why turning to AI for personal advice is a bad idea व्यक्तिगत सलाह के लिए AI की ओर रुख करना क्यों एक खराब विचार है	
26A	Why did kangaroos evolve hopping? (कंगारू ने कूदने की क्षमता क्यों विकसित की?)	
26A	Mitigating fertiliser crunch via coal gasification a far cry कोयला गैसीफिकेशन के जरिए उर्वरक संकट का समाधान अभी दूर	



26A. Revanth launches Skyroot's orbital rocket Vikram-I

रेवंत ने स्काईरूट का कक्षीय रॉकेट विक्रम-I लॉन्च किया

- Skyroot Aerospace's orbital rocket Vikram-I, capable of launching satellites, was flagged off from the spacetechnology startup's facility in Hyderabad on Saturday by Telangana Chief Minister A. Revanth Reddy, to Sriharikota, from where it is likely to be launched to space in June.

स्काईरूट एयरोस्पेस का कक्षीय रॉकेट विक्रम-I, जो उपग्रहों को लॉन्च करने में सक्षम है, को शनिवार को तेलंगाना के मुख्यमंत्री ए. रेवंत रेड्डी द्वारा हैदराबाद स्थित स्पेसटेक स्टार्टअप की सुविधा से श्रीहरिकोटा के लिए रवाना किया गया, जहां से इसे जून में अंतरिक्ष में लॉन्च किए जाने की संभावना है।

- Designed and developed in Hyderabad, the rocket, the first such privately developed in India, is 23 metres tall.

हैदराबाद में डिजाइन और विकसित किया गया यह रॉकेट, भारत में इस तरह का पहला निजी रूप से विकसित रॉकेट है, जिसकी ऊंचाई 23 मीटर है।

- It can carry a payload of 300 kg though the company plans to have smaller payloads during the initial launches.

यह 300 किलोग्राम तक का पेलोड ले जा सकता है, हालांकि कंपनी प्रारंभिक लॉन्च के दौरान छोटे पेलोड रखने की योजना बना रही है।

Revant launches Skyroot's orbital rocket Vikram-I

GS III: S&T

Skyroot Aerospace's orbital rocket Vikram-I, capable of launching satellites, was flagged off from the spacetechnology startup's facility in Hyderabad on Saturday by Telangana Chief Minister A. Revanth Reddy, to Sriharikota, from where it is likely to be launched to space in June. Designed and developed in Hyderabad, the rocket, the first such privately developed in India, is 23 metres tall. It can carry a payload of 300 kg though the company plans to have smaller payloads during the initial launches.



Study shows why chronic pain, depression go hand in hand

Research has found that the **hippocampus acts like a gate, physically altering its structure as chronic pain progresses into depression**. While early changes may be protective, persistent pain eventually shrinks this vital memory centre

Sheetal Potdar

Imagine living with constant pain every day. While the physical aspect of pain is palpable, nearly 85% of chronic pain patients also deal with depression.

Whether it is pain in the lower back, joints, stomach or headaches and migraines, chronic pain progresses into depression, anxiety, and cognitive decline. A new study in *Science* has found the reason: structural and molecular changes in the hippocampus, the brain's memory centre.

The researchers used health data from the publicly available U.K. Biobank, narrowing down to a subset of 14,462 participants whose brain scans were also available.

"We classified participants into three cohorts along the pain-depression trajectory: those who had chronic pain without depression, chronic pain with newly developed depression, and chronic pain with persistent depression," Trevor Robbins, professor of cognitive neuroscience at the University of Cambridge and one of the lead authors of the study, explained.

The authors found that chronic pain patients who had recently developed depression had enlarged hippocampi. Those in the cohort with persistent pain and depression had shrunken hippocampi compared to the other cohorts. Regardless of the pain's location, the hippocampus enlarged and shrank later as

Find the nerve

Changes in the hippocampus could be a generalisable brain response to chronic pain

Chronic pain often leads to depression, cognitive decline through structural changes in the hippocampus, a study has found

Research shows the hippocampus expands during chronic pain before eventually shrinking as depression persists

These structural alterations remain consistent regardless of the specific location or type of physical pain experienced

Changes in hippocampal size directly affect cognitive functions like memory performance and ability to distinguish contexts

Interactions between immune cells called microglia and newborn neurons drive the progression from chronic pain to depression

Targeted interventions at the cellular level could help treat psychological symptoms without having to alter pain perception

Living with constant pain means having to think through the smallest choices, from which shoes to wear to whether you can commute. TOM FIOU BARBERI/VA

chronic pain led to depression. "This suggests that hippocampal structural changes are a generalisable brain response to persistent pain, rather than being specific to a particular type or location of pain," Fudan University associate professor and another lead author of the paper, Xiao Xiao, said.

These changes in hippocampus size were accompanied by changes in cognitive performance. In a test examining the ability to remember number sequences, participants with larger hippocampi could remember longer sequences while those with shrunken hippocampi and persistent pain and depression performed worse than the other cohorts.

The researchers also developed a chronic pain mo-

del in rats and mice. They surgically pinched the sciatic nerve that extends from the spine to the legs, causing shooting pain, numbness, and tingling. These rats spontaneously lifted the injured leg, licked and groomed it excessively, and had difficulty tolerating heat and mechanical stress, indicating chronic pain.

Anxiety- and depression-like behaviours also emerged in the later stages.

To understand the cellular changes mediating the progression from pain to depression, the researchers focused on a region called the dentate gyrus within the hippocampus. One of its functions is to differentiate between similar contexts. For example, if a new bottle were added to your kitchen's spice

rack, you'd notice the difference. This ability is driven by neuronal plasticity, in this case marked by the birth of new neurons, in the dentate gyrus.

The researchers found that neuronal plasticity increased in the early stages of chronic pain in rats, and their ability to separate similar patterns was also enhanced. However, in the later stages of chronic pain, the ability to separate patterns was diminished. When the researchers inflicted lesions on it, they found reduced anxiety- and depression-like behaviours even as the pain persisted.

The researchers also found that new neurons are highly excitable, thanks to their interactions with supporting cells called microglia. "Microglia are the brain's resident

immune cells, part of a fast-responding house-keeping system that protects the brain," Tomas Deierborg, professor at Lund University, Sweden said.

The researchers specifically inhibited newborn neurons in genetically modified mice with chronic pain, and found that their pain perception and anxiety- and depression-like behaviours were mitigated. On the other hand, when microglia alone were inhibited, the anxiety- and depression-like behaviours disappeared, leaving pain perception intact.

"The key difference lies in where the manipulation is applied. In neurons, it directly changes the building blocks of the circuit, whereas in microglia, it modulates the surrounding environment," Prof. Robbins said. "Moreover, chronic pain likely unfolds through multiple stages, and interventions at different cellular levels may therefore produce different outcomes," Dr. Xiao added.

Per Prof. Deierborg, "You need that acute response to protect the brain, but when it becomes chronic, the same processes that were helpful begin to damage new neurons and disrupt how the brain works."

"Rather than just saying 'they're in pain, they can't do anything,' [the study] shows that long-term pain is remodelling some of the core regions for human behaviour," he added. (Sheetal Potdar has a PhD in neuroscience and is a freelance science journalist)

26A. Study shows why chronic pain, depression go hand in hand Sheetal Potdar

अध्ययन बताता है कि दीर्घकालिक दर्द और अवसाद साथ-साथ क्यों चलते हैं शीटल पोटदार

Imagine living with constant pain every day. कल्पना कीजिए कि आप हर दिन लगातार दर्द के साथ जी रहे हैं।

While the physical aspect of pain is palpable, nearly 85% of chronic pain patients also deal with depression.

हालांकि दर्द का शारीरिक पहलू स्पष्ट होता है, लगभग 85% दीर्घकालिक दर्द के मरीज अवसाद से भी जूझते हैं।

Whether it is pain in the lower back, joints, stomach or headaches and migraines, chronic pain progresses into depression, anxiety, and cognitive decline.

चाहे वह कमर के निचले हिस्से, जोड़ों, पेट या सिरदर्द और माइग्रेन का दर्द हो,

दीर्घकालिक दर्द अवसाद, चिंता और संज्ञानात्मक गिरावट में परिवर्तित हो जाता है।

- A new study in **Science** has found the reason: structural and molecular changes in the **hippocampus**, the brain's **memory centre**.

साइंस में प्रकाशित एक नए अध्ययन ने इसका कारण बताया है: हिप्पोकैम्पस, जो मस्तिष्क का स्मृति केंद्र है, उसमें संरचनात्मक और आणविक परिवर्तन।

- The researchers used health data from the publicly available **U.K. Biobank**, narrowing down to a subset of **14,462 participants** whose brain scans were also available.

शोधकर्ताओं ने सार्वजनिक रूप से उपलब्ध यू.के. बायोबैंक के स्वास्थ्य डेटा का उपयोग किया और इसे 14,462 प्रतिभागियों के एक उपसमूह तक सीमित किया जिनके मस्तिष्क स्कैन भी उपलब्ध थे।

- "We classified participants into three cohorts along the **pain-depression trajectory**: those who had chronic pain without depression, chronic pain with newly developed depression, and chronic pain with persistent depression," **Trevor Robbins**, professor of **cognitive neuroscience** at the **University of Cambridge** and one of the lead authors of the study, explained.

"हमने प्रतिभागियों को दर्द-अवसाद प्रवृत्ति के आधार पर तीन समूहों में वर्गीकृत किया: वे जिनमें बिना अवसाद के दीर्घकालिक दर्द था, वे जिनमें हाल ही में विकसित अवसाद के साथ दीर्घकालिक दर्द था, और वे जिनमें लगातार अवसाद के साथ दीर्घकालिक दर्द था," ट्रेवर रॉबिंस, कैम्ब्रिज विश्वविद्यालय में संज्ञानात्मक तंत्रिका विज्ञान के प्रोफेसर और अध्ययन के प्रमुख लेखक, ने बताया।

- The authors found that chronic pain patients who had recently developed depression had **enlarged hippocampi**.



लेखकों ने पाया कि जिन दीर्घकालिक दर्द के मरीजों में हाल ही में अवसाद विकसित हुआ था, उनमें हिप्पोकैम्पस का आकार बढ़ा हुआ था।

- Those in the cohort with persistent pain and depression had **shrunk hippocampi** compared to the other cohorts.
जिन प्रतिभागियों में लगातार दर्द और अवसाद था, उनमें अन्य समूहों की तुलना में हिप्पोकैम्पस का आकार छोटा था।
- Regardless of the pain's location, the hippocampus enlarged and shrank later as chronic pain led to depression.
दर्द के स्थान की परवाह किए बिना, दीर्घकालिक दर्द के अवसाद में परिवर्तित होने पर हिप्पोकैम्पस पहले बढ़ा और फिर सिकुड़ गया।
- "This suggests that hippocampal structural changes are a **generalisable brain response** to persistent pain, rather than being specific to a particular type or location of pain," **Xiao Xiao**, associate professor at **Fudan University** and another lead author of the paper, said.
"यह दर्शाता है कि हिप्पोकैम्पस में संरचनात्मक परिवर्तन लगातार दर्द के प्रति एक सामान्यीकृत मस्तिष्क प्रतिक्रिया है, न कि किसी विशेष प्रकार या स्थान के दर्द से संबंधित," फुदान विश्वविद्यालय के सहायक प्रोफेसर और अध्ययन के सह-लेखक शियाओ शियाओ ने कहा।
- These changes in hippocampus size were accompanied by changes in **cognitive performance**.
हिप्पोकैम्पस के आकार में ये परिवर्तन संज्ञानात्मक प्रदर्शन में बदलाव के साथ जुड़े थे।
- In a test examining the ability to remember **number sequences**, participants with larger hippocampi could remember longer sequences while those with shrunk hippocampi and persistent pain and depression performed worse than the other cohorts.
संख्या अनुक्रम को याद रखने की क्षमता की जांच में, बड़े हिप्पोकैम्पस वाले प्रतिभागी लंबी श्रृंखलाएं याद रख सके, जबकि छोटे हिप्पोकैम्पस और लगातार दर्द व अवसाद वाले प्रतिभागियों का प्रदर्शन अन्य समूहों की तुलना में खराब था।
- The researchers also developed a **chronic pain model** in rats and mice.
शोधकर्ताओं ने चूहों और माइस में एक दीर्घकालिक दर्द मॉडल भी विकसित किया।
- They surgically pinched the **sciatic nerve** that extends from the spine to the legs, causing shooting pain, numbness, and tingling.
उन्होंने शल्यक्रिया द्वारा साइटिक नस को दबाया, जो रीढ़ से पैरों तक जाती है, जिससे तेज दर्द, सुन्नता और झुनझुनी उत्पन्न हुई।
- These rats spontaneously lifted the injured leg, licked and groomed it excessively, and had difficulty tolerating **heat and mechanical stress**, indicating chronic pain.
इन चूहों ने स्वतः घायल पैर को उठाया, उसे अत्यधिक चाटा और साफ किया, तथा गर्मी और यांत्रिक दबाव को सहन करने में कठिनाई दिखाई, जो दीर्घकालिक दर्द का संकेत है।

Anxiety- and depression-like behaviours also emerged in the later stages.

बाद के चरणों में चिंता और अवसाद जैसे व्यवहार भी उभरकर सामने आए।

- To understand the **cellular changes** mediating the progression from pain to depression, the researchers focused on a region called the **dentate gyrus** within the **hippocampus**.
दर्द से अवसाद तक की प्रगति को नियंत्रित करने वाले कोशिकीय परिवर्तनों को समझने के लिए, शोधकर्ताओं ने हिप्पोकैम्पस के भीतर स्थित डेंटेट गायरस नामक क्षेत्र पर ध्यान केंद्रित किया।
- One of its functions is to differentiate between **similar contexts**.
इसके कार्यों में से एक समान संदर्भों के बीच अंतर करना है।
- For example, if a new bottle were added to your kitchen's **spice rack**, you'd notice the difference.



उदाहरण के लिए, यदि आपकी रसोई के मसाले रखने की जगह में एक नई बोतल जोड़ दी जाए, तो आप अंतर को पहचान लेंगे।

- This ability is driven by **neuronal plasticity**, in this case marked by the birth of **new neurons**, in the dentate gyrus.

यह क्षमता **न्यूरोनल प्लास्टिसिटी** द्वारा संचालित होती है, जिसमें **नए न्यूरोन्स** का निर्माण डेंटेट गायरस में होता है।

- The researchers found that neuronal plasticity increased in the early stages of **chronic pain** in rats, and their ability to separate similar patterns was also enhanced.

शोधकर्ताओं ने पाया कि चूहों में **दीर्घकालिक दर्द** के प्रारंभिक चरणों में न्यूरोनल प्लास्टिसिटी बढ़ जाती है, और समान पैटर्न को अलग करने की उनकी क्षमता भी बेहतर हो जाती है।

- However, in the later stages of chronic pain, the ability to separate patterns was diminished. हालांकि, दीर्घकालिक दर्द के बाद के चरणों में पैटर्न को अलग करने की क्षमता कम हो गई।

- When the researchers inflicted **lesions** on it, they found reduced anxiety- and depression-like behaviours even as the pain persisted.

जब शोधकर्ताओं ने इस पर **घाव (लेज़न)** उत्पन्न किए, तो पाया कि दर्द बने रहने के बावजूद चिंता और अवसाद जैसे व्यवहार कम हो गए।

- The researchers also found that new neurons are highly **excitable**, thanks to their interactions with supporting cells called **microglia**.

शोधकर्ताओं ने यह भी पाया कि नए न्यूरोन्स अत्यधिक **उत्तेजनीय** होते हैं, जो **माइक्रोग्लिया** नामक सहायक कोशिकाओं के साथ उनकी अंतःक्रिया के कारण होता है।

- "Microglia are the brain's resident **immune cells**, part of a fast-responding **housekeeping system** that protects the brain," **Tomas Deierborg**, professor at **Lund University, Sweden** said.

"माइक्रोग्लिया मस्तिष्क की स्थायी **प्रतिरक्षा कोशिकाएं** हैं, जो एक तीव्र प्रतिक्रिया देने वाली **संरक्षण प्रणाली** का हिस्सा हैं जो मस्तिष्क की रक्षा करती हैं," **स्वीडन के लुंड विश्वविद्यालय** के प्रोफेसर **टोमस डियरबोर्ग** ने कहा।

- The researchers specifically inhibited **newborn neurons** in genetically modified mice with chronic pain, and found that their pain perception and anxiety- and depression-like behaviours were **mitigated**.

शोधकर्ताओं ने आनुवंशिक रूप से संशोधित चूहों में **नवजात न्यूरोन्स** को विशेष रूप से अवरुद्ध किया और पाया कि उनकी दर्द अनुभूति तथा चिंता और अवसाद जैसे व्यवहार **कम हो गए**।

- On the other hand, when microglia alone were inhibited, the anxiety- and depression-like behaviours disappeared, leaving pain perception intact.

दूसरी ओर, जब केवल माइक्रोग्लिया को अवरुद्ध किया गया, तो चिंता और अवसाद जैसे व्यवहार समाप्त हो गए, जबकि दर्द की अनुभूति बनी रही।

- "The key difference lies in where the **manipulation** is applied.

"मुख्य अंतर इस बात में है कि **हस्तक्षेप** कहाँ किया जाता है।

- In neurons, it directly changes the building blocks of the circuit, whereas in microglia, it modulates the surrounding environment," Prof. Robbins said.

न्यूरोन्स में यह सीधे सर्किट के निर्माण खंडों को बदलता है, जबकि माइक्रोग्लिया में यह आसपास के वातावरण को नियंत्रित करता है," प्रोफेसर रॉबिंस ने कहा।

- "Moreover, chronic pain likely unfolds through multiple stages, and interventions at different **cellular levels** may therefore produce different outcomes," Dr. Xiao added.

"इसके अलावा, दीर्घकालिक दर्द संभवतः कई चरणों में विकसित होता है, और विभिन्न **कोशिकीय स्तरों** पर हस्तक्षेप अलग-अलग परिणाम उत्पन्न कर सकते हैं," डॉ. शियाओ ने जोड़ा।

- Per Prof. Deierborg, "You need that acute response to protect the brain, but when it becomes chronic, the same processes that were helpful begin to damage new neurons and disrupt how the brain works."

प्रोफेसर डियरबोर्ग के अनुसार, "मस्तिष्क की रक्षा के लिए आपको तीव्र प्रतिक्रिया की आवश्यकता होती है,



लेकिन जब यह दीर्घकालिक हो जाती है, तो वही प्रक्रियाएं जो पहले सहायक थीं, नए न्यूरोन्स को नुकसान पहुंचाने लगती हैं और मस्तिष्क के कार्य को बाधित करती हैं।”

- “Rather than just saying ‘they’re in pain, they can’t do anything’, [the study] shows that long-term pain is **remodelling** some of the core regions for human behaviour,” he added. “केवल यह कहने के बजाय कि ‘वे दर्द में हैं, वे कुछ नहीं कर सकते’, [यह अध्ययन] दर्शाता है कि दीर्घकालिक दर्द मानव व्यवहार के कुछ प्रमुख क्षेत्रों को **पुनर्गठित** कर रहा है,” उन्होंने जोड़ा।

Why turning to AI for personal advice is a bad idea



The current crop of artificial intelligence tools landed on our smartphones and web browsers as chatbots – they were designed to answer queries. You can ask it something, and receive a statistically probable response based on its training data.

Apart from the training data, these chatbots are also built with a certain personality – to be agreeable. This trait may not be good for users who turn to a chatbot for personal advice, as they could create a type of echo chamber effect on the individual and make them less empathetic to the other.

A recent research, titled ‘Sycophantic AI decreases prosocial intentions and promotes dependence,’

published in the journal *Science*, is among the most rigorous attempts yet to measure not just whether AI flatters us, but what that flattery actually does to us.

The team first benchmarked sycophancy across 11 of today’s leading large language models using a dataset of nearly 12,000 social prompts. The finding was unambiguous: across all 11 models, AI affirmed users’ actions 49% more often than humans, even when queries involved deception, illegality, or other harms.

In one test, the researchers fed the models posts from Reddit’s r/AmlTheAsshole community – where the users had already collectively ruled the poster was in the wrong. The LLMs still said the poster was right 51% of the time.

You might assume that a reasonable person would notice when an AI is being



A woman speaking with an artificial intelligence-assisted robot on display in Seoul. AFP

overly agreeable. But the study suggests otherwise. When researchers asked participants to rate the objectivity of both sycophantic and non-sycophantic responses, they rated them about the same.

Users could not distinguish when an AI was acting overly agreeable. The reason, the researchers note, is that the AI rarely said that the user was “right”; instead, it replied in seemingly neutral language. Its flattery was dis-

guised neatly in objectivity that the reader absorbs it without resistance.

This can get worse the more personalised the experience becomes. Frequent conversations with the chatbot can increase people’s trust in artificial systems. In the second part of the study, more than 2,400 participants interacted with both sycophantic and non-sycophantic AI models about real personal conflicts or pre-written interpersonal

dilemmas. Participants deemed sycophantic responses more trustworthy and indicated they were more likely to return to the AI for similar questions.

When discussing their conflicts with such systems, they also grew more convinced they were in the right and reported they were less likely to apologise or make amends with the other party. This type of behaviour is problematic as it may make people self-centred. So, how can the user stay safe? The researchers explored technical interventions to reduce sycophantic tendencies in AI chatbots. Surprisingly, even telling a model to start its output with the words “wait a minute” primes it to be more critical.

The U.K.’s AI Security Institute has suggested turning statements into questions, since more emphatic statements encourage

more sycophancy. Asking a model to argue against your position first, or to tell you what the other person in your conflict might say you are doing wrong, are other ways to work around the grain of the machine.

But these are workarounds, not solutions.

AI, in its current chatbot form factor, tends to amplify whatever system it is paired with – good or broken. When the system being amplified is your own bias, your own grievance, or your own desire to be right, then the machine will not correct you. It will confirm your biases, in the most academic-sounding language it can find, until you return for more.

A tool that tells you what you want to hear is not a thinking tool. It is a mirror. And a mirror, no matter how sophisticated, is the last thing you need when you are trying to understand someone else.

26A. Why turning to AI for personal advice is a bad idea

व्यक्तिगत सलाह के लिए AI की ओर रुख करना क्यों एक खराब विचार है

- The current crop of **artificial intelligence tools** landed on our smartphones and web browsers as **chatbots** — they were designed to answer queries. वर्तमान **कृत्रिम बुद्धिमत्ता उपकरणों** की श्रृंखला हमारे स्मार्टफोन और वेब ब्राउज़र में **चैटबॉट्स** के रूप में आई — इन्हें प्रश्नों का उत्तर देने के लिए डिज़ाइन किया गया था।
- You can ask it something, and receive a statistically probable **response** based on its training data. आप इससे कुछ पूछ सकते हैं, और इसके प्रशिक्षण डेटा के आधार पर एक संभावित **उत्तर** प्राप्त कर सकते हैं।
- Apart from the training data, these chatbots are also built with a certain **personality** — to be agreeable. प्रशिक्षण डेटा के अलावा, इन चैटबॉट्स को एक विशेष **व्यक्तित्व** के साथ भी बनाया गया है — सहमत रहने के लिए।
- This trait may not be good for users who turn to a chatbot for **personal advice**, as they could create a type of **echo chamber effect** on the individual and make them less empathetic to the other. यह गुण उन उपयोगकर्ताओं के लिए अच्छा नहीं हो सकता जो **व्यक्तिगत सलाह** के लिए चैटबॉट का उपयोग करते हैं, क्योंकि यह व्यक्ति में एक प्रकार का **इको चैंबर प्रभाव** उत्पन्न कर सकता है और उन्हें दूसरों के प्रति कम सहानुभूतिशील बना सकता है।
- A recent research, titled ‘**Sycophantic AI decreases prosocial intentions and promotes dependence**,’ published in the journal *Science*, is among the most rigorous attempts yet to



measure not just whether AI flatters us, but what that flattery actually does to us.

हाल ही में साइंस पत्रिका में प्रकाशित शोध, शीर्षक 'चापलूसी करने वाली एआई सामाजिक व्यवहार को घटाती है और निर्भरता बढ़ाती है,' यह मापने के सबसे कठोर प्रयासों में से एक है कि एआई हमें खुश करता है या नहीं, बल्कि यह भी कि वह हमारे साथ क्या करता है।

- The team first benchmarked **sycophancy** across 11 of today's leading **large language models** using a dataset of nearly **12,000 social prompts**.
टीम ने पहले लगभग **12,000 सामाजिक प्रश्नों** के डेटा सेट का उपयोग करके 11 प्रमुख लार्ज लैंग्वेज मॉडल्स में चापलूसी प्रवृत्ति का परीक्षण किया।
- The finding was unambiguous: across all 11 models, AI affirmed users' actions **49% more often than humans**, even when queries involved deception, illegality, or other harms.
निष्कर्ष स्पष्ट था: सभी 11 मॉडलों में, एआई ने उपयोगकर्ताओं के कार्यों की **मनुष्यों की तुलना में 49% अधिक बार पुष्टि की**, यहां तक कि जब प्रश्न धोखे, अवैधता या अन्य हानियों से जुड़े थे।
- In one test, the researchers fed the models posts from **Reddit's r/AmITheAsshole** community — where the users had already collectively ruled the poster was in the wrong. एक परीक्षण में, शोधकर्ताओं ने मॉडलों को **रेडिट के r/AmITheAsshole** समुदाय से पोस्ट दिए — जहां उपयोगकर्ताओं ने पहले ही तय कर दिया था कि पोस्ट करने वाला गलत है।
- The LLMs still said the poster was right **51% of the time**.
फिर भी एलएलएम ने **51% मामलों में** कहा कि पोस्ट करने वाला सही है।
- You might assume that a reasonable person would notice when an AI is being overly agreeable.
आप सोच सकते हैं कि एक समझदार व्यक्ति यह पहचान लेगा कि एआई अत्यधिक सहमत हो रहा है।
- But the study suggests otherwise.
लेकिन अध्ययन इसके विपरीत संकेत देता है।
- When researchers asked participants to rate the **objectivity** of both sycophantic and non-sycophantic responses, they rated them about the same.
जब शोधकर्ताओं ने प्रतिभागियों से चापलूसीपूर्ण और गैर-चापलूसीपूर्ण उत्तरों की **वस्तुनिष्ठता** को रेट करने के लिए कहा, तो उन्होंने दोनों को लगभग समान अंक दिए।
- Users could not distinguish when an AI was acting overly agreeable.
उपयोगकर्ता यह पहचान नहीं सके कि एआई कब अत्यधिक सहमत हो रहा था।
- The reason, the researchers note, is that the AI rarely said that the user was "right"; instead, it replied in seemingly **neutral language**.
शोधकर्ताओं के अनुसार, इसका कारण यह है कि एआई शायद ही कभी सीधे कहता है कि उपयोगकर्ता "सही" है; बल्कि यह **तटस्थ भाषा** में उत्तर देता है।
- Its flattery was disguised neatly in objectivity that the reader absorbs it without resistance.
इसकी चापलूसी वस्तुनिष्ठता में इस प्रकार छिपी होती है कि पाठक उसे बिना विरोध के स्वीकार कर लेता है।
- This can get worse the more **personalised** the experience becomes.
जैसे-जैसे अनुभव अधिक **व्यक्तिगत** होता जाता है, यह स्थिति और खराब हो सकती है।
- Frequent conversations with the chatbot can increase people's **trust** in artificial systems.
चैटबॉट के साथ बार-बार बातचीत लोगों का **विश्वास** कृत्रिम प्रणालियों में बढ़ा सकती है।
- In the second part of the study, more than **2,400 participants** interacted with both sycophantic and non-sycophantic AI models about real personal conflicts or pre-written interpersonal dilemmas.
अध्ययन के दूसरे भाग में, **2,400 से अधिक प्रतिभागियों** ने वास्तविक व्यक्तिगत संघर्षों या पूर्व-लिखित पारस्परिक समस्याओं पर चापलूसीपूर्ण और गैर-चापलूसीपूर्ण एआई मॉडलों के साथ बातचीत की।
- Participants deemed sycophantic responses more **trustworthy** and indicated they were more likely to return to the AI for similar questions.
प्रतिभागियों ने चापलूसीपूर्ण उत्तरों को अधिक **विश्वसनीय** माना और संकेत दिया कि वे समान प्रश्नों के लिए एआई के पास वापस आने की अधिक संभावना रखते हैं।



- When discussing their conflicts with such systems, they also grew more convinced they were in the right and reported they were less likely to **apologise** or make **amends** with the other party.
जब उन्होंने ऐसे सिस्टम के साथ अपने संघर्षों पर चर्चा की, तो वे और अधिक आश्वस्त हो गए कि वे सही हैं और उन्होंने बताया कि वे दूसरे पक्ष से **माफी मांगने** या **समझौता करने** की संभावना कम रखते हैं।
- This type of behaviour is problematic as it may make people **self-centred**.
इस प्रकार का व्यवहार समस्याग्रस्त है क्योंकि यह लोगों को **स्वार्थी** बना सकता है।
- So, how can the user stay safe?
तो उपयोगकर्ता कैसे सुरक्षित रह सकता है?
- The researchers explored **technical interventions** to reduce sycophantic tendencies in AI chatbots.
शोधकर्ताओं ने एआई चैटबॉट्स में चापलूसी प्रवृत्तियों को कम करने के लिए **तकनीकी उपायों** का परीक्षण किया।
- Surprisingly, even telling a model to start its output with the words “**wait a minute**” primes it to be more critical.
आश्चर्यजनक रूप से, केवल मॉडल को अपने उत्तर की शुरुआत “**रुको एक मिनट**” से करने के लिए कहने से वह अधिक आलोचनात्मक बन जाता है।
- The **U.K.’s AI Security Institute** has suggested turning statements into questions, since more emphatic statements encourage more sycophancy.
यू.के. के एआई सुरक्षा संस्थान ने सुझाव दिया है कि कथनों को प्रश्नों में बदला जाए, क्योंकि अधिक जोरदार कथन अधिक चापलूसी को प्रोत्साहित करते हैं।
- Asking a model to argue against your position first, or to tell you what the other person in your conflict might say you are doing wrong, are other ways to work around the grain of the machine.
मॉडल से पहले आपके दृष्टिकोण के खिलाफ तर्क देने के लिए कहना, या यह पूछना कि आपके संघर्ष में दूसरा व्यक्ति आपके बारे में क्या गलत कह सकता है, मशीन की प्रवृत्ति के विपरीत काम करने के अन्य तरीके हैं।
- But these are **workarounds**, not solutions.
लेकिन ये केवल **अस्थायी उपाय** हैं, समाधान नहीं।
- AI, in its current chatbot **form factor**, tends to amplify whatever system it is paired with — good or broken.
एआई अपने वर्तमान चैटबॉट रूप में, जिस भी प्रणाली के साथ जुड़ा होता है, उसे बढ़ा देता है — चाहे वह अच्छी हो या खराब।
- When the system being amplified is your own **bias**, your own grievance, or your own desire to be right, then the machine will not correct you.
जब बढ़ाई जा रही प्रणाली आपका अपना **पूर्वाग्रह**, आपकी शिकायत या सही साबित होने की इच्छा होती है, तो मशीन आपको सुधार नहीं करेगी।
- It will confirm your biases, in the most **academic-sounding language** it can find, until you return for more.
यह आपके पूर्वाग्रहों की पुष्टि करेगी, जितनी संभव हो उतनी **शैक्षणिक भाषा** में, जब तक आप फिर से वापस न आएंगे।
- A tool that tells you what you want to hear is not a **thinking tool**.
एक उपकरण जो आपको वही बताता है जो आप सुनना चाहते हैं, वह **विचारशील उपकरण** नहीं है।
- It is a **mirror**.
वह एक **दर्पण** है।
- And a mirror, no matter how sophisticated, is the last thing you need when you are trying to understand someone else.
और एक दर्पण, चाहे कितना भी उन्नत क्यों न हो, तब सबसे अनुपयुक्त होता है जब आप किसी अन्य को समझने का प्रयास कर रहे होते हैं।



The long hop

Q: Why did kangaroos evolve hopping?

– Gayatri Chandrashekar,

GS III: S&T

Even if an animal is less intelligent than humans at particular tasks, it can still make complex decisions. An interesting one concerns how it searches for food. Over the last 20 million years or so, as the Australian landmass drifted north, it slowly became drier and its interiors more arid, changing from dense forests to open grasslands and scrubland. These tough grasses are low in nutrients, which forced animals to evolve special teeth and digestive systems

that were more complex, capable of fermentation. In this environment, food was sparse and the distance between food sources was large. In search theory, animals foraging in this condition would have to use a pattern called a Levy flight. Kangaroos evolved the ability to hop larger distances on two legs, as that was more efficient than running on four legs. As rainfall became unpredictable, female kangaroos also became able to pause embryonic development so they could time births to happen in better conditions.

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

26A. Why did kangaroos evolve hopping?

(कंगारू ने कूदने की क्षमता क्यों विकसित की?)

• Even if an animal is less **intelligent** than humans at particular tasks, it can still make **complex decisions**.
भले ही कोई जानवर कुछ कार्यों में मनुष्यों से कम **बुद्धिमान** हो, फिर भी वह **जटिल निर्णय** ले सकता है।

• An interesting one concerns how it **searches for food**.
एक रोचक प्रश्न यह है कि वह **भोजन की खोज** कैसे करता है।

• Over the last **20 million years** or so, as the **Australian landmass** drifted north, it slowly became drier and its interiors more **arid**, changing from dense forests to open **grasslands and scrubland**.

पिछले लगभग **2 करोड़ वर्षों** में, जब **ऑस्ट्रेलियाई भूभाग** उत्तर की ओर खिसका, तो यह धीरे-धीरे अधिक शुष्क और अंदरूनी क्षेत्र अधिक **मरुस्थलीय** हो गए, जिससे घने जंगलों की जगह **खुले घास के मैदान और झाड़ीदार भूमि** ने ले ली।

- These tough grasses are low in **nutrients**, which forced animals to evolve special **teeth** and **digestive systems** that were more complex, capable of **fermentation**.
ये कठोर घासों **पोषक तत्वों** में कम होती हैं, जिससे जानवरों को विशेष **दांत** और अधिक जटिल **पाचन तंत्र** विकसित करने पड़े, जो **किण्वन** करने में सक्षम थे।
- In this environment, food was **sparse** and the distance between food sources was large. इस वातावरण में भोजन **कम मात्रा में** था और भोजन स्रोतों के बीच दूरी अधिक थी।
- In **search theory**, animals foraging in this condition would have to use a pattern called a **Levy flight**.
सर्च थ्योरी के अनुसार, इस स्थिति में भोजन खोजने वाले जानवरों को **लेवी फ्लाइट** नामक पैटर्न का उपयोग करना पड़ता है।
- Kangaroos evolved the ability to **hop larger distances** on two legs, as that was more **efficient** than running on four legs.
कंगारूओं ने दो पैरों पर **लंबी दूरी तक कूदने** की क्षमता विकसित की, क्योंकि यह चार पैरों पर दौड़ने की तुलना में अधिक **कुशल** था।
- As **rainfall** became unpredictable, female kangaroos also became able to pause **embryonic development** so they could time births to happen in better conditions.
जैसे-जैसे **वर्षा** अनिश्चित हो गई, मादा कंगारूओं ने **भ्रूण विकास** को रोकने की क्षमता भी विकसित की, ताकि वे बेहतर परिस्थितियों में जन्म का समय निर्धारित कर सकें।



Mitigating fertiliser crunch via coal gasification a far cry

Industry players argue that coal gasification is one avenue through which domestic fertiliser supplies could be secured, but very few coal gasification projects have scaled to advanced stage

GS III: S&T
Saptaparni Ghosh
NEW DELHI

Amid pressure on supplies of urea and fertilisers due to the escalating tensions in West Asia, a possible mitigation of these shortages through coal gasification still seems distant, according to sector experts.

According to them, very few coal gasification projects have so far scaled to an advanced stage.

The Ministry of Coal, however, told *The Hindu* that the government was confident that the target of 100 million tonnes of gasification by 2030 will be met as per schedule.

As a more sustainable mining technique, coal gasification involves the conversion of coal into syngas (synthetic gas), which can be further used to produce downstream products like methanol, ammonium nitrate, synthetic natural gas (SNG) and fertilisers, among other products. Amid concerns over the domestic availability of fertilisers and urea due to the conflict in West Asia, industry players have argued that coal gasification is one avenue through which domestic supplies could have been secured.

Challenging target

According to Kapil Bansal, who oversees the Energy Transition and Decarbonisation verticals at EY-Parthenon India, while the policy intent is strong, the



Coal gasification involves conversion of coal into syngas, which can then be used to make products like fertilisers. FILE PHOTO

timelines are tight.

"Industry estimates indicate that commercial output remains limited and partial achievement, that is, 50-60 million tonnes is possible, with only a handful of large projects at advanced, planning stages," Mr. Bansal said.

"With less than four years remaining, most observers believe that achieving the complete 100 MT target will be challenging, unless project execution accelerates materially in the next 24-36 months," he added. The coal ministry pointed to seven gasification projects, including those by private and State-owned entities combined, that have been granted cumulative financial support of up to ₹6,133 crore in the first phase of the government's scheme.

Notably, the ministry further stated that "in the coming months, more projects are expected to be sanctioned".

The existing projects include those being executed

in separate joint ventures of Coal India with Bharat Heavy Electricals and Gas Authority of India Ltd. (GAIL), and its own project in Western Coalfields, alongside those of private entities as Jindal Steel and Greta Energy and Metal, among others.

However, all of these projects are expected to come on line only by 2029-30, according to Coal Minister G. Kishan Reddy's reply in the Lok Sabha.

"Groundbreaking of four of these projects have already been conducted. Rest of the projects are also progressing," the Ministry said in its response to *The Hindu*. "Coal Gasification Projects at Talcher Fertiliser Limited and Jindal Steel & Power Limited at the Angul Integrated Steel Plants are in advanced stages."

While industry observers and participants are largely divided about whether technology itself will be a constraint in the development of the coal gasification sector in India,

they agree that a long-term definite policy roadmap that necessitates guaranteed offtake and offers price-support mechanisms is an imperative.

Mr. Bansal emphasised that coal gasification projects are capital-intensive and that had constrained private participation.

"[This is] especially in the absence of assured long-term offtake or price support mechanisms," he elaborated. "Also, uncertainty around feedstock pricing, product competitiveness, and return profiles has weakened project bankability."

An industry participant speaking to *The Hindu* on the condition of anonymity said "a long-term definite policy would ensure greater private sector participation in the space along with the public sector, which would be beneficial for the overall gasification target".

Regarding the necessary technology, this official stated, "It [technology] is something that entails constant learning, once it is instituted, we will evolve it according to our local requirements and conditions [such as processing high-ash content]. We would be able to find a path map."

Industry participants have written to the government seeking parity for coal-based urea projects with gas-based plants with respect to offtake assurances and earmarking capacities for coal gasification.

26A. Mitigating fertiliser crunch via coal gasification a far cry कोयला गैसीफिकेशन के जरिए उर्वरक संकट का समाधान अभी दूर

• Industry players argue that **coal gasification** is one avenue through which domestic fertiliser supplies could be secured, but very few coal gasification projects have scaled to advanced stage.

उद्योग के खिलाड़ी कहते हैं कि

कोयला गैसीफिकेशन घरेलू उर्वरक

आपूर्ति सुनिश्चित करने का एक

तरीका हो सकता है, लेकिन बहुत कम

परियोजनाएँ उन्नत चरण तक पहुँच

पाई हैं।

• Amid pressure on supplies of urea and fertilisers due to the escalating tensions in **West Asia**, a possible mitigation of these shortages through coal gasification still seems distant, according to sector experts.

पश्चिम एशिया में बढ़ते तनाव के

कारण यूरिया और उर्वरकों की आपूर्ति

पर दबाव के बीच, विशेषज्ञों के अनुसार

कोयला गैसीफिकेशन से समाधान

अभी दूर लगता है।

• According to them, very few coal gasification projects

have so far scaled to an advanced stage.

उनके अनुसार अब तक बहुत कम कोयला गैसीफिकेशन परियोजनाएँ उन्नत स्तर तक पहुँची हैं।

- The **Ministry of Coal**, however, told *The Hindu* that the government was confident that the target of **100 million tonnes** of gasification by 2030 will be met as per schedule.

हालांकि, **कोयला मंत्रालय** ने कहा कि सरकार को विश्वास है कि 2030 तक **100 मिलियन टन** गैसीफिकेशन का लक्ष्य समय पर पूरा होगा।

- As a more sustainable mining technique, coal gasification involves the conversion of coal into **syngas (synthetic gas)**, which can be further used to produce downstream products like methanol, ammonium nitrate, synthetic natural gas (SNG) and fertilisers, among other products.

एक अधिक टिकाऊ खनन तकनीक के रूप में, कोयला गैसीफिकेशन में कोयले को **सिंगैस (सिंथेटिक गैस)** में बदला जाता है, जिसका उपयोग मेथनॉल, अमोनियम नाइट्रेट, सिंथेटिक प्राकृतिक गैस (SNG) और उर्वरकों के उत्पादन में किया जा सकता है।

- Amid concerns over the domestic availability of fertilisers and urea due to the conflict in West Asia, industry players have argued that coal gasification is one avenue through which



domestic supplies could have been secured.

पश्चिम एशिया के संघर्ष के कारण घरेलू उर्वरक और यूरिया की उपलब्धता को लेकर चिंताओं के बीच, उद्योग ने कहा है कि कोयला गैसीफिकेशन एक विकल्प हो सकता था जिससे घरेलू आपूर्ति सुनिश्चित की जा सकती थी।

Challenging target

चुनौतीपूर्ण लक्ष्य

- According to **Kapil Bansal**, who oversees the Energy Transition and Decarbonisation verticals at EY-Parthenon India, while the policy intent is strong, the timelines are tight. EY-Parthenon India में ऊर्जा संक्रमण और डीकार्बोनाइजेशन संभालने वाले **कपिल बंसल** के अनुसार, नीति का उद्देश्य मजबूत है लेकिन समयसीमा कड़ी है।
- “Industry estimates indicate that commercial output remains limited and partial achievement, that is, 50-60 million tonnes is possible, with only a handful of large projects at advanced, planning stages,” Mr. Bansal said. उन्होंने कहा कि उद्योग के अनुमान के अनुसार व्यावसायिक उत्पादन सीमित है और केवल 50-60 मिलियन टन की आंशिक उपलब्धि ही संभव है, क्योंकि कुछ ही बड़े प्रोजेक्ट उन्नत योजना चरण में हैं।
- “With less than four years remaining, most observers believe that achieving the complete 100 MT target will be challenging, unless project execution accelerates materially in the next 24-36 months,” he added. उन्होंने कहा कि चार साल से कम समय बचा है, इसलिए यदि अगले 24-36 महीनों में परियोजनाओं की गति नहीं बढ़ी, तो 100 मिलियन टन लक्ष्य हासिल करना कठिन होगा।
- The coal ministry pointed to seven gasification projects, including those by private and State-owned entities combined, that have been granted cumulative financial support of up to **₹6,133 crore** in the first phase of the government’s scheme. कोयला मंत्रालय ने सात गैसीफिकेशन परियोजनाओं का उल्लेख किया, जिन्हें सरकार की योजना के पहले चरण में कुल **₹6,133 करोड़** की वित्तीय सहायता दी गई है।
- Notably, the ministry further stated that “in the coming months, more projects are expected to be sanctioned”. मंत्रालय ने कहा कि आने वाले महीनों में और परियोजनाओं को मंजूरी मिलने की उम्मीद है।
- The existing projects include those being executed in separate joint ventures of **Coal India** with **Bharat Heavy Electricals** and **Gas Authority of India Ltd. (GAIL)**, and its own project in Western Coalfields, alongside those of private entities as **Jindal Steel** and **Greta Energy and Metal**, among others. मौजूदा परियोजनाओं में **कोल इंडिया** की **भारत हेवी इलेक्ट्रिकल्स** और **गेल** के साथ संयुक्त परियोजनाएँ, वेस्टर्न कोलफील्ड्स में इसकी अपनी परियोजना, तथा निजी कंपनियों जैसे **जिंदल स्टील** और **ग्रेटा एनर्जी एंड मेटल** शामिल हैं।
- However, all of these projects are expected to come on line only by 2029-30, according to Coal Minister **G. Kishan Reddy’s** reply in the Lok Sabha. हालांकि, कोयला मंत्री **जी. किशन रेड्डी** के अनुसार ये सभी परियोजनाएँ 2029-30 तक ही शुरू हो पाएंगी।
- “Groundbreaking of four of these projects have already been conducted. Rest of the projects are also progressing,” the Ministry said in its response to The Hindu. मंत्रालय ने कहा कि चार परियोजनाओं का भूमि पूजन हो चुका है और बाकी परियोजनाएँ भी प्रगति पर हैं।
- “Coal Gasification Projects at **Talcher Fertilizer Limited** and **Jindal Steel & Power Limited** at the Angul Integrated Steel Plants are in advanced stages.” मंत्रालय ने कहा कि **तालचर फर्टिलाइजर लिमिटेड** और **जिंदल स्टील एंड पावर लिमिटेड** की परियोजनाएँ उन्नत चरण में हैं।
- While industry observers and participants are largely divided about whether technology itself will be a constraint in the development of the coal gasification sector in India, they agree that a long-term definite policy roadmap that necessitates guaranteed offtake and offers price-



support mechanisms is an imperative.

हालांकि उद्योग विशेषज्ञ इस बात पर विभाजित हैं कि तकनीक बाधा बनेगी या नहीं, लेकिन वे सहमत हैं कि दीर्घकालिक नीति, सुनिश्चित ऑफटेक और मूल्य समर्थन आवश्यक हैं।

- Mr. Bansal emphasised that coal gasification projects are capital-intensive and that had constrained private participation.
श्री बंसल ने कहा कि ये परियोजनाएँ पूंजी-गहन हैं, जिससे निजी क्षेत्र की भागीदारी सीमित रही है।
- “[This is] especially in the absence of assured long-term offtake or price support mechanisms,” he elaborated.
उन्होंने कहा कि यह विशेष रूप से तब होता है जब दीर्घकालिक ऑफटेक या मूल्य समर्थन का अभाव होता है।
- “Also, uncertainty around feedstock pricing, product competitiveness, and return profiles has weakened project bankability.”
उन्होंने यह भी कहा कि कच्चे माल की कीमत, उत्पाद प्रतिस्पर्धा और रिटर्न को लेकर अनिश्चितता ने परियोजनाओं की वित्तीय विश्वसनीयता को कमजोर किया है।
- An industry participant speaking to The Hindu on the condition of anonymity said “a long-term definite policy would ensure greater private sector participation in the space along with the public sector, which would be beneficial for the overall gasification target”.
एक उद्योग प्रतिनिधि ने कहा कि दीर्घकालिक स्पष्ट नीति से निजी और सार्वजनिक दोनों क्षेत्रों की भागीदारी बढ़ेगी, जो गैसीफिकेशन लक्ष्य के लिए लाभकारी होगी।
- Regarding the necessary technology, this official stated, “It [technology] is something that entails constant learning, once it is instituted, we will evolve it according to our local requirements and conditions [such as processing high-ash content]. We would be able to find a path map.”
तकनीक के बारे में अधिकारी ने कहा कि यह निरंतर सीखने की प्रक्रिया है और इसे स्थानीय आवश्यकताओं के अनुसार विकसित किया जाएगा।
- Industry participants have written to the government seeking parity for coal-based urea projects with gas-based plants with respect to offtake assurances and earmarking capacities for coal gasification.
उद्योग प्रतिनिधियों ने सरकार से मांग की है कि कोयला-आधारित यूरिया परियोजनाओं को गैस आधारित संयंत्रों के बराबर ऑफटेक और क्षमता आवंटन दिया जाए।

GS Paper III: Environment		26 April 2026
TOPICS COVERED		
26A	T.N. launches third synchronised Nilgiri Tahr survey तमिलनाडु ने तीसरा समन्वित नीलगिरि तहर सर्वेक्षण शुरू किया	
26A	Invertebrate Cretaceous ‘krakens’ were apex predators अकशेरुकी क्रेटेशियस ‘क्रैकन’ शीर्ष शिकारी थे	



T.N. launches third synchronised Nilgiri Tahr survey

GS III: Environment
The Hindu Bureau
CHENNAI

The Tamil Nadu Forest Department has commenced the third synchronised survey of the Nilgiri Tahr from April 24 to 27, covering the species' entire range across the State. Conducted under the flagship Project Nilgiri Tahr, the annual exercise plays a crucial role in long-term conservation planning for Tamil Nadu's State animal.

The survey is being carried out in coordination with the Kerala Forest Department to ensure simultaneous counting across the Western Ghats' shared landscape.

Launched on October 12, 2023, Project Nilgiri Tahr focuses on comprehensive conservation strategies, including habitat management, population monitoring, and the use of advanced scientific methods.

An official release said the survey is timed after the winter calving season, when young tahr are visible

alongside adult herds, improving the reliability of population assessments.

The first survey in 2024 established a baseline, estimating 1,031 individuals across 140 survey blocks in 13 forest divisions. The second survey in 2025 expanded coverage to 177 blocks and recorded a population of 1,303 individuals, alongside evidence of habitat recolonisation in areas such as Pasumalai.

As per the release, this year's survey marks a significant scale-up. Covering over 3,100 km, it spans 14 forest divisions, 43 ranges, 124 beats, and 177 survey blocks – from Ashambu Mottai in Kanniyakumari to Tavalamalai in Gudalur. Nearly 800 trained front-line staff are participating in the exercise.

Mobile application

For the first time, the department has introduced a dedicated mobile application, *Varudai*, enabling real-time data collection, GPS tracking, and standardised reporting.

शामिल है।

- An official release said the survey is timed after the **winter calving season**, when young tahr are visible alongside adult herds, improving the reliability of **population assessments**. एक आधिकारिक विज्ञप्ति में कहा गया कि यह सर्वेक्षण **शीतकालीन प्रसव काल** के बाद किया जाता है, जब युवा तहर वयस्क झुंडों के साथ दिखाई देते हैं, जिससे **जनसंख्या आकलन** की विश्वसनीयता बढ़ती है।
- The first survey in 2024 established a baseline, estimating **1,031 individuals** across **140 survey blocks** in **13 forest divisions**. 2024 में पहले सर्वेक्षण ने आधार रेखा स्थापित की, जिसमें **13 वन प्रभागों** के **140 सर्वेक्षण ब्लॉकों** में **1,031 व्यक्तियों** का अनुमान लगाया गया।
- The second survey in 2025 expanded coverage to **177 blocks** and recorded a population of **1,303 individuals**, alongside evidence of **habitat recolonisation** in areas such as **Pasumalai**. 2025 में दूसरे सर्वेक्षण ने कवरेज को **177 ब्लॉकों** तक बढ़ाया और **1,303 व्यक्तियों** की जनसंख्या दर्ज की, साथ ही **पासुमलाई** जैसे क्षेत्रों में **आवास पुनः बसावट** के प्रमाण भी मिले।

26A. T.N. launches third synchronised Nilgiri Tahr survey

तमिलनाडु ने तीसरा समन्वित नीलगिरि तहर सर्वेक्षण शुरू किया

• The **Tamil Nadu Forest Department** has commenced the third synchronised survey of the **Nilgiri Tahr** from April 24 to 27, covering the species' entire range across the State.

तमिलनाडु वन विभाग ने 24 से 27 अप्रैल तक **नीलगिरि तहर** के तीसरे समन्वित सर्वेक्षण की शुरुआत की है, जो राज्य में इस प्रजाति के पूरे क्षेत्र को कवर करता है।

• Conducted under the flagship **Project Nilgiri Tahr**, the annual exercise plays a crucial role in long-term **conservation planning** for Tamil Nadu's State animal.

प्रमुख **प्रोजेक्ट नीलगिरि तहर** के तहत आयोजित यह वार्षिक अभ्यास तमिलनाडु के राज्य पशु के लिए दीर्घकालिक **संरक्षण योजना** में महत्वपूर्ण भूमिका निभाता है।

• The survey is being carried out in coordination with the **Kerala Forest Department** to ensure simultaneous counting across the **Western Ghats' shared landscape**.

यह सर्वेक्षण **केरल वन विभाग** के साथ समन्वय में किया जा रहा है ताकि **पश्चिमी घाट के साझा क्षेत्र** में एक साथ गणना सुनिश्चित की जा सके।

• Launched on October 12, 2023, **Project Nilgiri Tahr** focuses on comprehensive conservation strategies, including **habitat management**, **population monitoring**, and the use of advanced scientific methods.

12 अक्टूबर 2023 को शुरू किया गया **प्रोजेक्ट नीलगिरि तहर** व्यापक संरक्षण रणनीतियों पर केंद्रित है, जिसमें **आवास प्रबंधन**, **जनसंख्या निगरानी**, और उन्नत वैज्ञानिक तरीकों का उपयोग



- As per the release, this year's survey marks a significant scale-up. विज्ञप्ति के अनुसार, इस वर्ष का सर्वेक्षण एक महत्वपूर्ण विस्तार को दर्शाता है।
- Covering over **3,100 km**, it spans **14 forest divisions, 43 ranges, 124 beats, and 177 survey blocks** — from **Ashambu Mottai in Kanniyakumari to Tavalamalai in Gudalur**. **3,100 किमी** से अधिक क्षेत्र को कवर करते हुए, यह **14 वन प्रभागों, 43 रेंजों, 124 बीट्स, और 177 सर्वेक्षण ब्लॉकों** में फैला है — **कन्याकुमारी के अशंबू मोट्टई से लेकर गुडालूर के तवलामलाई तक**।
- Nearly **800 trained frontline staff** are participating in the exercise. इस अभ्यास में लगभग **800 प्रशिक्षित फ्रंटलाइन कर्मचारी** भाग ले रहे हैं।

Mobile application

मोबाइल एप्लिकेशन

- For the first time, the department has introduced a dedicated mobile application, **Varudai**, enabling **real-time data collection, GPS tracking, and standardised reporting**. पहली बार, विभाग ने एक समर्पित मोबाइल एप्लिकेशन **वरुडई** शुरू किया है, जो **रीयल-टाइम डेटा संग्रह, जीपीएस ट्रैकिंग, और मानकीकृत रिपोर्टिंग** को सक्षम बनाता है।



GS III: Environment

Invertebrate Cretaceous 'krakens' were apex predators

The earliest finned octopuses were top predators that rivalled giant marine reptiles. By analysing large fossilised jaws, scientists have found two species — *Nanaimoteuthis jeletzkyi* and *N. haggarti* — that lived 100-72 million years ago and could have been 7-19 m long. Wear on the jaws indicated the octopuses often crushed hard bones while asymmetric wear patterns suggested they were already highly intelligent. The findings overturn the idea that ancient food chains were crowned by vertebrates alone.

26A. Invertebrate Cretaceous 'krakens' were apex predators

अकशेरुकी क्रेटेशियस 'क्रैकन' शीर्ष शिकारी थे

- The earliest **finned octopuses** were **top predators** that rivalled giant **marine reptiles**. प्रारंभिक **पंखयुक्त ऑक्टोपस** **शीर्ष शिकारी** थे, जो विशाल **समुद्री सरीसृपों** के बराबरी करते थे।

- By analysing large **fossilised jaws**, scientists have found two species — **Nanaimoteuthis jeletzkyi** and **N. haggarti** — that lived **100-72 million years ago** and could have been **7-19 m long**.

बड़े **जीवाश्मीकृत जबड़ों** का विश्लेषण करके वैज्ञानिकों ने दो प्रजातियाँ —

Nanaimo Teuthis jeletzky और **N. haggerty** — की पहचान की, जो **100-72 मिलियन वर्ष पूर्व** जीवित थीं और जिनकी लंबाई **7-19 मीटर** तक हो सकती थी।

- Wear on the jaws indicated the octopuses often crushed **hard bones** while **asymmetric wear patterns** suggested they were already highly **intelligent**.

जबड़ों पर घिसाव से संकेत मिला कि ये ऑक्टोपस अक्सर **कठोर हड्डियों** को

कुचलते थे, जबकि **असममित घिसाव पैटर्न** से यह पता चलता है कि वे पहले से ही अत्यधिक **बुद्धिमान** थे।

- The findings overturn the idea that ancient **food chains** were crowned by **vertebrates** alone. इन निष्कर्षों ने इस धारणा को खारिज कर दिया कि प्राचीन **खाद्य श्रृंखलाओं** के शीर्ष पर केवल **कशेरुकी जीव** ही होते थे।