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THE HINDU NEWSPAPER

11 FEBRUARY 2026

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Veteran journalist P. Ramaiah passes away वरिष्ठ पत्रकार पी. रामैया का निधन

- **Veteran journalist** and former Member of the **Karnataka Legislative Council P. Ramaiah, 92**, passed away in **Bengaluru** at a private hospital on **Tuesday night**.
वरिष्ठ पत्रकार और कर्नाटक विधान परिषद के पूर्व सदस्य पी. रामैया, 92 वर्ष, का बेंगलुरु के एक निजी अस्पताल में मंगलवार रात निधन हो गया।

Sofiya sets new World record on way to gold

PCS

SHOOTING

Sports Bureau
NEW DELHI

Kazakhstan's Sofiya Shulzhenko set a new World record in the 50m rifle 3 positions women's event on her way to winning gold at the Asian Rifle/ Pistol Championship here on Tuesday.

India, meanwhile, claimed two more gold medals on day seven of the competition at the Dr. Karni Singh Shooting Range here.

Sofiya ended the 35-shot final with a score of 358.2, four points clear of silver-winning Aakriti Dahiya of India.

Aakriti's senior teammate Anjum Moudgil, a World Championship me-



On the podium: 50m rifle 3P gold winner Sofiya with silver medalist Aakriti, right, and Anjum, the bronze winner. SPECIAL ARRANGEMENT

dalist, clinched bronze with 340.4. In the junior women's 3 positions final, Prachi Gaikwad emerged triumphant with 353.3.

Kazakh shooter Tomiris Amanova, 14, won silver with 351.4 while Anushka Thokur bagged another bronze for the host with an effort that ended after the 34th shot at 341.1.

In the women's 50m rifle 3 positions final, Aakriti

was in the lead after the first kneeling position, but Sofiya had a strong display in the second prone position to rise up to second. Thereafter, she was the only shooter to log above 50 points in both the five-shot series of the standing position.

India's medal tally currently stands at 39 gold, 15 silver and 12 bronze medals.

Sofiya sets new World record on way to gold सोया ने स्वर्ण की ओर बढ़ते हुए नया विश्व रिकॉर्ड बनाया

- Kazakhstan's **Sofiya Shulzhenko** set a new **World record** in the **50m round 3 positions women's event** on her way to winning **gold** at the **Asian Rifle/ Pistol Championship** here on Tuesday.

कज़ाख़स्तान की सोफ़िया शुलज़ेंको ने मंगलवार को यहां आयोजित एशियन राइफल/पिस्टल चैंपियनशिप में 50m राइफल 3 पोज़िशन महिला स्पर्धा में नया विश्व रिकॉर्ड बनाते हुए स्वर्ण पदक जीता।

- India, meanwhile, claimed two more **gold medals** on **day seven** of the competition at the **Dr. Karni Singh Shooting Range** here.

इस बीच, भारत ने यहां डॉ. कर्णी सिंह शूटिंग रेंज में प्रतियोगिता के सातवें दिन दो और स्वर्ण पदक जीते।

- **Sofiya ended the 35-shot final with a score of 358.2**, four points clear of silver-winning **Aakriti Dahiya** of India.

सोफ़िया ने 35-शॉट फ़ाइनल को 358.2 के स्कोर के साथ समाप्त किया, जो भारत की रजत विजेता आकृति दहिया से चार अंक अधिक था।

- Aakriti's senior teammate **Anjum Moudgil**, a **World Championship medalist**, clinched **bronze** with **340.4**.



आकृति की वरिष्ठ साथी अंजुम मौदगिल, जो विश्व चैपियनशिप पदक विजेता हैं, ने 340.4 के साथ कांस्य पदक जीता।

- In the junior women's 3 positions final, Prachi Gaikwad emerged triumphant with 353.3. जूनियर महिला 3 पोज़िशन फाइनल में प्राची गायकवाड़ 353.3 के साथ विजयी रहीं।
- Kazakh shooter Tomiris Amanova, 14, won silver with 351.4 while Anushka Thokur bagged another bronze for the host with an effort that ended after the 34th shot at 341.1. कज़ाख़ शूटर टोमिरिस अमानोवा, 14, ने 351.4 के साथ रजत जीता, जबकि अनुष्का ठाकुर ने मेज़बान के लिए 34वें शॉट के बाद 341.1 के प्रयास के साथ एक और कांस्य पदक हासिल किया।
- In the women's 50m round 3 positions final, Aakriti was in the lead after the first kneeling position, but Soya had a strong display in the second prone position to rise up to second. महिला 50m राइल 3 पोज़िशन फाइनल में आकृति पहले नीलिंग पोज़िशन के बाद बढ़त में थीं, लेकिन सोया ने दूसरे प्रोन पोज़िशन में मजबूत प्रदर्शन कर दूसरे स्थान पर पहुंचीं।
- Thereafter, she was the only shooter to log above 50 points in both the live-shot series of the standing position. इसके बाद, वह स्टैंडिंग पोज़िशन की दोनों पांच-शॉट श्रृंखलाओं में 50 अंक से अधिक हासिल करने वाली एकमात्र शूटर थीं।
- India's medal tally currently stands at 39 gold, 15 silver and 12 bronze medals. भारत की पदक तालिका वर्तमान में 39 स्वर्ण, 15 रजत और 12 कांस्य पदक पर पहुंच गई है।

GS Paper 1: History,

TOPICS COVERED

11 February 2026

1. **Wajid Ali Shah was not exiled to Calcutta, says book by descendant**
वंशज की पुस्तक के अनुसार वाजिद अली शाह को कलकत्ता निर्वासित नहीं किया गया था

Wajid Ali Shah was not exiled to Calcutta, says book by descendant

GS I: History
Bishwanath Ghosh
KOLKATA

Nawab Wajid Ali Shah was not exiled to Calcutta but he came to the city because he wanted to take a ship to London to submit a petition. However, that departure was restricted and he stayed on, according to a biography written by his great-grandson that has now been translated from Urdu to English by the biographer's daughter Talat Fatima.

Failed transit

"Lucknow and Calcutta can be called the two very big and very important chapters in Wajid Ali Shah's life. People usually think that he was sent in exile to Calcutta, that it was like a punishment from the British. The fact is he came to Calcutta of his own voli-



A calendar prepared by Wajid Ali Shah, the last emperor of Awadh, on display at the Victoria Memorial Hall in Kolkata. FILE PHOTO

tion. He wanted to present a petition before the British Parliament and before the Queen on his dethronement and on the atrocities committed by the British in India. He wanted to reach London via Calcutta, but

unfortunately that did not happen," said Ms. Fatima. She is the author of soon-to-be-released *Wajid Ali Shah: A Cultural and Literary Legacy* – published in India by Hachette – which is a transla-

tion into English of the biography authored in the mid-1990s by her father Kaukub Quder Sajjad Ali Meerza, a scholar who also served as a research consultant to Satyajit Ray for *Shatranj Ke Khiladi*.

Backed by research

"Most books about Wajid Ali Shah talk about his image, but this book stands out because it is backed by research of about 38 months, that is why it has many hitherto unknown facts. There are many confusions related to his date of birth, date of death, date of coronation, number of his books and compositions – all this has been meticulously researched," Ms. Fatima told *The Hindu*. "A lot needs to be known about him as a poet and a writer. Lucknow has some of his compositions, but in

Calcutta, a major part of his compositions that exist are his letters. He used to write love letters to his begums from whom he was separated. He used to write about his mental sufferings in those letters. People usually feel shy to share their love letters with the public, but not Wajid Ali Shah. He was an entirely different person. He said that his love letters were masterpieces in literature. Whatever he wrote to his begums are in Kolkata, mostly in Fort William," she said.

When asked how many begums the last king of Lucknow had, Ms. Fatima said the figure was between 50 and 60, with six to seven staying with him in Calcutta, where he spent the last three decades of his life, dying in 1887 at the age of 65.

She said she chose to translate her father's work because the readership of Urdu was very limited while that of English was worldwide.

'Secular to the core'

"Wajid Ali Shah is more relevant today than ever. We have a lot to learn from him. He was a devout Muslim, but at the same time he was secular to the core. Even his compositions included verses on Radha and Krishna, which you will find in the book. He had a healthy attitude towards other religions and languages. He wrote in Urdu, Persian, Arabic, Braj bhasaZKha. People harp about his relationship with the opposite sex, but that's mostly because of his own bold pen. This book tells you there is a lot more about him," Ms. Fatima said.

Wajid Ali Shah was not exiled to Calcutta, says book by descendant

वंशज की पुस्तक के अनुसार वाजिद अली शाह को कलकत्ता निर्वासित नहीं किया गया था

- Nawab Wajid Ali Shah was not exiled to Calcutta but he came to the city because he wanted to take a ship to London to submit a petition.
नवाब वाजिद अली शाह को कलकत्ता निर्वासित नहीं किया गया था बल्कि वे शहर इसलिए आए क्योंकि वे लंदन जाने के लिए जहाज लेना चाहते थे ताकि एक याचिका प्रस्तुत कर सकें।



- However, that departure was restricted and he stayed on, according to a biography written by his great-grandson that has now been translated from **Urdu to English** by the biographer's daughter **Talat Fatima**.
हालांकि, उस प्रस्थान पर रोक लगा दी गई और वे वहीं रुक गए, उनके परनाती द्वारा लिखी गई जीवनी के अनुसार, जिसे अब जीवनीकार की पुत्री **तलत फातिमा** ने **उर्दू से अंग्रेज़ी** में अनुवादित किया है।

Failed transit असफल प्रस्थान

- **“Lucknow and Calcutta can be called the two very big and very important chapters in Wajid Ali Shah's life.**
“लखनऊ और कलकत्ता, वाजिद अली शाह के जीवन के दो बहुत बड़े और बहुत महत्वपूर्ण अध्याय कहे जा सकते हैं।
- People usually think that he was sent in exile to **Calcutta**, that it was like a punishment from the **British**.
लोग आमतौर पर सोचते हैं कि उन्हें **कलकत्ता** निर्वासन में भेजा गया था, कि यह **ब्रिटिश** द्वारा दी गई सजा जैसा था।
- The fact is he came to **Calcutta** of his own volition.
सच्चाई यह है कि वे अपनी इच्छा से **कलकत्ता** आए थे।
- **He wanted to present a petition before the British Parliament and before the Queen on his dethronement and on the atrocities committed by the British in India.**
वे अपने पदच्युत किए जाने और **भारत में ब्रिटिश** द्वारा किए गए अत्याचारों के संबंध में **ब्रिटिश संसद** और **रानी** के समक्ष याचिका प्रस्तुत करना चाहते थे।
- He wanted to reach **London** via **Calcutta**, but unfortunately that did not happen,” said **Ms. Fatima**.
वे **कलकत्ता** के रास्ते **लंदन** पहुँचना चाहते थे, लेकिन दुर्भाग्यवश ऐसा नहीं हो सका,” **सुश्री फातिमा** ने कहा।
- **She is the author of soon-to-be-released Wajid Ali Shah: A Cultural and Literary Legacy — published in India by Hachette —** which is a translation into English of the biography authored in the mid-1990s by her father **Kaukub Quder Sajjad Ali Meerza**, a scholar who also served as a research consultant to **Satyajit Ray** for **Shatranj Ke Khiladi**.
वह शीघ्र प्रकाशित होने वाली **Wajid Ali Shah: A Cultural and Literary Legacy** की लेखिका हैं — जिसे **भारत में Hachette** द्वारा प्रकाशित किया जा रहा है — जो उनके पिता **कौक़ुब कुदर सज्जाद अली मीरज़ा** द्वारा 1990 के दशक के मध्य में लिखी गई जीवनी का अंग्रेज़ी अनुवाद है, जो **सत्यजीत रे** के लिए **शतरंज के खिलाड़ी** में शोध सलाहकार भी रहे थे।
- Whatever he wrote to his begums are in **Kolkata**, mostly in **Fort William**,” she said.
उन्होंने अपनी बेगमों को जो कुछ लिखा वह **कोलकाता**, मुख्यतः **फोर्ट विलियम** में है,” उन्होंने कहा।
- When asked how many begums the last king of **Lucknow** had, **Ms. Fatima** said the **figure was between 50 and 60, with six to seven staying with him in Calcutta**, where he spent the last three decades of his life, **dying in 1887 at the age of 65**.
जब पूछा गया कि **लखनऊ** के अंतिम राजा की कितनी बेगमें थीं, तो **सुश्री फातिमा** ने कहा कि संख्या **50 से 60** के बीच थी, जिनमें से **छह से सात** उनके साथ **कलकत्ता** में रहीं, जहाँ उन्होंने अपने जीवन के अंतिम तीन दशक बिताए और **1887** में **65 वर्ष** की आयु में उनका निधन हुआ।
- She said she chose to translate her father's work because the readership of **Urdu** was very limited while that of **English** was worldwide.
उन्होंने कहा कि उन्होंने अपने पिता के कार्य का अनुवाद इसलिए चुना क्योंकि **उर्दू** के पाठकों की संख्या बहुत सीमित थी जबकि **अंग्रेज़ी** के पाठक विश्वभर में थे।

‘Secular to the core’ ‘मूल रूप से धर्मनिरपेक्ष’

- **“Wajid Ali Shah is more relevant today than ever. We have a lot to learn from him. He was a devout Muslim, but at the same he was secular to the core. Even his compositions included verses on Radha and Krishna, which you will find in the book. He had a healthy attitude towards other religions and languages. He wrote in Urdu, Persian, Arabic, Braj bhas.**



People harp about his relationship with the opposite sex, but that's mostly because of his own bold pen. This book tells you there is a lot more about him," **Ms. Fatima** said.

"**वाजिद अली शाह** आज पहले से अधिक प्रासंगिक हैं। हमें उनसे बहुत कुछ सीखना है। वे एक आस्थावान मुस्लिम थे, लेकिन साथ ही मूल रूप से धर्मनिरपेक्ष थे। उनकी रचनाओं में **राधा और कृष्ण** पर श्लोक भी शामिल थे, जो आपको पुस्तक में मिलेंगे। अन्य धर्मों और भाषाओं के प्रति उनका स्वस्थ दृष्टिकोण था। उन्होंने **उर्दू, फ़ारसी, अरबी, ब्रज भाषा** में लिखा। लोग विपरीत लिंग के साथ उनके संबंधों पर जोर देते हैं, लेकिन यह अधिकतर उनकी अपनी निर्भिक लेखनी के कारण है। यह पुस्तक बताती है कि उनके बारे में बहुत कुछ और है," **सुश्री फातिमा** ने कहा।

GS Paper 1: Society

TOPICS COVERED

11 February 2026

- Gym trainer gets wave of support after news of decline in membership**
सदस्यता में गिरावट की खबर के बाद जिम ट्रेनर को समर्थन की लहर

Gym trainer gets wave of support after news of decline in membership

GS I: Society:

Ish Communalism

NEW DELHI

Help has poured in for Deepak Kumar, now popularly known as Mohammed Deepak, after news of a sharp decline in membership at his gym went viral following a Republic Day incident in Kotdwar, Uttarakhand. Social media was abuzz with users from across the country showing interest in becoming a member of the gym.

Mr. Deepak came into the national spotlight after he confronted a mob of right-wing members accused of harassing a 71-year-old Muslim garment seller and pressuring him to change the name of his shop.

The episode unfolded on Republic Day, when



Deepak Kumar

Vishwa Hindu Parishad (VHP) and Bajrang Dal members objected to the name of a four decades-old garment store, Baba School Dress and Matching Centre, run by Wakeel Ahmed and insisted it be renamed identifying the owner's religion. As the situation outside the shop grew tense, Mr. Kumar in-

tervened. Footage of the incident later circulated widely online, with particular attention on a clip in which he introduced himself by saying, "Mera naam Mohammed Deepak (My name is Mohammad Deepak)."

Testing his resolve

Since then, Mr. Kumar has been facing protests, online and offline harassment and an FIR lodged by the police. His wife and daughter have also fallen ill after witnessing the chaos around them.

Above all, Mr. Kumar's long-running gym, Hulk, situated in the Jhanda Chauk area in Kotdwar, previously had around 150 members. The membership has declined to 15-20 now, said Deepak Singh, a

trainer at the gym and owner's namesake.

Recalling how the gym, which had once been alive with sweat-drenched men occupying the floors, he said the place was now covered in darkness most of the time as many people had stopped coming.

"Police keep sitting outside the gym all the time. The members are fearful that if something will happen some day, they all will be in trouble," Mr. Kumar said.

Despite the decline in footfall, Mr. Kumar still arrives here before sunrise, wiping down machines, adjusting mirrors, believing in the space he had built with his own hands, will once again see people working out and chasing their dreams.

Gym trainer gets wave of support after news of decline in membership

सदस्यता में गिरावट की खबर के बाद जिम ट्रेनर को समर्थन की लहर

- Help has poured in for **Deepak Kumar**, now popularly known as **Mohammed Deepak**, after news of a sharp decline in membership at his gym went viral following a **Republic Day** incident in **Kotdwar, Uttarakhand**.
दीपक कुमार, जिन्हें अब लोकप्रिय रूप से **मोहम्मद दीपक** के नाम से जाना जाता है, को मदद मिलनी शुरू हो



गई है, जब उनके जिम में सदस्यता में तेज गिरावट की खबर **कोटद्वार, उत्तराखंड** में **गणतंत्र दिवस** की घटना के बाद वायरल हो गई।

- Social media was abuzz with users from across the country showing interest in becoming a member of the gym.
सोशल मीडिया देशभर के उपयोगकर्ताओं द्वारा जिम की सदस्यता लेने में रुचि दिखाने से गूँज उठा।
- Mr. Deepak came into the national spotlight after he confronted a mob of right-wing members accused of harassing a **71-year-old Muslim garment seller** and pressuring him to change the name of his shop.
श्री दीपक राष्ट्रीय सुर्खियों में तब आए जब उन्होंने दक्षिणपंथी सदस्यों की भीड़ का सामना किया, जिन पर एक **71 वर्षीय मुस्लिम कपड़ा विक्रेता** को परेशान करने और उसकी दुकान का नाम बदलने का दबाव डालने का आरोप था।
- The episode unfolded on **Republic Day**, when **Vishwa Hindu Parishad (VHP)** and **Bajrang Dal** members objected to the name of a four decades-old garment store, **Baba School Dress and Matching Centre**, run by **Wakeel Ahmed** and insisted it be renamed identifying the owner's religion.
यह घटना **गणतंत्र दिवस** पर हुई, जब **विश्व हिंदू परिषद (VHP)** और **बजरंग दल** के सदस्यों ने चार दशक पुरानी परिधान दुकान **बाबा स्कूल ड्रेस एंड मैचिंग सेंटर**, जिसे **वकील अहमद** चलाते हैं, के नाम पर आपत्ति जताई और मालिक के धर्म की पहचान के साथ इसे बदलने की मांग की।
- As the situation outside the shop grew tense, Mr. Kumar intervened.
दुकान के बाहर स्थिति तनावपूर्ण होने पर श्री कुमार ने हस्तक्षेप किया।
- Footage of the incident later circulated widely online, with particular attention on a clip in which he introduced himself by saying, "**Mera naam Mohammed Deepak (My name is Mohammad Deepak).**"
घटना का वीडियो बाद में ऑनलाइन व्यापक रूप से प्रसारित हुआ, विशेष रूप से उस क्लिप पर ध्यान गया जिसमें उन्होंने अपना परिचय देते हुए कहा, "**मेरा नाम मोहम्मद दीपक है (My name is Mohammad Deepak).**"

Testing his resolve उनके संकल्प की परीक्षा

- Since then, Mr. Kumar has been facing protests, online and offline harassment and an **FIR** lodged by the police.
तब से श्री कुमार विरोध, ऑनलाइन और ऑफलाइन उत्पीड़न और पुलिस द्वारा दर्ज एक **एफआईआर** का सामना कर रहे हैं।
- His wife and daughter have also fallen ill after witnessing the chaos around them.
उनकी पत्नी और बेटी भी अपने आसपास के अराजक माहौल को देखने के बाद बीमार पड़ गई हैं।
- Above all, Mr. Kumar's long-running gym, **Hulk**, situated in the **Jhanda Chauk** area in **Kotdwar**, previously had around **150 members**.
सबसे बढ़कर, श्री कुमार का लंबे समय से चल रहा जिम **हल्क**, जो **कोटद्वार** के **झंडा चौक** क्षेत्र में स्थित है, पहले लगभग **150 सदस्य** थे।
- The membership has declined to **15-20** now, said **Deepak Singh**, a trainer at the gym and owner's namesake.
अब सदस्यता घटकर **15-20** रह गई है, जिम के प्रशिक्षक और मालिक के हमनाम **दीपक सिंह** ने कहा।
- Recalling how the gym, which had once been alive with sweat-drenched men occupying the floors, he said the place was now covered in darkness most of the time as many people had stopped coming.
उन्होंने याद करते हुए कहा कि जिम, जो कभी पसीने से तर-बतर पुरुषों से भरा रहता था, अब अधिकतर समय अंधेरे में डूबा रहता है क्योंकि कई लोगों ने आना बंद कर दिया है।
- "Police keep sitting outside the gym all the time. The members are fearful that if something will happen some day, they all will be in trouble," Mr. Kumar said.
"पुलिस हर समय जिम के बाहर बैठी रहती है। सदस्य डरे हुए हैं कि अगर किसी दिन कुछ हुआ, तो वे सभी मुसीबत में पड़ जाएंगे," श्री कुमार ने कहा।
- Despite the decline in footfall, Mr. Kumar still arrives here before sunrise, wiping down machines, adjusting mirrors, believing in the space he had built with his own hands, will once again see people working out and chasing their dreams.



आवागमन में गिरावट के बावजूद, श्री कुमार अब भी सूर्योदय से पहले यहां पहुंचते हैं, मशीनों को साफ करते हैं, शीशों को ठीक करते हैं, इस विश्वास के साथ कि अपने हाथों से बनाई गई यह जगह फिर से लोगों को कसरत करते और अपने सपनों का पीछा करते देखेगी।

GS Paper 1: Geography

TOPICS COVERED

11 February 2026

BIG SHOT



Nature's spotlight: An aurora borealis, also known as the 'northern lights', illuminates the sky over houses in Kapisillit, Greenland on January 20. REUTERS

Nature's spotlight: An **aurora borealis**, also known as the 'northern lights', illuminates the sky over houses in Kapisillit, Greenland on January 20.

GS Paper II: Polity,

TOPICS COVERED

11 February 2026

- Human rights body could function as RTI panel, moots SC**
मानवाधिकार निकाय आरटीआई पैनल के रूप में कार्य कर सकता है, सुप्रीम कोर्ट का सुझाव



Human rights body could function as RTI panel, moots SC

GS II: Polity

Krishnadas Rajagopal
NEW DELHI

The Supreme Court on Tuesday mooted whether the Chairpersons of Human Rights Commissions of States with low traffic of Right to Information (RTI) appeals could be given additional responsibility of acting as Chief Information Commissioners (CICs) till there is an increase in workload.

“Suppose it is just 100 appeals pending in a State Information Commission... Any institution you create is a burden on the public exchequer. Taxpayers’ money must be spent on development activities or something... Why not in such States, as an ad-hoc me-

chanism, the power of the Information Commissions be given to the State Human Rights Commissions?” Chief Justice of India Surya Kant, heading a three-judge Bench, asked advocates Prashant Bhushan and Rahul Gupta for the petitioners.

The court was hearing a petition filed by petitioners Anjali Bhardwaj, Commodore Lokesh Batra (retired) and Amrita Johri, seeking timely and transparent appointments to the Information Commissions under the RTI Act.

The Chief Justice said the “ad-hoc mechanism” could continue till the number of RTI appeals increases in “due course of time”.

Human rights body could function as RTI panel, moots SC

मानवाधिकार निकाय आरटीआई पैनल के रूप में कार्य कर सकता है, सुप्रीम कोर्ट का सुझाव

The **Supreme Court** on Tuesday mooted whether the Chairpersons of **Human Rights Commissions** of States with low traffic of **Right to Information (RTI)** appeals could be given additional responsibility of acting as **Chief Information Commissioners (CICs)** till there is an increase in workload.

सुप्रीम कोर्ट ने मंगलवार को यह सुझाव दिया कि जिन राज्यों में सूचना का अधिकार (RTI) अपीलों की संख्या कम है, वहां के मानवाधिकार आयोगों के अध्यक्षों को कार्यभार बढ़ने तक अतिरिक्त रूप से **मुख्य सूचना आयुक्त (CICs)** के रूप में कार्य करने की जिम्मेदारी दी जा सकती है।

“Suppose it is just **100 appeals** pending in a State Information Commission... Any institution you create is a burden on the public exchequer. Taxpayers’ money must be spent on development activities or something... Why not in such States, as an **ad-hoc mechanism**, the power of the Information Commissions be given to the State Human Rights Commissions?” **Chief Justice of India Surya Kant**, heading a three-judge Bench, asked advocates **Prashant Bhushan** and **Rahul Gupta** for the petitioners.

“मान लीजिए किसी राज्य सूचना आयोग में केवल **100 अपीलें** लंबित

हैं... आप जो भी संस्था बनाते हैं, वह सार्वजनिक कोष पर बोझ होती है। करदाताओं का पैसा विकास गतिविधियों या किसी अन्य कार्य पर खर्च होना चाहिए... ऐसे राज्यों में **एड-हॉक तंत्र** के रूप में सूचना आयोगों की शक्तियां राज्य मानवाधिकार आयोगों को क्यों न दे दी जाएं?” तीन-न्यायाधीशों की पीठ की अध्यक्षता कर रहे **भारत के मुख्य न्यायाधीश सूर्यकांत** ने याचिकाकर्ताओं के वकील **प्रशांत भूषण** और **राहुल गुप्ता** से पूछा।

- The court was hearing a petition filed by petitioners **Anjali Bhardwaj, Commodore Lokesh Batra (retired)** and **Amrita Johri**, seeking timely and transparent appointments to the Information Commissions under the RTI Act.

न्यायालय **अंजलि भारद्वाज, कमोडोर लोकेश बत्रा (सेवानिवृत्त)** और **अमृता जोहरी** द्वारा दायर याचिका पर सुनवाई कर रहा था, जिसमें **आरटीआई अधिनियम** के तहत सूचना आयोगों में समयबद्ध और पारदर्शी नियुक्तियों की मांग की गई थी।

- The Chief Justice said the “**ad-hoc mechanism**” could continue till the number of **RTI appeals** increases in “due course of time”.

मुख्य न्यायाधीश ने कहा कि “**एड-हॉक तंत्र**” तब तक जारी रह सकता है जब तक “समय के साथ” **आरटीआई अपीलों** की संख्या में वृद्धि न हो जाए।

GS Paper II: Governance,

TOPICS COVERED

11 February 2026

- Four ASI teams arrive in Tamil Nadu to copy old inscriptions**
पुरानी शिलालेखों की प्रतिलिपि बनाने के लिए तमिलनाडु में चार एसआई टीमों पहुंचीं
- Centre sidesteps query on Agniveers’ career progression**
अग्निवीरों के करियर प्रगति पर प्रश्न से केंद्र ने किनारा किया
- PM CARES not above scrutiny: CPI(M) MP**
पीएम केयर्स जांच से ऊपर नहीं: सीपीआई(एम) सांसद



Four ASI teams arrive in Tamil Nadu to copy old inscriptions

GS II: Governance

CHENNAI

As part of the ongoing digitisation of inscription estampages under the Bharat Shared Repository of Inscriptions (BharatSHRI) project, the Epigraphy Division of the Archaeological Survey of India (ASI) has begun recopying inscriptions whose estampages are damaged.

Currently, the ASI epigraphy wing is involved in digitising over 76,000 estampages of inscriptions in several languages. This includes digitising over 25,000 Tamil estampages in its possession as well.

18 teams overall

K. Munirathnam Reddy, Director (Epigraphy), ASI, said 18 technical teams were involved in recopying inscriptions in several States. In Tamil Nadu, four technical teams have been deployed. They are copying inscriptions at temples in Tiruchi, Ulundurpet, Tiruppur, and Thanjavur.

Some of these inscrip-

tions, belonging to the period of Raja Raja Chola, Rajendra Chola, and the rulers of the Vijayanagar kingdom, were originally copied between 1887 and 1915.

The estampages were either partially damaged or missing in some cases. It was, therefore, decided to launch a drive to recopy these inscriptions so users accessing the digitised estampages online will have greater clarity, Mr. Reddy said.

The ASI has allotted ₹15 lakh for recopying the inscriptions, and the drive is likely to continue for another 15 days, ASI sources said.

Under the BharatSHRI project, a dedicated digital repository of estampages of recorded inscriptions is being created. It will have details of each inscription, including its location, the king and dynasty associated with it, the language and script, the period to which it belongs, the transcript of the inscription, and a description.

- It was, therefore, decided to launch a drive to recopy these inscriptions so users accessing the digitised estampages online will have greater clarity, Mr. Reddy said.
इसलिए इन शिलालेखों की पुनः प्रतिलिपि बनाने के लिए अभियान शुरू करने का निर्णय लिया गया ताकि ऑनलाइन डिजिटाइज्ड एस्टैम्पेज तक पहुंचने वाले उपयोगकर्ताओं को अधिक स्पष्टता मिल सके, श्री रेड्डी ने कहा।
- The ASI has allotted ₹15 lakh for recopying the inscriptions, and the drive is likely to continue for another 15 days, ASI sources said.
एएसआई ने शिलालेखों की पुनः प्रतिलिपि के लिए ₹15 लाख आवंटित किए हैं, और यह अभियान अगले 15 दिनों तक जारी रहने की संभावना है, एएसआई सूत्रों ने कहा।
- Under the BharatSHRI project, a dedicated digital repository of estampages of recorded inscriptions is being created.
BharatSHRI परियोजना के तहत, अभिलेखित शिलालेखों के एस्टैम्पेज का एक समर्पित डिजिटल भंडार तैयार किया जा रहा है।
- It will have details of each inscription, including its location, the king and dynasty associated with it, the language and script, the period to which it belongs, the transcript of the inscription, and a description.

Four ASI teams arrive in Tamil Nadu to copy old inscriptions

पुरानी शिलालेखों की प्रतिलिपि बनाने के लिए तमिलनाडु में चार एएसआई टीमों पहुंचीं

• As part of the ongoing digitisation of inscription estampages under the Bharat Shared Repository of Inscriptions (BharatSHRI) project, the Epigraphy Division of the Archaeological Survey of India (ASI) has begun recopying inscriptions whose estampages are damaged.

Bharat Shared Repository of Inscriptions (BharatSHRI) परियोजना के तहत शिलालेख एस्टैम्पेज के चल रहे डिजिटलीकरण के हिस्से के रूप में, भारतीय पुरातत्व सर्वेक्षण (एएसआई) के एपिग्राफी प्रभाग ने उन शिलालेखों की पुनः प्रतिलिपि बनाना शुरू कर दिया है जिनके एस्टैम्पेज क्षतिग्रस्त हैं।

• Currently, the ASI epigraphy wing is involved in digitising over 76,000 estampages of inscriptions in several languages.

वर्तमान में, एएसआई एपिग्राफी विंग कई भाषाओं में शिलालेखों के 76,000 से अधिक एस्टैम्पेज का डिजिटलीकरण कर रहा है।

• This includes digitising over 25,000 Tamil estampages in its possession as well.

इसमें उसके पास मौजूद 25,000 से अधिक तमिल एस्टैम्पेज का डिजिटलीकरण भी शामिल है।

• Some of these inscriptions, belonging to the period of Raja Raja Chola, Rajendra Chola, and the rulers of the Vijayanagar kingdom, were originally copied between 1887 and 1915.

इनमें से कुछ शिलालेख राजा राजा चोल, राजेंद्र चोल और विजयनगर साम्राज्य के शासकों के काल के हैं, जिनकी मूल प्रतिलिपि 1887 और 1915 के बीच बनाई गई थी।

• The estampages were either partially damaged or missing in some cases.

कुछ मामलों में एस्टैम्पेज आंशिक रूप से क्षतिग्रस्त थे या गायब थे।



इसमें प्रत्येक शिलालेख का विवरण होगा, जिसमें उसका स्थान, उससे संबंधित राजा और वंश, भाषा और लिपि, वह जिस काल से संबंधित है, शिलालेख का प्रतिलेख और विवरण शामिल होगा।

Centre sidesteps query on Agniveers' career progression

GS II: Governance

Vijaita Singh
NEW DELHI

The Union Home Ministry on Tuesday evaded a response to a pointed question from Leader of the Opposition (LoP) Rahul Gandhi in Lok Sabha on why it – and not the Ministry of Defence – has been assigned the responsibility of coordinating the career progression of Agniveers, despite their service in the armed forces.

Mr. Gandhi sought to know whether the Home Ministry had been tasked with coordinating the post-service career progression of Agniveers, and whether the government had assessed possible overlap or coordination challenges between the Home and Defence Ministries in managing the transition of ex-Agniveers.

He also asked for details of the specific activities and programmes that the Home Ministry would oversee for them.

LoP Rahul Gandhi had questioned the MHA's role, instead of the Defence Ministry, in the scheme

In a written reply, Minister of State for Home Nityanand Rai said, "The distribution of subjects among Ministries/ Departments has been specified in the Government of India (Allocation of Business) Rules, 1961. As per the amendment issued by the Cabinet Secretariat notification No.S.O.2701(E) dated 16.06.2025, the subject of 'coordinating activities for further progress of Ex-Agniveers' is allocated to the MHA."

The reply added, "A dedicated ex-Agniveer wing and an ex-Agniveer cell have been created within the MHA for smooth coordination, monitoring, and formulation of rehabilitation policies for ex-Agniveers."

Nityanand Rai said, "The distribution of subjects among Ministries/ Departments has been specified in the **Government of India (Allocation of Business) Rules, 1961**. As per the amendment issued by the **Cabinet Secretariat notification No.S.O.2701(E) dated 16.06.2025**, the subject of 'coordinating activities for further progress of Ex-Agniveers' is allocated to the MHA."

एक लिखित उत्तर में गृह राज्य मंत्री नित्यानंद राय ने कहा, "मंत्रालयों/विभागों के बीच विषयों का वितरण भारत सरकार (कार्य आवंटन) नियम, 1961 में निर्दिष्ट किया गया है। कैबिनेट सचिवालय अधिसूचना सं. S.O.2701(E) दिनांक 16.06.2025 द्वारा जारी संशोधन के अनुसार, 'पूर्व-अग्निवीरों की आगे की प्रगति के लिए गतिविधियों के समन्वय' का विषय गृह मंत्रालय (MHA) को आवंटित किया गया है।"

- The reply added, "A dedicated **ex-Agniveer wing** and an **ex-Agniveer cell** have been created within the **MHA** for smooth coordination, monitoring, and formulation of rehabilitation policies for **ex-Agniveers**."

उत्तर में आगे कहा गया, "गृह मंत्रालय (MHA) के भीतर सुचारु समन्वय, निगरानी और पूर्व-अग्निवीरों के लिए पुनर्वास नीतियों के निर्माण हेतु एक समर्पित पूर्व-अग्निवीर विंग और एक पूर्व-अग्निवीर सेल बनाया गया है।"

Centre sidesteps query on Agniveers' career progression

अग्निवीरों के करियर प्रगति पर प्रश्न से केंद्र ने किनारा किया

- The **Union Home Ministry** on Tuesday evaded a response to a pointed question from **Leader of the Opposition (LoP) Rahul Gandhi** in Lok Sabha on why it — and not the **Ministry of Defence** — has been assigned the **responsibility of coordinating the career progression of Agniveers**, despite their service in the **armed forces**.

केंद्रीय गृह मंत्रालय ने मंगलवार को लोकसभा में विपक्ष के नेता (LoP) राहुल गांधी के एक तीखे प्रश्न का उत्तर देने से परहेज किया कि क्यों रक्षा मंत्रालय के बजाय उसे अग्निवीरों के करियर प्रगति के समन्वय की जिम्मेदारी सौंपी गई है, जबकि वे सशस्त्र बलों में सेवा दे चुके हैं।

- Mr. Gandhi sought to know whether the **Home Ministry** had been tasked with coordinating the postservice career progression of **Agniveers**, and whether the government had assessed possible overlap or coordination challenges between the **Home** and **Defence Ministries** in managing the transition of **ex-Agniveers**.

श्री गांधी ने जानना चाहा कि क्या गृह मंत्रालय को अग्निवीरों की सेवा के बाद की करियर प्रगति के समन्वय का कार्य सौंपा गया है, और क्या सरकार ने पूर्व-अग्निवीरों के संक्रमण के प्रबंधन में गृह और रक्षा मंत्रालयों के बीच संभावित ओवरलैप या समन्वय चुनौतियों का आकलन किया है।

- He also asked for details of the specific activities and programmes that the **Home Ministry** would oversee for them.

उन्होंने यह भी पूछा कि उनके लिए गृह मंत्रालय किन विशिष्ट गतिविधियों और कार्यक्रमों की देखरेख करेगा।

- In a written reply, **Minister of State for Home**



PM CARES not above scrutiny: CPI(M) MP

GS II: Governance: GS
The Hindu Bureau
NEW DELHI

Contesting the directions from Prime Minister's Office to the Lok Sabha Secretariat that no questions on PM CARES Fund should be admitted, since the fund is entirely made up of voluntary public contributions, CPI(M) MP John Brittas has said such a stance is not legally sustainable.

He urged the Rajya Sabha Chairman C.P. Radhakrishnan to "summarily" reject such directions.

PM CARES not above scrutiny: CPI(M) MP पीएम केयर्स जांच से ऊपर नहीं: सीपीआई(एम) सांसद

Contesting the directions from the Prime Minister's Office to the Lok Sabha Secretariat that no questions on PM CARES Fund should be admitted, since the fund is entirely made up of voluntary public contributions, CPI(M) MP John Brittas has said such a stance is not legally sustainable.

प्रधानमंत्री कार्यालय द्वारा लोकसभा सचिवालय को दिए गए निर्देशों का विरोध करते हुए कि पीएम केयर्स फंड पर कोई प्रश्न स्वीकार न किए जाएं, क्योंकि यह फंड पूरी तरह स्वैच्छिक सार्वजनिक योगदान से बना है, सीपीआई(एम) सांसद जॉन ब्रिट्टास ने कहा कि ऐसी स्थिति कानूनी रूप से टिकाऊ नहीं है।

He urged the Rajya Sabha Chairman C.P. Radhakrishnan to "summarily" reject such directions.

उन्होंने राज्यसभा के सभापति सी.पी. राधाकृष्णन से ऐसे निर्देशों को "संक्षेप में" खारिज करने का आग्रह किया।

GS Paper II: International Relations

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GS II: IR

Takaichi's triumph

Japan should go beyond conservatism and adopt an inclusive agenda

Sanae Takaichi's landslide victory in Japan's February 8 snap election marks one of the most striking political comebacks in its recent history. The Liberal Democratic Party (LDP) won 316 of 465 seats in Parliament's lower house, delivering its strongest post-war performance. When Ms. Takaichi became Japan's first woman Prime Minister in October 2025, the LDP, which has led Japan for all but four years since 1955, was reeling from back-to-back electoral setbacks and internal scandals. The party had just lost its majority in the House of Councillors, the upper house, raising doubts about its ability to govern. Her immediate challenge was to quickly reverse the LDP's declining fortunes and secure a clear mandate for herself. A conservative nationalist closely aligned with the late former Prime Minister Shinzo Abe, she advanced a distinctly Trumpian agenda with Japanese characteristics. She pledged to crack down on immigration and stand up to China's military and economic influence in the region. Her government proposed to make it tougher for foreigners to become citizens and also encourage prospective residents to learn Japanese. She withdrew an unpopular fuel tax and promised more tax cuts. Ms. Takaichi stated that Japan could militarily intervene in the event of a Chinese attack on Taiwan, provoking Beijing to impose restrictions on Japanese seafood imports and limits on critical minerals exports to Japan.

While her victory as the first woman Prime Minister is historic, it is shaped by a paradox: the conservative ideology that defines her politics. She has made repeated visits to the controversial Yasukuni shrine. She opposes same-sex marriage, and many supporters have urged her to amend the Constitution to remove the pacifist clauses. Although Ms. Takaichi enjoys warm ties with U.S. President Donald Trump, she also faces pressure from Washington to move towards a more militarised security posture. But if Ms. Takaichi uses the huge mandate to remilitarise Japan and adopt a more muscular foreign policy, she risks placing herself on the wrong side of history. Post-war peace helped Japan rebuild an economy devastated by conflict and dramatically improve living standards. Rather than issuing provocative statements that risk imperilling Japan's economic ties with its largest trading partner, she should return to the country's long-standing position of studied ambiguity over Taiwan and prioritise regional stability. Her focus should be on revitalising the economy and addressing social challenges, including an ageing population, stagnant wages and persistent gender inequality. The supermajority that she now commands offers her an opportunity to move beyond rigid conservatism and pursue a more pragmatic and inclusive agenda rooted in pacifism.

जापानी भाषा सीखने को प्रोत्साहित किया।

- She withdrew an unpopular **fuel tax** and promised **more tax cuts**. उन्होंने अलोकप्रिय ईंधन कर हटाया और अधिक कर कटौती का वादा किया।

Takaichi's triumph ताकाइची की विजय

- Japan should go beyond **conservatism** and adopt an **inclusive agenda**
जापान को रूढ़िवाद से आगे बढ़कर एक समावेशी एजेंडा अपनाना चाहिए

Sanae Takaichi's landslide victory in Japan's February 8 snap election

जापान के 8 फरवरी सैप चुनाव में सानाए ताकाइची की भारी जीत

- Sanae Takaichi's **landslide victory** in Japan's **February 8 snap election** marks one of the most striking **political comebacks** in recent history.

जापान के 8 फरवरी सैप चुनाव में सानाए ताकाइची की भारी जीत हाल के इतिहास की सबसे बड़ी राजनीतिक वापसी में से एक है।

- The **Liberal Democratic Party (LDP)** won **316 of 465 seats** in Parliament's lower house, delivering its **strongest post-war performance**.

लिबरल डेमोक्रेटिक पार्टी (LDP) ने संसद के निचले सदन में 465 में से 316 सीटें जीतकर अपना सबसे मजबूत युद्धोत्तर प्रदर्शन दिया।

- When Ms. Takaichi became Japan's **first woman Prime Minister in October 2025**, the LDP was facing **electoral setbacks** and **internal scandals**.

जब सानाए ताकाइची अक्टूबर 2025 में जापान की पहली महिला प्रधानमंत्री बनीं, तब LDP चुनावी हार और आंतरिक घोटालों से जूझ रही थी।

- The party had just lost its **majority in the House of Councillors**, raising doubts about its **ability to govern**.

पार्टी ने हाउस ऑफ काउंसिलर्स में अपना बहुमत खो दिया, जिससे उसकी शासन क्षमता पर सवाल उठे।

- Her immediate challenge was to reverse the **declining fortunes** of the LDP and secure a **clear mandate**.

उन्की तत्काल चुनौती LDP की गिरती स्थिति को पलटना और स्पष्ट जनादेश हासिल करना था।

- A **conservative nationalist** aligned with **Shinzo Abe**, she advanced a **Trumpian agenda** with Japanese characteristics.

शिंजो आबे से जुड़ी रूढ़िवादी राष्ट्रवादी नेता के रूप में उन्होंने जापानी विशेषताओं वाला ट्रम्प शैली एजेंडा आगे बढ़ाया।

- She pledged to **crack down on immigration** and counter **China's military and economic influence**.

उन्होंने आप्रवासन पर सख्ती और चीन के सैन्य व आर्थिक प्रभाव का मुकाबला करने का वादा किया।

- Her government proposed stricter rules for **citizenship for foreigners** and encouraged learning **Japanese language**.

सरकार ने विदेशियों के लिए नागरिकता नियम कड़े करने और



- Ms. Takaichi said Japan could **militarily intervene** if **China attacks Taiwan**, prompting **Beijing to restrict Japanese seafood imports and critical minerals exports**.
ताकाइची ने कहा कि यदि चीन ताइवान पर हमला करता है तो जापान सैन्य हस्तक्षेप कर सकता है, जिसके बाद बीजिंग ने जापानी समुद्री खाद्य आयात और महत्वपूर्ण खनिज निर्यात पर प्रतिबंध लगाए।
- Her victory as the **first woman Prime Minister** is historic but shaped by **conservative ideology**.
उनकी पहली महिला प्रधानमंत्री के रूप में जीत ऐतिहासिक है, लेकिन रूढ़िवादी विचारधारा से प्रभावित है।
- She made repeated visits to the **Yasukuni shrine**.
उन्होंने कई बार यासुकुनी श्राइन का दौरा किया।
- She opposes **same-sex marriage** and supporters urge **constitutional amendment to remove pacifist clauses**.
वह समलैंगिक विवाह का विरोध करती हैं और समर्थक संविधान संशोधन कर शांतिवादी धाराएँ हटाने की मांग करते हैं।
- Despite warm ties with **U.S. President Donald Trump**, she faces pressure for a more **militarised security posture**.
अमेरिकी राष्ट्रपति डोनाल्ड ट्रम्प से अच्छे संबंधों के बावजूद उन पर अधिक सैन्य सुरक्षा नीति अपनाने का दबाव है।
- If she uses her **huge mandate to remilitarise Japan**, she risks being on the **wrong side of history**.
यदि वह अपने बड़े जनादेश का उपयोग जापान को फिर सैन्यीकृत करने में करती हैं, तो वह इतिहास के गलत पक्ष में हो सकती हैं।
- **Post-war peace** helped Japan rebuild its **economy** and improve **living standards**.
युद्धोत्तर शांति ने जापान को अपनी अर्थव्यवस्था पुनर्निर्माण और जीवन स्तर सुधारने में मदद की।
- She should avoid **provocative statements** that may harm ties with Japan's **largest trading partner** and maintain **strategic ambiguity over Taiwan**.
उन्हें ऐसे उत्तेजक बयान नहीं देने चाहिए जो जापान के सबसे बड़े व्यापारिक साझेदार से संबंध खराब करें और ताइवान पर रणनीतिक अस्पष्टता बनाए रखें।
- Her priority should be **economic revival** and addressing **social challenges** like **ageing population, stagnant wages, and gender inequality**.
उनकी प्राथमिकता आर्थिक पुनरुद्धार और सामाजिक चुनौतियों जैसे बढ़ती उम्र की आबादी, ठहरी मजदूरी और लैंगिक असमानता से निपटना होना चाहिए।
- The **supermajority** she commands gives an opportunity to move beyond **rigid conservatism** and pursue a **pragmatic and inclusive agenda rooted in pacifism**.
उनके पास मौजूद सुपर बहुमत उन्हें कठोर रूढ़िवाद से आगे बढ़कर व्यावहारिक और समावेशी शांतिवादी एजेंडा अपनाने का अवसर देता है।



Why Canada can't leverage oil like China did rare earths

In its escalating tensions with the U.S., Canada will find it difficult to mimic China, whose dominance over rare earths gave it leverage during the tariff war

GS II IR

DATA POINT

Nitika Francis

In Monday, U.S. President Donald Trump threatened to stop the opening of the new bridge, costing \$4.6 billion and connecting Windsor in Canada and Detroit in the U.S., until his country was "compensated" by Canada "for everything we have given them". This is the latest in a series of threats that Mr. Trump has issued against Canada. In January, Canadian Prime Minister Mark Carney negotiated a deal with China to lower tariffs on Chinese electric vehicles in return for lower import taxes on Canadian farm products. In response, Mr. Trump threatened a 100% tariff on all Canadian imports.

In fact, Mr. Trump began his second term by making claims on Canada as the 51st State of the U.S. So, the current situation is not a sudden shift in the relationship, but a severe escalation of a strategy that began last year.

It was in this fraught climate that Mr. Carney took a stand against Mr. Trump in Davos. "The rules-based order is fading. That the strong can do what they can, and the weak must suffer what they must," he said. "The middle powers must act together because if we're not at the table, we're on the menu." The question is, can Mr. Carney walk the talk? Does he have strong bargaining chips like China had when the U.S. tried a similar tactic against the country?

When the U.S. waged a tariff war on China, the latter leveraged its dominance over 'rare earths', a critical component in clean energy technologies. It introduced measures that required the Chinese government's approval to export items that contained rare earths. In fact, the U.S. is the second-largest importer of Chinese rare earths, with about 22% of China's exports going to the U.S. in 2024. More importantly, about 35% of

U.S.'s rare earth imports came from China (Chart 1A and 1B). Given this high dependency, China used the commodity as a bargaining chip.

Does Canada have a similar bargaining chip? In theory, it does. It is the U.S.'s largest foreign supplier of energy products such as crude oil. Data show that about 60% of the U.S.'s crude oil imports came from Canada in 2024. However, how practical is it for Canada to use this "leverage" to bargain?

Canada has been pumping almost all of its crude oil to the U.S., with 95% of all crude exports in 2024 going to its neighbour (Chart 2A and 2B). So, even if it plans to reduce oil shipments to the U.S., it needs to negotiate fresh deals, like the one Ottawa is trying to strike with New Delhi. Notably, in parallel, Trump has claimed that India will be purchasing oil from Venezuela instead of Iran.

But even if Canada manages to secure deals to diversify away from the U.S., finding newer markets is not the only hindrance. The way Canada's oil pipeline is built demands a forced collaboration with the U.S. About 95% of the oil is produced in Canada's western provinces (Chart 3A). Meanwhile, a large chunk of its population resides in its eastern provinces (Chart 3B). In order for the oil to be transported from the west to the east, it must be transported through pipelines which pass through the U.S., because of geographical hurdles. So Canada's oil network is intertwined with the U.S.'s energy infrastructure.

The other bargaining chip could be to threaten stopping exports to the U.S.'s northern States. The States that share borders with Canada are especially heavily dependent on Canada for imports; 90% of Montana's imports and 70% of Maine's in 2024 were from the northern neighbour (Map 4).

However, the volume of imports by these States is too small compared to overall U.S. imports to have a significant impact.

An American spat

The data were sourced from the United Nations Commodity Trade Statistics Database, the Canada Energy Regulator, the International Trade Administration and Statistics Canada

CHART 1A & 1B: China's share in the U.S.'s rare earth imports and the U.S.'s share in China's rare earth exports

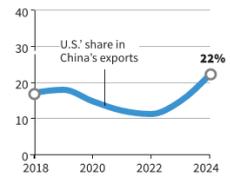
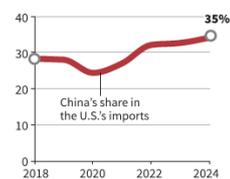


CHART 2A & B: The U.S.'s share in Canada's crude oil exports and Canada's share in the U.S.'s oil imports

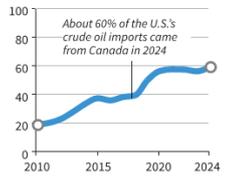
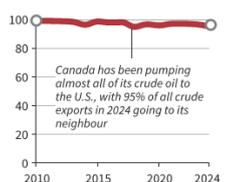
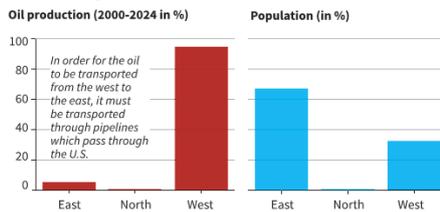
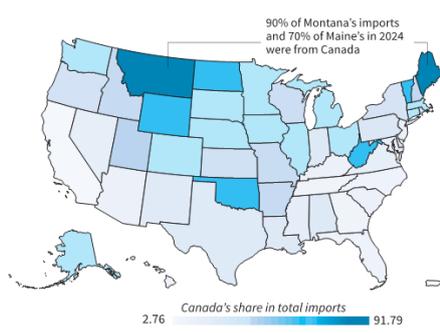


CHART 3A & B: Canada's region-wise share of oil production between 2000 and 2024 and region-wise share of population in 2025



MAP 4: Canada's share in each of the U.S.'s States' imports in 2024. (in %)



Why Canada can't leverage oil like China did rare earths

क्यों कनाडा तेल का उपयोग वैसे नहीं कर सकता जैसे चीन ने दुर्लभ मृदा तत्वों का किया

- In its escalating tensions with the U.S., Canada will find it difficult to mimic China, whose dominance over rare earths gave it leverage during the tariff war
- अमेरिका के साथ बढ़ते तनाव में कनाडा के लिए चीन की नकल करना कठिन होगा, क्योंकि दुर्लभ मृदा तत्वों पर उसकी प्रधानता ने टैरिफ युद्ध के दौरान उसे रणनीतिक बढ़त दी

U.S.–Canada tensions and bargaining power

अमेरिका–कनाडा तनाव और सौदेबाजी शक्ति

- On Monday, U.S. President Donald Trump threatened to stop the opening of the \$4.6 billion bridge linking Windsor (Canada) and Detroit (U.S.) until Canada "compensated" the U.S.
- This is the latest in a series of threats against Canada.
- In January, Canadian PM Mark Carney negotiated with China to lower tariffs on Chinese EVs in exchange for lower taxes on Canadian farm imports.



जनवरी में कनाडा के प्रधानमंत्री मार्क कार्नी ने चीन से चीनी ईवी पर टैरिफ कम करने और बदले में कनाडाई कृषि उत्पादों पर आयात कर घटाने का समझौता किया।

- In response, Trump threatened a **100% tariff on Canadian imports**. इसके जवाब में ट्रम्प ने कनाडाई आयात पर **100% टैरिफ** की धमकी दी।
- Trump also claimed Canada should become the **51st State of the U.S.** at the start of his **second term**.
ट्रम्प ने अपने दूसरे कार्यकाल की शुरुआत में कनाडा को अमेरिका का 51वां राज्य बनाने की बात कही।
- This is not sudden but a **severe escalation** of an ongoing strategy. यह अचानक नहीं बल्कि पहले से चल रही रणनीति की गंभीर बढ़ोतरी है।

Davos stance and middle-power dilemma दावोस रुख और मध्य-शक्ति की दुविधा

- At Davos, Carney warned the **rules-based order is fading**. दावोस में कार्नी ने कहा कि नियम-आधारित व्यवस्था कमजोर हो रही है।
- He said strong nations act freely while weak nations **suffer consequences**. उन्होंने कहा शक्तिशाली देश स्वतंत्र रूप से कार्य करते हैं और कमजोर देश परिणाम भुगतते हैं।
- He urged **middle powers to act together** or risk being sidelined. उन्होंने मध्य शक्तियों को मिलकर काम करने का आह्वान किया।
- The question remains: does Canada have **bargaining chips like China**?
प्रश्न है: क्या कनाडा के पास चीन जैसी सौदेबाज़ी शक्ति है?

China's rare earth leverage चीन की दुर्लभ धातु रणनीति

- During the **U.S.–China tariff war**, China used its dominance over **rare earths**. अमेरिका–चीन टैरिफ युद्ध में चीन ने दुर्लभ धातुओं पर अपनी पकड़ का उपयोग किया।
- It required government approval for exporting products containing **rare earth elements**. चीन ने दुर्लभ धातु वाले उत्पादों के निर्यात पर सरकारी अनुमति अनिवार्य की।
- The **U.S. imported 22% of China's rare earth exports in 2024**.
2024 में अमेरिका ने चीन के दुर्लभ धातु निर्यात का 22% आयात किया।
- About **35% of U.S. rare earth imports came from China**.
अमेरिका के कुल दुर्लभ धातु आयात का 35% चीन से आया।
- China used this **dependency as leverage**.
चीन ने इस निर्भरता को सौदेबाज़ी के रूप में उपयोग किया।

Canada's energy leverage कनाडा की ऊर्जा सौदेबाज़ी शक्ति

- **Canada is the largest foreign supplier of crude oil to the U.S.**
कनाडा अमेरिका को कच्चे तेल का सबसे बड़ा विदेशी आपूर्तिकर्ता है।
- About **60% of U.S. crude oil imports came from Canada in 2024**.
2024 में अमेरिका के कच्चे तेल आयात का 60% कनाडा से आया।
- However, **95% of Canada's crude exports go to the U.S.**
लेकिन कनाडा के 95% कच्चे तेल निर्यात अमेरिका को जाते हैं।
- So reducing exports would require **new trade deals**, such as with India.
इसलिए निर्यात घटाने के लिए भारत जैसे नए व्यापार समझौते करने होंगे।
- Trump claimed **India may buy oil from Venezuela instead of Iran**.
ट्रम्प ने कहा भारत ईरान के बजाय वेनेजुएला से तेल खरीद सकता है।

Pipeline and geography constraint पाइपलाइन और भौगोलिक बाधा

- About **95% of Canadian oil is produced in western provinces**.
कनाडा का 95% तेल पश्चिमी प्रांतों में उत्पादित होता है।



- A large population lives in **eastern provinces**.
बड़ी आबादी **पूर्वी प्रांतों में रहती है**।
- Oil transport from west to east requires pipelines passing through the **U.S.**.
पश्चिम से पूर्व तेल ले जाने के लिए पाइपलाइन **अमेरिका से होकर गुजरती हैं**।
- Thus Canada's oil network is **intertwined with U.S. energy infrastructure**.
इस प्रकार कनाडा का तेल नेटवर्क **अमेरिकी ऊर्जा ढांचे से जुड़ा हुआ है**।
- **Limited impact of border-state leverage**
सीमावर्ती राज्यों पर सीमित प्रभाव
- Another option is restricting exports to **U.S. northern border States**.
दूसरा विकल्प **अमेरिका के उत्तरी सीमावर्ती राज्यों को निर्यात रोकना है**।
- These States depend heavily on Canada — **90% of Montana's and 70% of Maine's imports in 2024** came from Canada.
ये राज्य कनाडा पर निर्भर हैं — **2024 में मोंटाना का 90% और मेन का 70% आयात कनाडा से आया**।
- However, their import volume is **too small to significantly impact overall U.S. trade**.
लेकिन उनका आयात स्तर **कुल अमेरिकी व्यापार पर बड़ा प्रभाव डालने के लिए बहुत छोटा है**।

ABIDJAN

Junta-led Burkina Faso dissolves all political parties over 'divisions'



GS II: IR
Junta-led Burkina Faso's parliament has dissolved all political parties, whose activities have been suspended for over three years. "The government believes that the proliferation of political parties has led to abuses, fuelled divisions among citizens and weakened the social fabric," the presidency said last month. AFP

Junta-led Burkina Faso dissolves all political parties over 'divisions'

जुंटा-नेतृत्व वाले बुर्किना फासो ने 'विभाजनों' के कारण सभी राजनीतिक दलों को भंग किया

- **Junta-led Burkina Faso's parliament** has dissolved all **political parties**, whose activities have been suspended for over **three years**.
जुंटा-नेतृत्व वाले बुर्किना फासो की संसद ने सभी राजनीतिक दलों को भंग कर दिया है, जिनकी गतिविधियां पिछले **तीन वर्षों** से अधिक समय से निलंबित थीं।
- "The government believes that the proliferation of political parties has led to abuses, fuelled divisions among citizens and weakened the social fabric," the **presidency** said last month.
"सरकार का मानना है कि राजनीतिक दलों की बढ़ती से दुरुपयोग हुआ है, नागरिकों के बीच विभाजन बढ़ा है और सामाजिक ताने-बाने को कमजोर किया है," **राष्ट्रपति कार्यालय** ने पिछले महीने कहा।

GS Paper III: Economy,

TOPICS COVERED

11 February 2026

1. **Congress likely to focus on U.S. trade deal during LS discussion on Budget**
बजट पर लोकसभा चर्चा के दौरान यू.एस. व्यापार समझौते पर कांग्रेस का फोकस संभावित
2. **A reckoning for India's aviation sector**
भारत के विमानन क्षेत्र के लिए एक निर्णायक क्षण
3. **Budget ups limit but NRIs hold 0.6% of NSE firms**
बजट ने सीमा बढ़ाई लेकिन एनआरआई के पास एनएसई कंपनियों के 0.6% शेयर



Congress likely to focus on U.S. trade deal during LS discussion on Budget

Rahul to speak in the House today; Opposition agrees to allow normal functioning to raise crucial issues; fine print of deal has exposed how PM mortgaged national interests, says Congress chief

GS III: Economy

The Hindu Bureau
NEW DELHI

The Congress is likely to step up pressure against the Narendra Modi government over the India-U.S. trade deal, with the Leader of the Opposition in the Lok Sabha, Rahul Gandhi, likely to focus on it when he takes part in the discussion on the Union Budget on Wednesday.

The Lok Sabha, which has been paralysed since February 2, started functioning on Tuesday, after the Opposition submitted a notice to move a resolution against Speaker Om Birla for conducting the proceedings in a "partisan" manner.

Before moving the petition, senior Opposition leaders, including Akhilesh Yadav of the Samajwadi Party; K.C. Venugopal and Gaurav Gogoi of the Congress; Abhishek Banerjee of the Trinamool Congress; and T.R. Baalu of the Dravida Munnetra Kazhagam (DMK) met Parliamentary Affairs Minister Kiren Rijiju to end the stalemate, but were unsuccessful.

The Opposition agreed to allow normal functioning since it wants to raise crucial issues, including the trade deal, during the Budget discussion.

Earlier in the day, Mr. Gandhi pointed to a poster Opposition MPs were carrying near the Makar Dwar of Parliament during their protest, which read "Narendar Surrender". "This



Ongoing issue: Congress leader Rahul Gandhi pointing at the poster of MPs who were suspended from the Lok Sabha during their protest on Parliament premises in New Delhi on Tuesday. PTI

has happened" in the Indo-U.S. trade deal, he said.

In a statement posted on his X handle, Congress president Mallikarjun Kharge claimed the trade agreement sacrificed India's strategic national interests and exposed the betrayal of the Modi government.

"Fine print of the Indo-U.S. trade deal has exposed how PM Modi mortgaged India's national interests," Mr. Kharge alleged, terming it "trapped surrender".

'Trap deal'

The truth of the "trap deal" was now slowly coming out, he said, listing four key objections to the pact.

Referring to the issue of Russian oil, he said the

White House fact sheet now listed "India's commitment to stop purchasing Russian Federation oil" as a condition for the removal of an additional 25% tariff, even though the joint statement had not mentioned it.

Why had the government agreed to such "erosion of sovereignty", Mr. Kharge asked, adding that the Congress had already flagged the U.S. executive order on monitoring India's oil imports.

The Congress president alleged that the government had "backstabbed" farmers by opening agriculture to foreign goods. Pulses were added to the February 9 fact sheet although absent in the Febru-

ary 6 joint statement, he said. References to animal feed utility for red sorghum had disappeared, he said, while imports of dried distillers' grains (DDGs) and sorghum could hurt dairy farmers and cattle.

"Two crore dairy farmers will suffer the consequences, but the RSS (Rashtriya Swayamsevak Sangh)-Sangh Parivar-BJP (Bharatiya Janata Party), who carry out lynchings in the name of the cow, are hell-bent on destroying our country's cattle population," Mr. Kharge alleged.

The deal would hurt the apparel sector, especially because of American concessions to Bangladesh, the Congress said.

Congress likely to focus on U.S. trade deal during LS discussion on Budget
बजट पर लोकसभा चर्चा के दौरान यू.एस. व्यापार समझौते पर कांग्रेस का फोकस संभावित

Rahul to speak in the House today; Opposition agrees to allow normal functioning to raise crucial issues; fine print of deal has exposed how PM mortgaged national interests, says Congress chief

राहुल आज सदन में बोलेंगे; महत्वपूर्ण मुद्दे उठाने के लिए विपक्ष सामान्य कार्यवाही की अनुमति देने पर



सहमत; समझौते की बारीक शर्तों ने दिखाया कि पीएम ने राष्ट्रीय हितों को गिरवी रखा, कांग्रेस अध्यक्ष का आरोप

- The **Congress** is likely to step up pressure against the **Narendra Modi government** over the **India-U.S. trade deal**, with the **Leader of the Opposition** in the **Lok Sabha**, **Rahul Gandhi**, likely to focus on it when he takes part in the discussion on the **Union Budget** on Wednesday.
कांग्रेस के नरेंद्र मोदी सरकार पर भारत-अमेरिका व्यापार समझौते को लेकर दबाव बढ़ाने की संभावना है, और लोकसभा में विपक्ष के नेता राहुल गांधी बुधवार को केंद्रीय बजट पर चर्चा के दौरान इस मुद्दे पर ध्यान केंद्रित कर सकते हैं।
- The **Lok Sabha**, which has been paralysed since **February 2**, started functioning on Tuesday, after the Opposition submitted a notice to move a resolution against **Speaker Om Birla** for conducting the proceedings in a “partisan” manner.
लोकसभा, जो 2 फरवरी से ठप थी, मंगलवार को कामकाज शुरू हुआ, जब विपक्ष ने कार्यवाही को “पक्षपातपूर्ण” ढंग से संचालित करने के आरोप में **स्पीकर ओम बिरला** के खिलाफ प्रस्ताव लाने का नोटिस दिया।
- Before moving the petition, senior Opposition leaders, including **Akhilesh Yadav** of the **Samajwadi Party**; **K.C. Venugopal** and **Gaurav Gogoi** of the **Congress**; **Abhishek Banerjee** of the **Trinamool Congress**; and **T.R. Baalu** of the **Dravida Munnetra Kazhagam (DMK)** met **Parliamentary Affairs Minister Kiren Rijiju** to end the stalemate, but were unsuccessful.
याचिका लाने से पहले, वरिष्ठ विपक्षी नेता जिनमें समाजवादी पार्टी के अखिलेश यादव; कांग्रेस के के.सी. वेणुगोपाल और गौरव गोगोई; तृणमूल कांग्रेस के अभिषेक बनर्जी; और द्रविड़ मुनेत्र कषगम (DMK) के टी.आर. बालू शामिल थे, ने गतिरोध समाप्त करने के लिए संसदीय कार्य मंत्री किरिन रिजिजू से मुलाकात की, लेकिन सफल नहीं हुए।
- The Opposition agreed to allow normal functioning since it wants to raise crucial issues, including the **trade deal**, during the Budget discussion.
विपक्ष ने सामान्य कार्यवाही की अनुमति देने पर सहमति जताई क्योंकि वह बजट चर्चा के दौरान **व्यापार समझौते** सहित महत्वपूर्ण मुद्दे उठाना चाहता है।
- Earlier in the day, Mr. Gandhi pointed to a poster Opposition MPs were carrying near the **Makar Dwar** of Parliament during their protest, which read “**Narender Surrender**”. “This has happened” in the **Indo-U.S. trade deal**, he said.
दिन में पहले, श्री गांधी ने संसद के मकर द्वार के पास विरोध प्रदर्शन के दौरान विपक्षी सांसदों द्वारा ले जाए जा रहे एक पोस्टर की ओर इशारा किया, जिस पर “**Narender Surrender**” लिखा था। उन्होंने कहा कि **भारत-अमेरिका व्यापार समझौते** में “ऐसा हुआ है”।
- In a statement posted on his **X handle**, Congress president **Mallikarjun Kharge** claimed the trade agreement sacrificed India’s strategic national interests and exposed the betrayal of the **Modi government**.
अपने **X हैंडल** पर जारी बयान में कांग्रेस अध्यक्ष **मल्लिकार्जुन खड़गे** ने दावा किया कि व्यापार समझौते ने भारत के रणनीतिक राष्ट्रीय हितों की बलि दी और **मोदी सरकार** के विश्वासघात को उजागर किया।
- “Fine print of the **Indo-U.S. trade deal** has exposed how PM Modi mortgaged India’s national interests,” Mr. Kharge alleged, terming it “**trapped surrender**”.
श्री खड़गे ने आरोप लगाया, “**भारत-अमेरिका व्यापार समझौते** की बारीक शर्तों ने उजागर कर दिया है कि पीएम मोदी ने भारत के राष्ट्रीय हितों को कैसे गिरवी रखा,” और इसे “**फंसा हुआ आत्मसमर्पण**” बताया।

‘Trap deal’ ‘ट्रैप डील’

- The truth of the “**trap deal**” was now slowly coming out, he said, listing four key objections to the pact.
उन्होंने कहा कि “**ट्रैप डील**” की सच्चाई अब धीरे-धीरे सामने आ रही है, और समझौते पर चार प्रमुख आपत्तियां गिनाईं।
- Referring to the issue of **Russian oil**, he said the **White House fact sheet** now listed “India’s commitment to stop purchasing **Russian Federation oil**” as a condition for the removal of an additional **25% tariff**, even though the joint statement had not mentioned it.



रूसी तेल के मुद्दे का उल्लेख करते हुए उन्होंने कहा कि **व्हाइट हाउस फैक्ट शीट** में अब “रूसी संघ के तेल की खरीद बंद करने के भारत के वचन” को अतिरिक्त **25% टैरिफ** हटाने की शर्त के रूप में सूचीबद्ध किया गया है, जबकि संयुक्त बयान में इसका उल्लेख नहीं था।

- Why had the government agreed to such “erosion of sovereignty”, Mr. Kharge asked, adding that the Congress had already flagged the U.S. executive order on monitoring India’s oil imports.
श्री खड़गे ने पूछा कि सरकार ने ऐसी “संप्रभुता के क्षरण” पर सहमति क्यों दी, और जोड़ा कि कांग्रेस पहले ही भारत के तेल आयात की निगरानी पर अमेरिकी कार्यकारी आदेश को चिह्नित कर चुकी है।
- The Congress president alleged that the government had “back-stabbed” farmers by opening agriculture to foreign goods.
कांग्रेस अध्यक्ष ने आरोप लगाया कि सरकार ने कृषि को विदेशी वस्तुओं के लिए खोलकर किसानों की “पीठ में छुरा घोंपा” है।
- **Pulses** were added to the **February 9 fact sheet** although absent in the **February 6 joint statement**, he said.
उन्होंने कहा कि **दालें 9 फरवरी की फैक्ट शीट** में जोड़ी गईं, जबकि वे **6 फरवरी के संयुक्त बयान** में अनुपस्थित थीं।
- References to animal feed utility for **red sorghum** had disappeared, he said, while imports of **dried distillers’ grains (DDGs)** and **sorghum** could hurt dairy farmers and cattle.
उन्होंने कहा कि **लाल ज्वार** के पशु चारे के उपयोग के संदर्भ गायब हो गए हैं, जबकि **ड्राइड डिस्टिलर्स ग्रेन्स (DDGs)** और **ज्वार** के आयात से डेयरी किसानों और पशुओं को नुकसान हो सकता है।
- “**Two crore dairy farmers** will suffer the consequences, but the **RSS (Rashtriya Swayamsevak Sangh)-Sangh Parivar-BJP (Bharatiya Janata Party)**, who carry out lynchings in the name of the cow, are hell-bent on destroying our country’s cattle population,” Mr. Kharge alleged.
श्री खड़गे ने आरोप लगाया, “**दो करोड़ डेयरी किसान** परिणाम भुगतेंगे, लेकिन **आरएसएस (राष्ट्रीय स्वयंसेवक संघ)-संघ परिवार-बीजेपी (भारतीय जनता पार्टी)**, जो गाय के नाम पर मॉब लिंग कर रहे हैं, हमारे देश की पशुधन आबादी को नष्ट करने पर आमादा हैं।”
- The deal would hurt the **apparel sector**, especially because of American concessions to **Bangladesh**, the Congress said.
कांग्रेस ने कहा कि यह समझौता **परिधान क्षेत्र** को नुकसान पहुंचाएगा, विशेषकर **बांग्लादेश** को दी गई अमेरिकी रियायतों के कारण।

PATRIOTIC IAS



A reckoning for India's aviation sector

India's aviation sector faces urgent challenges as operational failures and safety incidents threaten IndiGo and Air India. With profits declining and rising passenger dissatisfaction, the industry must address systemic vulnerabilities ahead of the entry of new regional players

GS III: Economy

FULL CONTEXT

Deepanshu Mohan
Anvita Tripathi

The past year was marked by sustained turbulence in India's civil aviation sector, with multiple failures, whose scale and frequency paint a grim picture for the duopoly (IndiGo and the Air India group), both now bracing for thumping losses, with profits plunging drastically, according to recent numbers. The year witnessed a series of breakdowns from the June 2025 Ahmedabad crash to mass cancellations and prolonged flight delays generating unrest, not only among stranded passengers, but across the aviation market at large.

The December IndiGo disruption emerged as the first failed stress test, the scale of which now threatens to weigh heavily on the country's largest carrier, with it being ranked in the bottom layer of most indexes. What appeared to be an airline-specific failure has now revealed itself as a system-wide constraint coming into view. And as the system attempts to correct itself after this exposure, the emergence of new regional players receiving No Objection Certificates (NOCs) demands regulatory caution: without targeted structural correction, these entrants risk merely redistributing fragility rather than absorbing shocks or easing the sector's mounting operational strain.

India's commercial aviation sector stands as the world's third-largest domestic market, operating over 840 aircraft and carrying more than 350 million passengers annually. Yet this scale has been achieved through an expansion that is increasingly overstretched. As airlines prepare for the upcoming peak travel season amid tighter duty-time enforcement and fleet expansion, the December disruption now reads less as an aberration and more as a warning – making it imperative to evaluate what needs correction.

India's pilot bottleneck
The December disruption brought into sharp view the mechanics of vulnerability within India's aviation system. IndiGo entered Phase-2 of the implementation of the Flight Duty Time Limitation (FDTL) norms with 5,038 pilots operating a fleet of more than 360 aircraft, translating into a pilot-to-aircraft ratio of roughly 14, well below the global benchmark of 18-20 considered necessary for fatigue-mitigated operations. This mismatch exposed the limits of an operating model calibrated for sustained high utilisation.

The new FDTL framework, which reduced permissible night operations, extended mandatory rest periods, and tightened cumulative flight-hour ceilings, rendered IndiGo's published schedules legally untenable without adjustment. Even with the flight time capped at 60 hours over a seven-day period, substantially higher than the 40-hour weekly standard widely regarded as healthy across sectors, the rules proved incompatible with existing crew strength.

While India's aviation expansion has intensified demands for pilots, training capacity has failed to keep pace. Parliamentary disclosures estimate a requirement of 7,000 pilots between 2024 and 2026, rising to 25,000-30,000 over the next decade. In contrast, the Directorate General of Civil Aviation (DGCA) issued only over 5,700 Commercial Pilot Licences (CPL) between

Plummeting hopes

India's commercial aviation sector stands as the world's third-largest domestic market, carrying more than 350 million passengers annually. Yet this scale has been achieved through an expansion that is increasingly overstretched

Chart 1: Pilot to aircraft ratio (number of pilots per available aircraft)

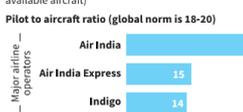


Chart 2: CPL issuance versus estimated pilot requirement

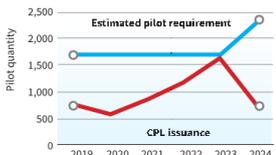


Chart 3: Domestic market share of Indian airlines (2024-25)



2020 and 2024, a figure further diluted by attrition and type-rating constraints.

Industry norms indicate that 15-16 pilots are required per narrow-body aircraft, yet trainer shortages, simulator constraints, regulatory bottlenecks, and high training costs have rendered pilot supply relatively inelastic. Airlines have increasingly relied on foreign aircrew, with around 236 temporary approval licenses issued in 2025. However, these remain a limited and expensive stopgap.

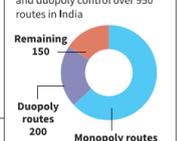
Regulatory capacity has further compounded the strain. Nearly half of the DGCA's sanctioned technical positions remain vacant even as fleet size and passenger volumes expand. Recent disruptions have been managed through schedule exemptions rather than strict enforcement, reflecting a shift towards ad hoc crisis management and underscoring deeper fragilities in India's aviation oversight framework.

India's aviation duopoly

The degree of concentration in India's domestic aviation market materially alters both the nature of competition and the system's operational resilience. DGCA data for 2024-25 show that IndiGo commands approximately 63% to 65% of domestic passenger traffic, while the Air India group accounts for a further 27% to 28%, together forming a duopoly controlling nearly 90% of the market. At this level of concentration, IndiGo ceases to function merely as a competing airline and instead assumes the role of a systemically significant carrier, whose operational decisions have direct implications for national connectivity, fare stability, and service continuity.

Empirical evidence from cancellation episodes indicate that disruptions of dominant airlines lead to a contraction in aggregate capacity rather than a redistribution of passengers to competing carriers. Data show that IndiGo operates as the sole carrier on about 60.4% of all

Chart 4: IndiGo's monopoly and duopoly control over 950 routes in India



Complete chaos: Passengers distressed over flight cancellations at Rajiv Gandhi International Airport in Shamshabad, Hyderabad on December 5, 2025. NAGARA GOPAL

routes. Therefore, operational stress at IndiGo does not merely displace traffic across the network; it results in the outright loss of connectivity on a large share of domestic sectors, with few or no viable alternatives for passengers.

New regional players

In December 2025, the Ministry of Civil Aviation issued NOCs for the operational launch of three regional airlines – Shankh Air, Al Hind Air, and FlyExpress – all aimed at enhancing regional connectivity and serving previously unattended routes. Al Hind Air will operate regional connections from Kochi, Shankh Air will begin services from the upcoming Noida International Airport linking regions in Uttar Pradesh, and FlyExpress will function as a low-cost passenger and cargo carrier in Telangana.

These new entrants offer a ray of hope for de-concentration and improved regional connectivity, particularly under the UDAN scheme, which had operationalised 625 routes and 85 airports by 2025, including 102 new routes in the Northeast, targeting 1.5 crore commuters in the first phase itself. Yet, Tier-2 and Tier-3 cities still rely on only one or two airlines with limited frequency, and any disruption in IndiGo's operations could lead to route cancellations, rendering air transport inaccessible for a sizable portion of the population.

The vulnerability of past regional airlines underscores that challenges in India's aviation sector remain significant. The market has witnessed the failures of several carriers, including Paramount Airways (2010), Kingfisher Airlines (2012), Jet Airways (2019), Trujet (2022), and Go First (2023), while Vistara failed in 2024 and was subsequently acquired by Air India. These failures were driven by intense cost competition, weak demand in smaller markets, poor management, and infrastructural limitations at regional

THE GIST

The December IndiGo disruption emerged as the first failed stress test, the scale of which now threatens to weigh heavily on the country's largest carrier, with it being ranked in the bottom layer of most indexes.

DGCA data for 2024-25 show that IndiGo commands approximately 63% to 65% of domestic passenger traffic, while the Air India group accounts for a further 27% to 28%, together forming a duopoly controlling nearly 90% of the market.

In December 2025, the Ministry of Civil Aviation issued NOCs for the operational launch of three regional airlines – Shankh Air, Al Hind Air, and FlyExpress – all aimed at enhancing regional connectivity and serving previously unattended routes.

airports. A persistent structural challenge was the volatility of Aviation Turbine Fuel (ATF) prices, which are closely tied to the U.S. dollar, exposing airlines to global market fluctuations.

For emerging players to survive and meaningfully contribute to market de-concentration, active policy support beyond initial NOCs will be essential. This includes the effective implementation of UDAN subsidies, preferential slot allocation at congested airports, coordinated development of Tier-2 and Tier-3 airport infrastructure, and potentially fuel hedging mechanisms or tax relief on ATF to offset price volatility.

The need for a systemic solution

The rising frequency of safety incidents indicate that India's aviation system is operating beyond its safe design limits. By late 2025, the DGCA had issued 19 safety violation notices citing breaches of FDTL norms, lapses in quality assurance, unauthorised cockpit access, and aircraft operated with expired emergency equipment.

Globally, airlines maintain 20-25% spare crew capacity to absorb shocks; Indian carriers operate at near-total utilisation, allowing minor disruptions to cascade across networks. In this context, crisis management cannot substitute for structural reform.

With India accounting for 4.2% of global air traffic, and domestic demand set to rise sharply by reaching 715 million by 2030, failure to address these constraints risks converting India's aviation growth into a recurring crisis borne ultimately by passengers.

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A reckoning for India's aviation sector

भारत के विमानन क्षेत्र के लिए एक निर्णायक क्षण

- India's aviation sector faces urgent challenges as operational failures and safety incidents threaten IndiGo and Air India. With profits declining and rising passenger dissatisfaction, the industry must address systemic vulnerabilities ahead of the entry of new regional players

भारत का विमानन क्षेत्र तत्काल चुनौतियों का सामना कर रहा है क्योंकि संचालन विफलताएँ और सुरक्षा



घटनाएँ IndiGo और Air India के लिए खतरा बन रही हैं। लाभ में गिरावट और बढ़ती यात्री असंतुष्टि के साथ, उद्योग को नए क्षेत्रीय खिलाड़ियों के प्रवेश से पहले प्रणालीगत कमजोरियों को दूर करना होगा

India's Civil Aviation Turbulence भारत का नागरिक उड्डयन संकट

- The past year saw **sustained turbulence** in India's **civil aviation sector**, with multiple failures affecting the **IndiGo–Air India duopoly**.
पिछला वर्ष भारत के नागरिक उड्डयन क्षेत्र में लगातार संकट का रहा, जिससे इंडिगो-एयर इंडिया द्वयाधिकार प्रभावित हुआ।
- Both airlines are bracing for **heavy losses** with **profits plunging sharply**.
दोनों एयरलाइंस भारी नुकसान झेलने की तैयारी में हैं और लाभ में तेज गिरावट आई है।
- The year included the **June 2025 Ahmedabad crash**, **mass cancellations** and **prolonged flight delays**, causing unrest among **passengers and the aviation market**.
इस वर्ष जून 2025 अहमदाबाद दुर्घटना, बड़े पैमाने पर उड़ान रद्द और लंबे विलंब हुए, जिससे यात्रियों और पूरे उड्डयन बाजार में असंतोष फैला।

System-wide stress and regulatory caution व्यापक प्रणालीगत दबाव और नियामकीय सावधानी

- The **December IndiGo disruption** was the first major **failed stress test** for the airline.
दिसंबर इंडिगो संकट एयरलाइन के लिए पहला बड़ा असफल दबाव परीक्षण था।
- It pushed the airline to the **bottom of performance indexes**.
इससे एयरलाइन प्रदर्शन सूचकांकों में नीचे चली गई।
- What seemed an **airline-specific issue** revealed a **system-wide constraint**.
जो पहले एयरलाइन-विशिष्ट समस्या लग रही थी, वह पूरी प्रणाली की कमजोरी निकली।
- New **regional airlines receiving NOCs** require **regulatory caution**.
नई क्षेत्रीय एयरलाइनों को NOC मिलने पर नियामकीय सावधानी आवश्यक है।
- Without **structural correction**, new entrants may only **redistribute fragility** instead of easing pressure.
संरचनात्मक सुधार के बिना नए खिलाड़ी केवल कमजोरी को बाँटेंगे, समाधान नहीं देंगे।

Scale vs strain in Indian aviation भारतीय उड्डयन का आकार और दबाव

- India is the **world's third-largest domestic aviation market**.
भारत विश्व का तीसरा सबसे बड़ा घरेलू उड्डयन बाजार है।
- It operates over **840 aircraft** and carries more than **350 million passengers annually**.
यह 840 से अधिक विमानों का संचालन करता है और सालाना 35 करोड़ से अधिक यात्रियों को ढोता है।
- However, this growth is now **overstretched**.
लेकिन यह विस्तार अब अधिक दबावग्रस्त हो गया है।
- The **December disruption** is a **warning**, not an exception.
दिसंबर संकट एक चेतावनी है, अपवाद नहीं।
- The sector must evaluate **necessary corrections** before the **peak travel season**.
उच्च यात्रा सीजन से पहले क्षेत्र को आवश्यक सुधारों का मूल्यांकन करना होगा।

India's pilot bottleneck भारत में पायलट की कमी

- The disruption exposed **structural vulnerability** in aviation operations.
इस संकट ने उड्डयन संचालन की संरचनात्मक कमजोरी उजागर की।
- IndiGo entered **Phase-2 of FDTL norms** with **5,038 pilots** for over **360 aircraft**.
इंडिगो ने FDTL नियमों के चरण-2 में 360+ विमानों के लिए 5,038 पायलटों के साथ प्रवेश किया।
- This gave a **pilot-to-aircraft ratio of about 14**.
इससे पायलट-विमान अनुपात लगभग 14 रहा।



- The **global benchmark is 18–20** for **fatigue-safe operations**.
वैश्विक मानक 18–20 है, जो थकान-रहित सुरक्षित संचालन के लिए आवश्यक है।
- This mismatch exposed the limits of **high-utilisation operating model**.
इस असंतुलन ने उच्च उपयोग वाले संचालन मॉडल की सीमाएँ उजागर कर दीं।

FDTL framework and pilot shortage FDTL ढांचा और पायलट की कमी

- The new **FDTL framework** reduced **night operations**, increased **mandatory rest**, and tightened **flight-hour ceilings**, making IndiGo schedules **legally untenable** without changes.
नए FDTL ढांचे ने रात्रि उड़ानें घटाई, अनिवार्य विश्राम बढ़ाया और उड़ान घंटों की सीमा कड़ी की, जिससे इंडिगो की समय-सारिणी कानूनी रूप से असंभव हो गई।
- Even with **60-hour weekly flight cap**, higher than the **40-hour healthy standard**, rules clashed with available **crew strength**.
60 घंटे साप्ताहिक सीमा के बावजूद, जो 40 घंटे स्वस्थ मानक से अधिक है, नियम उपलब्ध कू क्षमता से मेल नहीं खाए।
- India's aviation growth increased **pilot demand**, but **training capacity lagged**.
भारत के उड्डयन विस्तार ने पायलट मांग बढ़ाई, पर प्रशिक्षण क्षमता पीछे रह गई।
- Parliamentary data estimate **7,000 pilots needed (2024–26)**, rising to **25,000–30,000 in a decade**.
संसदीय आंकड़ों के अनुसार 2024–26 में 7,000 पायलट और अगले दशक में 25,000–30,000 पायलट चाहिए।
- The **DGCA** issued only **5,700 CPL licences (2020–24)**, further reduced by **attrition and type-rating limits**.
DGCA ने 2020–24 में केवल 5,700 CPL लाइसेंस जारी किए, जो त्याग और टाइप-रेटिंग सीमाओं से और घट गए।
- Industry requires **15–16 pilots per narrow-body aircraft**, but **trainer shortages, simulator limits, regulatory hurdles, and high cost** restrict supply.
उद्योग को प्रति विमान 15–16 पायलट चाहिए, पर ट्रेनर, सिमुलेटर, नियम और उच्च लागत आपूर्ति सीमित करते हैं।
- Airlines used **foreign pilots**, with **236 temporary licences in 2025**, but this is an **expensive stopgap**.
एयरलाइनों ने विदेशी पायलटों का उपयोग किया, 2025 में 236 अस्थायी लाइसेंस, पर यह महंगा अस्थायी समाधान है।
- Nearly **half of DGCA technical posts are vacant**, worsening strain despite fleet and passenger growth.
DGCA के लगभग आधे तकनीकी पद खाली हैं, जिससे दबाव बढ़ा है।
- Recent crises were handled through **schedule exemptions instead of strict enforcement**, showing **ad hoc crisis management** and deeper system fragility.
हालिया संकटों को सख्त पालन के बजाय छूट देकर संभाला गया, जो अस्थायी प्रबंधन और प्रणाली की कमजोरी दर्शाता है।

India's aviation duopoly भारत का उड्डयन द्वयाधिकार

- Market concentration shapes **competition and system resilience**.
बाजार का संकेन्द्रण प्रतिस्पर्धा और प्रणाली की स्थिरता को प्रभावित करता है।
- DGCA data **2024–25** show **IndiGo holds 63–65%** and **Air India group 27–28%** of domestic traffic.
2024–25 DGCA आंकड़े बताते हैं कि इंडिगो 63–65% और एयर इंडिया समूह 27–28% घरेलू यात्री यातायात नियंत्रित करते हैं।
- Together they form a **duopoly controlling about 90%** of the market.
दोनों मिलकर लगभग 90% बाजार नियंत्रित करने वाला द्वयाधिकार बनाते हैं।
- IndiGo functions as a **systemically significant carrier** influencing **connectivity, fares and service continuity**.



इंडिगो एक प्रणालीगत रूप से महत्वपूर्ण एयरलाइन बन गई है जो कनेक्टिविटी, किराए और सेवा निरंतरता को प्रभावित करती है।

- Data show disruptions of dominant airlines reduce **overall capacity instead of redistributing passengers**.
आंकड़े बताते हैं कि प्रमुख एयरलाइन में बाधा आने पर **कुल क्षमता घटती है**, यात्रियों का पुनर्वितरण नहीं होता।
- IndiGo operates as the **sole carrier on 60.4% routes**.
इंडिगो **60.4% मार्गों पर एकमात्र एयरलाइन** है।
- Thus disruption at IndiGo causes **loss of connectivity** across many domestic routes with **few alternatives**.
इसलिए इंडिगो में बाधा आने से कई घरेलू मार्गों पर **कनेक्टिविटी समाप्त** हो जाती है और **विकल्प कम** रहते हैं।

New regional players नए क्षेत्रीय खिलाड़ी

- In **December 2025**, the **Ministry of Civil Aviation** issued **NOCs** for three regional airlines — **Shankh Air, AI Hind Air, FlyExpress** — to boost **regional connectivity** and serve **unattended routes**.
दिसंबर 2025 में नागरिक उड्डयन मंत्रालय ने तीन क्षेत्रीय एयरलाइनों — **शंख एयर, अल हिंद एयर, फ्लाइएक्सप्रेस** — को एनओसी जारी किए ताकि **क्षेत्रीय कनेक्टिविटी** बढ़े और **असंपर्कित मार्गों** को सेवा मिले।
- **AI Hind Air** will operate from **Kochi**, **Shankh Air** from **Noida International Airport** connecting **Uttar Pradesh**, and **FlyExpress** as a **low-cost passenger and cargo carrier** in **Telangana**.
अल हिंद एयर कोच्चि से, शंख एयर नोएडा अंतरराष्ट्रीय हवाईअड्डे से उत्तर प्रदेश को जोड़ते हुए, और फ्लाइएक्सप्रेस तेलंगाना में कम लागत यात्री व कार्गो सेवा चलाएगी।
- These entrants support **de-concentration and regional connectivity**, especially under **UDAN scheme**, which operationalised **625 routes and 85 airports by 2025**, including **102 Northeast routes**, targeting **1.5 crore commuters** in Phase-1.
ये नए खिलाड़ी बाजार विकेंद्रीकरण और क्षेत्रीय कनेक्टिविटी को बढ़ाते हैं, विशेषकर **उड़ान योजना** के तहत, जिसने **2025 तक 625 मार्ग और 85 हवाईअड्डे** शुरू किए, जिनमें **पूर्वोत्तर के 102 मार्ग** शामिल हैं और पहले चरण में **1.5 करोड़ यात्रियों** का लक्ष्य था।
- Yet **Tier-2 and Tier-3 cities** still depend on **1-2 airlines**, and disruption in **IndiGo** could cause **route cancellations** and loss of access for many.
फिर भी **टियर-2 और टियर-3 शहर** अभी भी **1-2 एयरलाइनों** पर निर्भर हैं, और **इंडिगो** में बाधा आने पर **मार्ग रद्द** हो सकते हैं और कई लोगों की पहुंच समाप्त हो सकती है।
- Past failures show sector vulnerability — **Paramount Airways (2010), Kingfisher (2012), Jet Airways (2019), TruJet (2022), Go First (2023), Vistara (2024)** later merged with **Air India**.
पिछली विफलताएं क्षेत्र की कमजोरी दिखाती हैं — **पैरामाउंट एयरवेज (2010), किंगफिशर (2012), जेट एयरवेज (2019), ट्रूजेट (2022), गो फर्स्ट (2023), विस्तारा (2024)** बाद में एयर इंडिया में शामिल हुईं।
- Causes included **cost competition, weak demand, poor management, regional infrastructure limits**, and volatile **ATF prices linked to US dollar**.
कारणों में **कड़ी लागत प्रतिस्पर्धा, कमजोर मांग, खराब प्रबंधन, क्षेत्रीय ढांचा सीमाएं और डॉलर से जुड़ी एटीएफ कीमतों की अस्थिरता** शामिल थीं।
- Survival of new players needs **policy support beyond NOCs** — **UDAN subsidies, preferential slots, Tier-2/3 infrastructure, fuel hedging or ATF tax relief**.
नए खिलाड़ियों के टिके रहने के लिए **एनओसी से आगे नीति समर्थन** जरूरी है — **उड़ान सब्सिडी, प्राथमिक स्लॉट, टियर-2/3 ढांचा, ईंधन हेजिंग या एटीएफ कर राहत**।

The need for a systemic solution प्रणालीगत समाधान की आवश्यकता

- Rising **safety incidents** show the aviation system is operating **beyond safe limits**.
बढ़ती **सुरक्षा घटनाएं** दिखाती हैं कि उड्डयन प्रणाली **सुरक्षित सीमा से परे** चल रही है।



- By late 2025, DGCA issued 19 safety violation notices for FDTL breaches, quality lapses, cockpit access violations, expired emergency equipment. 2025 के अंत तक, DGCA ने 19 सुरक्षा नोटिस जारी किए — FDTL उल्लंघन, गुणवत्ता त्रुटि, कॉकपिट पहुंच उल्लंघन, समाप्त आपात उपकरण।
- Globally airlines keep 20-25% spare crew, but Indian airlines operate at near full utilisation, letting small disruptions cascade. विश्व स्तर पर एयरलाइंस 20-25% अतिरिक्त कू रखती हैं, पर भारतीय एयरलाइंस लगभग पूर्ण उपयोग पर चलती हैं, जिससे छोटी बाधाएं बड़ी समस्या बनती हैं।
- Thus crisis management cannot replace structural reform. इसलिए संकट प्रबंधन, संरचनात्मक सुधार का विकल्प नहीं हो सकता।
- India handles 4.2% of global air traffic, with demand projected 715 million by 2030, and failure to fix constraints may turn growth into a recurring crisis for passengers. भारत वैश्विक हवाई यातायात का 4.2% संभालता है, और मांग 2030 तक 715 मिलियन होने की संभावना है; बाधाएं न सुलझीं तो विकास यात्रियों के लिए बार-बार संकट बन सकता है।

Budget ups limit but NRIs hold 0.6% of NSE firms

Ashu
MUMBAI

Non-resident Indians (NRIs) held less than 1% of shares of NSE listed companies in the last three fiscal years even as Union Budget 2026-27 doubled investment limit for them to 10% from the existing 5%, according to data from Prime Database.

As of Q3FY26, NRIs owned just 0.62% of NSE-listed shares. The most the cohort held in the more than 2,600 companies of the largest index in India was just 0.64% in Q1FY25 and the smallest share was in Q3FY22. The composition did not change despite changing quarterly returns of the Nifty 500 index in the past three years.

Further, none of the Nifty 50, which is the 50 most representative companies of corporate India, were in the list of 20 companies with the most NRI



A file image of the National Stock Exchange building.

shareholding.

Foreign investment limit by NRIs is delineated under the Portfolio Investment Scheme brought in under the Foreign Exchange Management Act in 2000. The limits were fixed at 5%/NRI and 10% for all NRIs put together.

Limits raised

Investments above 10% were allowed up to 24% with RBI approval. Under the Union Budget 2026-27 the limits were increased

to 10% and 24% respectively without any need for an approval to promote "ease of doing business."

While this does create opportunities for NRIs to invest, experts sound cautious. "Generally we believe it is unlikely individual NRIs will hold 5% or 10% of a company," said Nitin Jain, CEO and director, Kotak Mahindra Asset Management Singapore. "However, the increase in the aggregate holding of NRIs up to 24% should be seen as a good move as it will provide for more headroom for aggregate participation in Indian companies by NRIs," Mr. Jain said.

Members of the diaspora are often seen being enthusiastic during PM Narendra Modi's foreign visits. On the contrary, data relating to their economic interest in India is in contrast to this vocal support.

NRIs often maintain a strong cultural connection

with India, but investment decisions are shaped more by regulatory complexity, tax compliance norms and risk-adjusted returns, said Srinath Sridharan, strategic adviser to business families and boards.

"For many older emigrants, navigating India's compliance environment and governance variability can appear less predictable compared with mature markets such as the U.S. or the U.K. Younger emigrants, meanwhile, frequently find more attractive dollar-denominated opportunities abroad," Mr. Sridharan added.

Safer bets

Further, Indian equities may not always emerge as the most efficient near-term choice in an increasingly competitive global landscape where investors are constantly scanning for safer and more compelling bets across markets.

On the policy intent behind the move, Former Finance Secretary Subhash Chandra Garg said the policy announcement was to 'give feelers' to the diaspora that Indian stock markets are more open now. Further, he said, even the government is aware that the impact of the higher ceiling is limited.

"NRIs earn higher returns on FCNR bank deposits and property holdings in India than the stock markets," he said.

To be sure, Indian equity markets have underperformed in dollar terms in comparison with major markets in the past year.

For context, foreign institutional investor interest in Indian equities is at a multi-decadal low, with more than ₹1.6 lakh crore stocks sold by funds.

However, Systematic Investment Plans (SIPs) and retail investors have largely kept the markets afloat.

Budget ups limit but NRIs hold 0.6% of NSE firms

बजट ने सीमा बढ़ाई लेकिन एनआरआई के पास एनएसई कंपनियों के 0.6% शेयर

- **Non-resident Indians (NRIs)** held less than 1% of shares of **NSE listed companies** in the last three fiscal years even as **Union Budget 2026-27** doubled investment limit for them to **10%** from the existing **5%**, according to data from **Prime Database**. गैर-निवासी भारतीय (एनआरआई) ने पिछले तीन वित्तीय वर्षों में एनएसई सूचीबद्ध कंपनियों के 1% से कम शेयर रखे, जबकि केंद्रीय बजट 2026-27 ने उनके लिए निवेश सीमा को मौजूदा 5% से बढ़ाकर 10% कर दिया, यह जानकारी प्राइम डेटाबेस के आंकड़ों के अनुसार है।
- As of **Q3FY26**, NRIs owned just **0.62%** of NSE-listed shares. **Q3FY26** तक, एनआरआई के पास एनएसई सूचीबद्ध शेयरों का केवल **0.62%** स्वामित्व था।
- The most the cohort held in the more than **2,600 companies** of the largest index in India was just **0.64%** in **Q1FY25** and the smallest share was in **Q3FY22**.



भारत के सबसे बड़े सूचकांक की **2,600 से अधिक कंपनियों** में इस समूह की अधिकतम हिस्सेदारी **Q1FY25 में 0.64%** रही और सबसे कम हिस्सा **Q3FY22** में था।

- The composition did not change despite changing quarterly returns of the **Nifty 500 index** in the past three years.
पिछले तीन वर्षों में **निफ्टी 500 सूचकांक** के तिमाही रिटर्न में बदलाव के बावजूद संरचना में कोई परिवर्तन नहीं हुआ।
- Further, none of the **Nifty 50**, which is the 50 most representative companies of corporate India, were in the list of **20 companies** with the most NRI shareholding.
इसके अलावा, **निफ्टी 50**, जो कॉर्पोरेट भारत की 50 सबसे प्रतिनिधि कंपनियां हैं, उनमें से कोई भी उन **20 कंपनियों** की सूची में नहीं थी जिनमें एनआरआई की सबसे अधिक हिस्सेदारी है।
- **Foreign investment limit** by NRIs is delineated under the **Portfolio Investment Scheme** brought in under the **Foreign Exchange Management Act in 2000**.
एनआरआई द्वारा **विदेशी निवेश सीमा** को **विदेशी मुद्रा प्रबंधन अधिनियम** के तहत **2000** में लाए गए **पोर्टफोलियो निवेश योजना** के अंतर्गत निर्धारित किया गया है।
- The limits were fixed at **5%/NRI** and **10% for all NRIs put together**.
सीमाएं **5% प्रति एनआरआई** और **सभी एनआरआई मिलाकर 10%** तय की गई थीं।

Limits raised सीमाएं बढ़ाई गईं

- Investments above **10%** were allowed up to **24%** with **RBI approval**.
10% से अधिक निवेश को **आरबीआई की मंजूरी** के साथ **24%** तक अनुमति दी गई थी।
- Under the **Union Budget 2026-27** the limits were increased to **10% and 24%** respectively without any need for an approval to promote “**ease of doing business**.”
केंद्रीय बजट 2026-27 के तहत सीमाओं को क्रमशः **10% और 24%** कर दिया गया, और “**ईज ऑफ डूइंग बिजनेस**” को बढ़ावा देने के लिए किसी मंजूरी की आवश्यकता नहीं रही।
- While this does create opportunities for NRIs to invest, experts sound cautious.
हालांकि इससे एनआरआई को निवेश के अवसर मिलते हैं, लेकिन विशेषज्ञ सतर्क नजर आते हैं।
- “Generally we believe it is unlikely individual NRIs will hold **5% or 10%** of a company,” said **Nitin Jain**, CEO and director, **Kotak Mahindra Asset Management Singapore**.
“आमतौर पर हमारा मानना है कि व्यक्तिगत एनआरआई किसी कंपनी में **5% या 10%** हिस्सेदारी नहीं रखेंगे,” **नितिन जैन**, सीईओ और निदेशक, **कोटक महिंद्रा एसेट मैनेजमेंट सिंगापुर** ने कहा।
- “However, the increase in the aggregate holding of NRIs up to **24%** should be seen as a good move as it will provide for more headroom for aggregate participation in Indian companies by NRIs,” Mr. Jain said.
“हालांकि, एनआरआई की कुल हिस्सेदारी को **24%** तक बढ़ाना एक अच्छा कदम माना जाना चाहिए क्योंकि इससे भारतीय कंपनियों में उनकी सामूहिक भागीदारी के लिए अधिक गुंजाइश मिलेगी,” श्री जैन ने कहा।
- Members of the diaspora are often seen being enthusiastic during **PM Narendra Modi’s** foreign visits.
प्रवासी समुदाय के सदस्य अक्सर **प्रधानमंत्री नरेंद्र मोदी** की विदेश यात्राओं के दौरान उत्साहित दिखते हैं।
- On the contrary, data relating to their economic interest in India is in contrast to this vocal support.
इसके विपरीत, भारत में उनकी आर्थिक रुचि से संबंधित आंकड़े इस मुखर समर्थन के विपरीत हैं।
- NRIs often maintain a strong cultural connection with India, but investment decisions are shaped more by regulatory complexity, tax compliance norms and risk-adjusted returns, said **Srinath Sridharan**, strategic adviser to business families and boards.
एनआरआई अक्सर भारत से मजबूत सांस्कृतिक संबंध बनाए रखते हैं, लेकिन निवेश निर्णय अधिकतर नियामक जटिलता, कर अनुपालन मानदंडों और जोखिम-समायोजित रिटर्न से प्रभावित होते हैं, **श्रीनाथ श्रीधरन**, व्यापारिक परिवारों और बोर्डों के रणनीतिक सलाहकार ने कहा।
- “For many older emigrants, navigating India’s compliance environment and governance variability can appear less predictable compared with mature markets such as the **U.S. or the U.K.** Younger emigrants, meanwhile, frequently find more attractive dollar-denominated opportunities abroad,” Mr. Sridharan added.
“कई पुराने प्रवासियों के लिए, भारत के अनुपालन वातावरण और प्रशासनिक विविधता को समझना **अमेरिका**



या ब्रिटेन जैसे परिपक्व बाजारों की तुलना में कम पूर्वानुमेय लगता है। वहीं, युवा प्रवासी अक्सर विदेशों में डॉलर आधारित अधिक आकर्षक अवसर पाते हैं," श्री श्रीधरन ने जोड़ा।

Safer bets सुरक्षित विकल्प

- Further, Indian equities may not always emerge as the most efficient near-term choice in an increasingly competitive global landscape where investors are constantly scanning for safer and more compelling bets across markets.
इसके अलावा, बढ़ती प्रतिस्पर्धी वैश्विक परिदृश्य में जहां निवेशक लगातार सुरक्षित और अधिक आकर्षक विकल्पों की तलाश में रहते हैं, भारतीय इक्विटी हमेशा निकट अवधि के लिए सबसे कुशल विकल्प के रूप में सामने नहीं आ सकती।
- On the policy intent behind the move, Former **Finance Secretary Subhash Chandra Garg** said the policy announcement was to 'give feelers' to the diaspora that Indian stock markets are more open now.
इस कदम के नीतिगत उद्देश्य पर, पूर्व **वित्त सचिव सुभाष चंद्र गर्ग** ने कहा कि यह नीति घोषणा प्रवासी समुदाय को यह संकेत देने के लिए थी कि भारतीय शेयर बाजार अब अधिक खुले हैं।
- Further, he said, even the government is aware that the impact of the higher ceiling is limited. उन्होंने आगे कहा कि सरकार भी जानती है कि उच्च सीमा का प्रभाव सीमित है।
- "NRIs earn higher returns on **FCNR bank deposits** and property holdings in India than the stock markets," he said.
"एनआरआई को **एफसीएनआर बैंक जमा** और भारत में संपत्ति होल्डिंग पर शेयर बाजारों की तुलना में अधिक रिटर्न मिलता है," उन्होंने कहा।
- To be sure, Indian equity markets have under-performed in dollar terms in comparison with major markets in the past year.
निश्चित रूप से, पिछले वर्ष में डॉलर के संदर्भ में भारतीय इक्विटी बाजार प्रमुख बाजारों की तुलना में कम प्रदर्शन कर चुके हैं।
- For context, foreign institutional investor interest in Indian equities is at a multi-decadal low, with more than **₹1.6 lakh crore** stocks sold by funds.
संदर्भ के लिए, भारतीय इक्विटी में विदेशी संस्थागत निवेशकों की रुचि कई दशकों के न्यूनतम स्तर पर है, और फंड द्वारा **₹1.6 लाख करोड़** से अधिक के शेयर बेचे गए हैं।
- However, **Systematic Investment Plans (SIPs)** and retail investors have largely kept the markets afloat.
हालांकि, **सिस्टेमैटिक इन्वेस्टमेंट प्लान (एसआईपी)** और खुदरा निवेशकों ने बड़े पैमाने पर बाजार को संभाले रखा है।

GS Paper III: S&T,

TOPICS COVERED

11 February 2026

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| 1. | What is a wet dress rehearsal?
वेट ड्रेस रिहर्सल क्या है? |
| 2. | The approaching AI surge, its global consequences
आगामी एआई उछाल, उसके वैश्विक परिणाम |
| 3. | What explains SpaceX and Blue Origin stepping up their moon plans?
SpaceX और Blue Origin के चंद्र योजनाओं को तेज करने का कारण क्या है? |



Health first



As part of National Deworming Day, the Tamil Nadu government distributed deworming tablets to students of government schools on Tuesday. As part of the routine, students at the Edayanchathu Government High School, Vellore were explained about the benefits of deworming. C. VENKATACHALAPATHY

As part of National Deworming Day, the Tamil Nadu government distributed deworming tablets to students of government schools on Tuesday. As part of the routine, students at the Edayanchathu Government High School, Vellore were explained about the benefits of deworming. C.

Get the rocket ready

GS III: S&T



Q: What is a wet dress rehearsal?

A: A week ago, NASA found a hydrogen leak during a wet dress rehearsal of its

Artemis II mission. A dress rehearsal in rocketry is a full run-through of activities that will happen on the day of launch, to validate people, hardware, software, and timelines as an integrated system.

A dry dress rehearsal practices the countdown and important operations without loading cryogenic propellants into the rocket. Instead, the team will power up vehicle and ground systems, verify its communications equipment, simulate critical events, and validate decision-making and handoffs between launch control, engineering, range safety, and, if applicable, crew operations. Many of the testing steps use simulated sensor inputs. These rehearsals are useful to reveal logical problems in the flow of events without risking fuel leaks.

A wet dress rehearsal is the same concept taken to the closest safe approximation of launch day, and with the vehicle being fuelled with its actual cryogenic propellants (typically liquid oxygen and liquid hydrogen for large rockets). The team will cool the fuel feed lines, load the tanks, pressurise them, monitor leak



NASA's SLS rocket and Orion spacecraft seen at the Kennedy Space Centre in Florida on January 17. NASA/JOEL KOWSKY

detectors, and execute the countdown into its final stages. These rehearsals also keep the tanks full as the propellant warms and boils off, then execute a stop just before ignition, followed by draining and returning the vehicle to a stable configuration. Wet rehearsals are important because only they can reveal events that happen in cryogenic conditions, e.g. leaks in seals or in the connections between the rocket and ground equipment.

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What is a wet dress rehearsal? वेट ड्रेस रिहर्सल क्या है?

• A week ago, **NASA** found a **hydrogen leak** during a **wet dress rehearsal** of its **Artemis II mission**. एक सप्ताह पहले **NASA** ने अपने **Artemis II** मिशन की **वेट ड्रेस रिहर्सल** के दौरान **हाइड्रोजन** रिसाव पाया।

• A dress rehearsal in **rocketry** is a **full run-through** of activities that will happen on the **day of launch**, to validate **people, hardware, software, and timelines** as an **integrated system**. **रॉकेट विज्ञान** में **ड्रेस रिहर्सल लॉन्च के दिन** होने वाली गतिविधियों का **पूर्ण अभ्यास** है, जिससे **लोग, हार्डवेयर, सॉफ्टवेयर और समयरेखा** को एक **एकीकृत प्रणाली** के रूप में परखा जाता है।

• A **dry dress rehearsal** practices the **countdown** and important operations **without loading cryogenic propellants** into the rocket.

ड्राई ड्रेस रिहर्सल में रॉकेट में **क्रायोजेनिक ईंधन** भरे बिना **काउंटडाउन** और महत्वपूर्ण प्रक्रियाओं का अभ्यास किया जाता है।

• Instead, the team will **power up vehicle and ground systems**, verify **communications equipment**, simulate **critical events**, and validate **decision-making and handoffs** between **launch control, engineering, range safety, and**

crew operations.

इसके बजाय टीम **वाहन और ग्राउंड सिस्टम चालू** करती है, **संचार उपकरण** की जाँच करती है, **महत्वपूर्ण घटनाओं का सिमुलेशन** करती है और **लॉन्च कंट्रोल, इंजीनियरिंग, रेंज सेफ्टी और क्रू ऑपरेशन्स** के बीच **निर्णय प्रक्रिया और समन्वय** की पुष्टि करती है।

- Many of the testing steps use **simulated sensor inputs**. परीक्षण के कई चरणों में **सिमुलेटेड सेंसर इनपुट** का उपयोग होता है।



- These rehearsals are useful to reveal **logical problems** in the **flow of events** without risking **fuel leaks**.
ये रिहर्सल घटनाओं के क्रम में तार्किक समस्याएँ उजागर करने में सहायक होते हैं, बिना ईंधन रिसाव के जोखिम के।
- A **wet dress rehearsal** is the same concept taken to the **closest safe approximation of launch day**, with the vehicle being **fuelled with actual cryogenic propellants**.
वेट ड्रेस रिहर्सल वही प्रक्रिया है जिसे **लॉन्च दिवस के सबसे सुरक्षित निकट रूप** में किया जाता है, जहाँ वाहन में **वास्तविक क्रायोजेनिक ईंधन भरा जाता है**।
- These propellants are typically **liquid oxygen and liquid hydrogen** for **large rockets**.
ये ईंधन सामान्यतः **बड़े रॉकेटों के लिए तरल ऑक्सीजन और तरल हाइड्रोजन** होते हैं।
- The team will **cool fuel feed lines, load the tanks, pressurise them, monitor leak detectors**, and execute the **countdown into final stages**.
टीम **ईंधन पाइपलाइन को ठंडा करती है, टैंक भरती है, उन्हें दबाव में लाती है, रिसाव डिटेक्टर की निगरानी करती है और काउंटडाउन के अंतिम चरण तक पहुँचती है**।
- These rehearsals also keep the **tanks full as the propellant warms and boils off**, then execute a **stop before ignition**, followed by **draining** and returning the vehicle to a **stable configuration**.
इन रिहर्सल में **ईंधन गर्म होकर उबलने पर भी टैंक भरे रखे जाते हैं, फिर इग्निशन से पहले रोक दी जाती है, उसके बाद ईंधन निकाला जाता है और वाहन को स्थिर स्थिति में लाया जाता है**।
- Wet rehearsals are important because only they can reveal events that happen in **cryogenic conditions**, such as **leaks in seals or connections** between the **rocket and ground equipment**.
वेट रिहर्सल महत्वपूर्ण हैं क्योंकि केवल ये ही क्रायोजेनिक परिस्थितियों में होने वाली घटनाएँ दिखा सकते हैं, जैसे सील या कनेक्शन में रिसाव जो रॉकेट और ग्राउंड उपकरण के बीच होता है।



The approaching AI surge, its global consequences

CS II, S&T

MOB

If there is a single technology that promises to unravel the present and usher in a new era, the bet would be on Artificial Intelligence (AI). At the very least, AI is set to effect a transformation that is comparable to any previous revolution, not excluding the Industrial Revolution. Impressive Large Language Models (LLMs) are already rolling out faster than one would have imagined possible. Rivalry between the United States and China in this area has become intense and the success of recent Chinese models is having a catalytic effect on the AI industry as a whole. This is, however, only the beginning.

All this has special relevance to a world which Canadian Prime Minister, Mark Carney, described in his address to the World Economic Forum (WEF) in Davos (in January this year), as follows: "... We are in the midst of a rupture, not a transition... great powers have begun using economic integration as weapons, tariffs as leverage, financial infrastructure as coercion, supply chains as vulnerabilities to be exploited". Mr. Carney did not, however, touch on potentially the greatest disruptor of all, viz., AI, or refer to the baneful/beneficial influence of AI which is already beginning to impact today's world. When he talked of great power rivalry, and that countries in between have a choice, there was no mention of AI and what impact it would have on today's world, and more so in the future.

Face the reality

World leaders must, however, wake up to this new reality, and come to terms with a phenomenon in which Open AI is beginning to consume the world. There is little realisation that the transformation that is taking place is almost certain to turn the world upside down. When Mr. Carney stated that 'we are in the midst of a rupture and not a transition', he did not have in mind – and probably realised even less – that it is the advent of AI, rather than other aspects, that is likely to herald the collapse of the international order as we know it.

Few leaders currently understand the extent of the threat posed by AI to the world as we know it. Some industry leaders such as Microsoft CEO Satya Nadella have pointed out that AI was already being used as tools of diplomacy and state-craft, and that nations require to build resilience and sovereign stacks. AI did figure in discussions at the WEF, but the contents of the debate hardly mirrored the dangers arising from unchecked AI. A great deal of the debate turned on how countries were placed to exploit this new phenomenon, with Union Minister for Electronics and Information Technology, Ashwini Vaishnav taking time off to rebut the presumption that India was a secondary AI power. Industry leaders, no doubt, increasingly see AI as a strategic enabler, given that digital transformation is helping to reshape competitiveness across different sectors – from fintech to health care. Additionally, there is some



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With AI disrupting global power, warfare and governance, the issue is whether humanity can keep pace with a set of checks and balances in place

realisation that AI's potential extends to other sectors as well. The judicial fraternity, for one, however, believes that there is a need to be more cautious about the use of AI in court proceedings, and that excessive reliance on AI in court rooms could lead to misjudgment. They point to the dangers of 'hallucinations' which could lead to improper citations and fabricated judgments.

Marching ahead across domains

All this, however, is but a precursor to what the real potential and danger posed by AI in the world of tomorrow are. As AI proliferates globally, it is already becoming evident that few technologies have the potential to exert the same degree of influence in terms of enhancing information flows, surveillance capabilities, revolutionising of communications, empowering analytical frameworks and the military-industrial segment. No other area of technology seems to have such a profound impact on existing civilisational networks.

In this sense, AI portends a breaching of certain limits that had existed since the Second World War and the overweening threat posed by technology and its utilisation in different domains. What is noteworthy is that AI operates at granular levels – and that the technology itself is undergoing a phased transition. In its present form, AI is already enabling the replication of speech and language, vision and reasoning, but what is little realised is that it is set to achieve new and dangerous heights of capabilities. This is especially so in regard to military and defence applications, for as AI becomes increasingly militarised, warfare itself is bound to – and is already undergoing – a paradigm shift from man to unmanned platforms, and from dependence on human-controlled systems to autonomous ones, that are capable of making their own decisions.

Even as AI is set to become all pervasive, its transformative impact on warfare, especially in the area of the evolution of weapon systems, is what is most worrisome. AI has made possible the deployment of unmanned aerial vehicles that are capable of autonomous flight. AI-driven cyber weapons and uncrewed ground vehicles equipped with intelligent navigation and targeting capabilities are already a reality. Both represent a paradigm shift in redefining combat, and employing operations across multiple systems without direct human intervention. As of today, AI offers unprecedented opportunities for the enhanced automation of operational decisions in areas of conflict, and of transforming battlefield dynamics.

Already, the portrayal of Ukrainian soldiers wearing night vision goggles, riding 'Quad bikes' to protect the capital city of Kiev, and launching 'jerry-rigged drones' equipped with small explosives, has become the defining image of future conflicts. Ukraine's success in checking and keeping at bay the mighty Russian Army in the first wave of Russia's attacks on Ukraine,

employing the latest AI technology, marks the most fundamental change in tactics of warfare since the advent of tanks at the end of the First World War. Ukraine's response has demonstrated the value of 'coming age technology', and how their skilful use could undermine conventional military capabilities. It is the hugely asymmetric impact that AI commands, that is both its strength and its danger portent. Though this is not being openly mentioned or touted, the reality is that it represents a colossal transfer of power from the traditional military to others, who have the capacity to develop and utilise AI devices. The real danger is that AI could very soon eclipse the smartest individuals, and nobody can or will know, when they become autonomous, and totally out of human control.

The dystopian impact of a powerful set of technologies which are not under the control of a human body or entity, and of self-sustaining technology, portrays a doomsday scenario. The beginnings of this are already evident, and are set to escalate enormously to the next levels of the concentration of power. There are unlimited possibilities in the doomsday scenario of autonomous drone swarms unleashing attacks on crowds, killing hundreds, if not, thousands. Both the military and security establishments would seek to equip themselves with such devices in a few years. AI would then be well set to become the greatest force amplifier in history. Its impact could range from wars and accidents, to random terror groups, to counter-revolutionary forces, and the like. The blunt truth is that nobody knows when, if how, AI might overtake or eclipse humans, and become an autonomous force for good or evil.

It is also becoming evident that, apart from the battlefield, AI is now becoming an instrument of immense value in different spheres of human activity including diplomacy and intelligence. In that sense, it is no longer merely a tool. Concerns that technologies such as AI would outpace institutions meant to govern them are real, but the most spectacular demonstration of AI is as yet on the battlefield – as seen across western Europe and West Asia. In both sectors, space, cyber and electronic warfare capacities have been woven together to completely transform the nature of warfare itself.

Need for effective oversight

The *obiter dictum* – given that AI enables rapid data processing and predictive analysis, and also provides opportunities for a variety of options, including crisis response, conflict prevention, and conflict resolution – is that humankind must develop a set of checks and balances to prevent AI from 'running away with the bit in its mouth'. Scientists, political leaders and others must come together to understand the implications of runaway AI technologies and decide how to keep them under control and in a manner that they benefit, rather than become a threat to, humankind.

The approaching AI surge, its global consequences

आगामी एआई उछाल, उसके वैश्विक परिणाम

Artificial Intelligence (AI) and a new era

कृत्रिम बुद्धिमत्ता (AI) और एक नया युग

- If there is a single technology that promises to unravel the present and usher in a new era, the bet would be on **Artificial Intelligence (AI)**.
यदि कोई एक तकनीक वर्तमान को बदलकर नया युग ला सकती है, तो वह **कृत्रिम बुद्धिमत्ता (AI)** है।
- AI is set to effect a transformation comparable to any previous revolution, including the **Industrial Revolution**.
AI ऐसा परिवर्तन लाने वाला है जो **औद्योगिक क्रांति** सहित किसी भी पिछली क्रांति के बराबर है।
- Impressive **Large Language Models (LLMs)** are rolling out faster than imagined.
प्रभावशाली **लार्ज लैंग्वेज मॉडल (LLMs)** अपेक्षा से अधिक तेजी से विकसित हो रहे हैं।
- Rivalry between the **United States and China** in AI has become intense, and recent **Chinese models** are having a catalytic effect on the **AI industry**.



AI में अमेरिका और चीन की प्रतिस्पर्धा तीव्र हो गई है और हाल के चीनी मॉडल पूरे AI उद्योग पर प्रेरक प्रभाव डाल रहे हैं।

- This is only the **beginning**.
यह केवल शुरुआत है।

Relevance to a changing world बदलती दुनिया में प्रासंगिकता

- Canadian Prime Minister **Mark Carney**, in his **January address at WEF Davos**, described the world as being in a **rupture, not a transition**.
कनाडा के प्रधानमंत्री **मार्क कार्नी** ने जनवरी में WEF डारोस में दुनिया को परिवर्तन नहीं बल्कि विघटन की स्थिति में बताया।
- He said **economic integration, tariffs, financial systems, and supply chains** are being used as **weapons** by great powers.
उन्होंने कहा कि **आर्थिक एकीकरण, टैरिफ, वित्तीय प्रणाली और सप्लाई चेन** को महाशक्तियाँ हथियार की तरह इस्तेमाल कर रही हैं।
- However, he did not mention **AI**, the potentially greatest **disruptor**.
हालाँकि उन्होंने **AI**, जो सबसे बड़ा **विघटनकारी तत्व** हो सकता है, का उल्लेख नहीं किया।
- There was no discussion on the **impact of AI** on present and future geopolitics.
वर्तमान और भविष्य की भू-राजनीति पर **AI के प्रभाव** की चर्चा नहीं हुई।

Face the reality वास्तविकता का सामना करें

- World leaders must recognise the **new reality** of **Open AI transforming the world**.
विश्व नेताओं को **नई वास्तविकता** को स्वीकार करना होगा कि **Open AI दुनिया को बदल रहा है**।
- The transformation could **turn the world upside down** and potentially collapse the **international order**.
यह परिवर्तन दुनिया को **उलट-पुलट** सकता है और **अंतरराष्ट्रीय व्यवस्था** को प्रभावित कर सकता है।
- Few leaders understand the **threat posed by AI**.
कुछ ही नेता **AI से उत्पन्न खतरे** को समझते हैं।
- **Microsoft CEO Satya Nadella** said AI is already being used in **diplomacy and statecraft**, requiring nations to build **resilience and sovereign stacks**.
माइक्रोसॉफ्ट CEO सत्या नडेला ने कहा कि AI का उपयोग **कूटनीति और राज्य संचालन** में हो रहा है, और देशों को **लचीलापन व स्वदेशी तकनीकी ढांचा** बनाना होगा।
- AI was discussed at **WEF**, but the debate did not reflect the **dangers of unchecked AI**.
WEF में AI पर चर्चा हुई, लेकिन **अनियंत्रित AI के खतरे** पर्याप्त रूप से सामने नहीं आए।
- Much discussion focused on how countries could **exploit AI**, with **Ashwini Vaishnav** rebutting claims that **India is a secondary AI power**.
चर्चा इस पर केंद्रित रही कि देश AI का **कैसे उपयोग** करें, जहाँ **अश्विनी वैष्णव** ने भारत को **द्वितीयक AI शक्ति** मानने की धारणा का खंडन किया।
- Industry leaders see AI as a **strategic enabler**, reshaping **competitiveness** across sectors like **fintech and healthcare**.
उद्योग जगत AI को **रणनीतिक साधन** मानता है जो **फिनटेक और स्वास्थ्य** जैसे क्षेत्रों में प्रतिस्पर्धा बदल रहा है।
- The **judicial community** warns of risks such as **AI hallucinations**, leading to **wrong citations and fabricated judgments**.
न्यायिक समुदाय ने **AI hallucinations** के जोखिम बताए, जिससे **गलत संदर्भ और नकली निर्णय** हो सकते हैं।

Marching ahead across domains विभिन्न क्षेत्रों में आगे बढ़ता AI



- AI has the potential to transform **information flows, surveillance, communications, analytics, and the military-industrial sector.**
AI में सूचना प्रवाह, निगरानी, संचार, विश्लेषण और सैन्य-औद्योगिक क्षेत्र को बदलने की क्षमता है।
- No other technology has such a **profound impact on civilisational networks.**
किसी अन्य तकनीक का सभ्यतागत नेटवर्क पर इतना गहरा प्रभाव नहीं है।
- AI may breach limits that existed since **World War II**, posing an **overarching technological threat.**
AI द्वितीय विश्व युद्ध के बाद की सीमाओं को तोड़ सकता है और एक बड़ा तकनीकी खतरा पैदा कर सकता है।
- AI operates at **granular levels** and is undergoing a **phased transition.**
AI सूक्ष्म स्तर पर कार्य करता है और चरणबद्ध परिवर्तन से गुजर रहा है।
- Currently AI can replicate **speech, language, vision, and reasoning**, but may achieve **dangerous capabilities.**
वर्तमान में AI भाषण, भाषा, दृष्टि और तर्क की नकल कर सकता है, लेकिन आगे खतरनाक क्षमताएँ हासिल कर सकता है।
- AI is increasingly influencing **military and defence**, shifting warfare from **man to unmanned systems** and from **human control to autonomous decision-making.**
AI सैन्य और रक्षा क्षेत्र में बढ़ता प्रभाव डाल रहा है, जिससे युद्ध मानव से मानव रहित प्रणालियों और मानव नियंत्रण से स्वायत्त निर्णय प्रणाली की ओर बढ़ रहा है।

AI and transformation of warfare AI और युद्ध का परिवर्तन

- Even as **AI becomes all pervasive**, its most worrying impact is on the **evolution of weapon systems.**
जैसे-जैसे AI सर्वव्यापी हो रहा है, इसका सबसे चिंताजनक प्रभाव हथियार प्रणालियों के विकास पर है।
- AI has enabled deployment of **unmanned aerial vehicles (UAVs)** capable of **autonomous flight.**
AI ने मानवरहित हवाई वाहनों (UAVs) को संभव बनाया है जो स्वायत्त उड़ान कर सकते हैं।
- **AI-driven cyber weapons** and **uncrewed ground vehicles** with intelligent navigation and **targeting** are already a reality.
AI संचालित साइबर हथियार और बुद्धिमान नेविगेशन व टारगेटिंग वाले मानवरहित जमीनी वाहन अब वास्तविकता हैं।
- Both represent a **paradigm shift** in combat, enabling **multi-system operations without human intervention.**
ये दोनों युद्ध में मौलिक परिवर्तन दर्शाते हैं और मानव हस्तक्षेप के बिना बहु-प्रणाली संचालन संभव बनाते हैं।
- AI offers unprecedented **automation of operational decisions** and transforms **battlefield dynamics.**
AI संचालनात्मक निर्णयों के स्वचालन के नए अवसर देता है और युद्धक्षेत्र की गतिशीलता बदल रहा है।

AI in modern warfare examples आधुनिक युद्ध में AI के उदाहरण

- Images of **Ukrainian soldiers** using **night vision goggles**, riding **quad bikes**, and launching **jerry-rigged drones** define future conflicts.
यूक्रेनी सैनिकों के नाइट विजन गॉगल्स, क्वाड बाइक और जुगाड़ ड्रोन का उपयोग भविष्य के युद्धों की पहचान बन गया है।
- Ukraine's success in resisting **Russian Army** using **AI technology** marks the biggest change since **World War I tanks.**
AI तकनीक से रूसी सेना का मुकाबला करने में यूक्रेन की सफलता प्रथम विश्व युद्ध के टैंकों के बाद सबसे बड़ा परिवर्तन है।
- This shows how **emerging technology** can undermine **conventional military power.**
यह दर्शाता है कि नई तकनीक पारंपरिक सैन्य शक्ति को कमजोर कर सकती है।
- AI creates **asymmetric power**, representing both **strength and danger.**
AI असममित शक्ति पैदा करता है जो ताकत और खतरा दोनों है।



- It represents a **transfer of power** from traditional militaries to those capable of developing **AI systems**.
यह पारंपरिक सेनाओं से **AI तकनीक विकसित करने वालों** की ओर **शक्ति हस्तांतरण** दर्शाता है।
- AI may soon **eclipse human intelligence** and become **fully autonomous**.
AI जल्द ही **मानव बुद्धि से आगे निकलकर पूर्ण स्वायत्त** हो सकता है।

Dystopian risks of AI AI के भयावह जोखिम

- Powerful **self-sustaining technologies** outside human control create a **doomsday scenario**.
मानव नियंत्रण से बाहर **स्व-संचालित तकनीक** एक **प्रलयकारी स्थिति** पैदा कर सकती है।
- Autonomous **drone swarms** could attack crowds, killing **hundreds or thousands**.
स्वायत्त **ड्रोन समूह** भीड़ पर हमला कर **सैकड़ों या हजारों** लोगों को मार सकते हैं।
- Military and security forces may soon adopt such **AI weapons**.
सैन्य और सुरक्षा बल जल्द ही ऐसे **AI हथियार** अपनाएंगे।
- AI could become the greatest **force multiplier** in history.
AI इतिहास का सबसे बड़ा **शक्ति गुणक** बन सकता है।
- Its impact may range from **wars and accidents** to **terror groups and counter-revolutionary forces**.
इसका प्रभाव **युद्ध, दुर्घटनाएँ, आतंक समूह और प्रतिविप्लवी शक्तियों** तक फैल सकता है।
- Nobody knows when AI may **overtake humans** and act autonomously for **good or evil**.
कोई नहीं जानता AI कब **मानवों से आगे निकलकर अच्छे या बुरे** के लिए स्वायत्त हो जाएगा।

AI beyond battlefield युद्धक्षेत्र से परे AI

- AI is becoming valuable in **diplomacy, intelligence, and other spheres of activity**.
AI **कूटनीति, खुफिया और अन्य क्षेत्रों** में महत्वपूर्ण बन रहा है।
- AI is no longer just a **tool**.
AI अब केवल एक **उपकरण** नहीं रहा।
- Concerns exist that **technology may outpace institutions**, but AI's biggest impact is still seen on the **battlefield**.
चिंता है कि **तकनीक संस्थाओं से आगे निकल सकती है**, लेकिन AI का सबसे बड़ा प्रभाव अभी भी **युद्धक्षेत्र** में दिख रहा है।
- Across **Western Europe and West Asia**, space, cyber and electronic warfare are integrated, transforming warfare.
पश्चिमी यूरोप और पश्चिम एशिया में अंतरिक्ष, साइबर और इलेक्ट्रॉनिक युद्ध एकीकृत होकर युद्ध को बदल रहे हैं।
- **Need for effective oversight**
प्रभावी निगरानी की आवश्यकता
- AI enables rapid **data processing, predictive analysis, crisis response, conflict prevention and resolution**.
AI तेज़ **डेटा प्रोसेसिंग, पूर्वानुमान विश्लेषण, संकट प्रतिक्रिया, संघर्ष रोकथाम और समाधान** संभव बनाता है।
- Humanity must create **checks and balances** to prevent AI from **running out of control**.
मानवता को AI को **नियंत्रण से बाहर जाने** से रोकने के लिए **नियंत्रण तंत्र** विकसित करना होगा।
- Scientists, political leaders and others must understand **implications of runaway AI** and ensure it **benefits humankind**.
वैज्ञानिकों, नेताओं और अन्य लोगों को **अनियंत्रित AI के प्रभाव** समझकर यह सुनिश्चित करना होगा कि यह **मानवता के हित** में काम करे।



What explains SpaceX and Blue Origin stepping up their moon plans?

The simplest explanation for the pivot is that it improves the rate at which SpaceX can learn the technologies it most needs to mature. Another possibility is that in the current environment, lunar missions are also accompanied by external demand and more legible milestones

GS III: S&T
Vasudevan Mukunth

Two of the world's most visible private space companies are shifting their attention and resources to moon missions even as both continue to speak about longer term ambitions to Mars and beyond. For many years, the public identity of SpaceX has been fused with settling humans on Mars. Its founder and CEO Elon Musk has repeatedly argued that a self-sustaining settlement on Mars would reduce the risk of a catastrophe on the earth ends human civilisation. He and SpaceX have also presented the Starship programme as the transport system that could render large-scale interplanetary travel feasible.

Blue Origin, founded by billionaire Jeff Bezos, has projected a different long-term vision: of building industrial capacity in space so that heavy industry can move off the earth. In recent years, it has focused on developing its New Glenn heavy-lift rocket and a lunar lander for NASA's Artemis programme. It has also been flying customers on short suborbital trips aboard its New Shepard rocket.

What have the companies decided? While SpaceX has also been central to NASA's Artemis plans to the moon, now, however, the company is describing the moon as its immediate next priority in its sequence of major goals. The company has reportedly told investors that it is targeting an uncrewed lunar landing by March 2027 and that Mr. Musk has decided to focus on building a "self-growing city" on the moon. He also said on X that this can be achieved in under 10 years even while claiming that plans for a Mars city could still follow in roughly five to seven years.

While the moon and Mars are both interplanetary bodies, missions to the

former are easier for many reasons. The moon is under a week away by rocketflight; the distance is low enough for communications to be near-real-time; and the orbits of the earth and the moon are such that there are roughly three opportunities to launch to the moon every month. Going to Mars is much less forgiving. The most fuel-efficient launch opportunities come around roughly once every 26 months; the travel time is in months; and failing to get to the red planet on one attempt will mean a multi-year delay before the next comparable chance. Mr. Musk has in fact leaned into these differences to justify SpaceX pivoting to the moon.

To be noted is the fact that SpaceX is approaching an IPO and Mr. Musk has already merged it with xAI, another company he founded to use AI to advance "scientific discovery and gain a deeper understanding of our universe". So Mr. Musk's claims are being subjected to more scrutiny than before, with investors and the general public also on the watch for inflated promises and hype.

Late last month, Blue Origin also announced that it would hold its suborbital space tourism programme for at least two years and reallocate its resources to accelerating its "human lunar capabilities", including development work tied to the company's contract to build a lunar lander for NASA.

Why have they decided this?

In the U.S., NASA's priorities have become a political fight. Some leaders want it to fly to the moon first while others talk up Mars. When the U.S. Senate pressed NASA Administrator Jared Isaacman on whether pushing to go to Mars first would weaken the agency's moon programme, including Artemis, he replied that NASA could pursue both and tried to assure lawmakers that he supports the current

moon plan and that he isn't taking directions from Elon Musk (SpaceX is one of NASA's biggest contractors. Mr. Isaacman has also flown twice on privately funded SpaceX missions that he organised and paid for, Inspiration4 and Polaris, which makes him both a customer and a high-profile partner of SpaceX. Mr. Musk had also pushed for Mr. Isaacman's nomination, and senators explicitly asked Mr. Isaacman whether he had discussed how he would run NASA with Mr. Musk. While he answered that he had not, the fact that this was asked in a confirmation hearing says the suspicion of undue influence existed).

The simplest explanation for the pivot is that it improves the rate at which SpaceX can learn the technologies it most needs to mature. Another possibility is that in the current environment, lunar missions are also accompanied by external demand and more legible milestones. Mr. Musk's remarks come as the competition between the U.S. and China to return humans to the moon has intensified. As a result, being able to go to the moon has become a marker of geopolitical leadership and, importantly, a top priority for NASA.

Blue Origin, on the other hand, has two big problems it needs to solve to get to the moon: it needs to prove it can execute such complex, human-rated systems and it needs a near-term programme with real deadlines and external accountability. And its contract to build a lunar lander for NASA gives it both. Moon work is also more politically tractable than suborbital tourism, and if it succeeds, Blue Origin can buy credibility with NASA and with the broader space community.

Shouldn't they have seen NASA's plans coming?

Curiously, NASA's focus vis-à-vis humans

in space has been about getting to the moon first.

Should SpaceX and Blue Origin not have seen this coming instead of making a hard turn towards the moon within a month of each other?

Perhaps the surprise isn't that they both had plans for the moon but that they both kept centring their timelines and product narratives on getting humans to Mars for such a long time.

There's no need for public narratives to be the same as internal ones. SpaceX's brand has been built on getting to Mars and Mr. Musk has repeatedly used Mars dates as a way to signal the company's ambitions, to attract talent, and to keep public attention on Starship. Internally, however, the company has been deeply embedded in moon-related work thanks to NASA contracts. And now, SpaceX and Mr. Musk are aligning internal and external narratives and clarifying – or perhaps admitting – that the next major milestone is in fact a lunar landing, and that Mars will only come later. In other words, SpaceX and Blue Origin may have known the moon would be the next stop, just that they didn't want it to be the headline as well.

In sum, delays in NASA's Artemis schedule, tougher political oversight, and more geopolitical pressures have pushed NASA leaders to speak more loudly and more often about a moon-first agenda. Lawmakers in Congress, especially the Senate committees that authorise and fund NASA, have pressed Mr. Isaacman and other senior officials to defend the Artemis programme and explain how NASA will beat or match its international rivals, but especially China, in returning to the moon.

As that pressure increased, NASA could have signalled to its contractors that lunar milestones would define their success for now.

What explains SpaceX and Blue Origin stepping up their moon plans? SpaceX और Blue Origin के चंद्र योजनाओं को तेज करने का कारण क्या है?

- The simplest **explanation** for the **pivot** is that it improves the **rate** at which **SpaceX** can learn the **technologies** it most needs to **mature**. Another possibility is that in the current **environment**, **lunar missions** are also accompanied by **external demand** and more **legible milestones**. इस बदलाव का सबसे सरल **कारण** यह है कि इससे **SpaceX** को उन **तकनीकों** को विकसित करने की **गति** में सुधार मिलता है जिनकी उसे सबसे अधिक आवश्यकता है। एक और संभावना यह है कि वर्तमान **परिस्थिति** में **चंद्र मिशन बाहरी मांग** और अधिक स्पष्ट **मील के पथरों** के साथ जुड़े हुए हैं



Private space companies shifting to Moon missions निजी अंतरिक्ष कंपनियाँ चंद्र मिशनों की ओर

- Two major **private space companies** are shifting focus to **moon missions**, while still speaking about **Mars and beyond**. दो प्रमुख **निजी अंतरिक्ष कंपनियाँ** अब **चंद्र मिशनों** पर ध्यान दे रही हैं, जबकि **मंगल और उससे आगे** की बात जारी है।



- For years, **SpaceX** has linked its identity to **human settlement on Mars**. कई वर्षों से स्पेसएक्स की पहचान मंगल पर मानव बसावट से जुड़ी रही है।
- Founder **Elon Musk** says a **self-sustaining Mars settlement** could protect humanity if a **catastrophe on Earth** occurs. संस्थापक एलन मस्क कहते हैं कि मंगल पर आत्मनिर्भर बसावट पृथ्वी पर आपदा की स्थिति में मानवता को बचा सकती है।
- The **Starship programme** is presented as a system enabling **large-scale interplanetary travel**. स्टारशिप कार्यक्रम को बड़े पैमाने पर अंतरग्रहीय यात्रा संभव बनाने वाला तंत्र बताया गया है।
- **Blue Origin**, founded by **Jeff Bezos**, envisions **industrial capacity in space** so heavy industry can move **off Earth**. ब्लू ओरिजन, जिसे जेफ बेजोस ने स्थापित किया, का लक्ष्य अंतरिक्ष में औद्योगिक क्षमता बनाना है ताकि भारी उद्योग पृथ्वी से बाहर जा सके।
- It has focused on **New Glenn heavy-lift rocket** and a **lunar lander for NASA Artemis**, while flying customers on **New Shepard suborbital flights**. इसने न्यू ग्लेन भारी रॉकेट और नासा आर्टेमिस के लिए चंद्र लैंडर पर ध्यान दिया है, साथ ही न्यू शेपर्ड उपकक्षीय उड़ानों से यात्रियों को ले जाया गया है।

What have the companies decided? कंपनियों ने क्या निर्णय लिया?

- **SpaceX** now calls the **moon its immediate next priority** in major goals. स्पेसएक्स अब चंद्रमा को अपना अगला प्रमुख लक्ष्य बता रही है।
- It targets an **uncrewed lunar landing by March 2027** and building a **“self-growing city” on the moon**. इसका लक्ष्य मार्च 2027 तक बिना मानव चंद्र लैंडिंग और चंद्रमा पर “स्वयं विकसित शहर” बनाना है।
- Mr. Musk said this could happen in **under 10 years**, while a **Mars city may follow in 5-7 years**. मस्क ने कहा यह 10 वर्षों से कम में संभव है, जबकि मंगल शहर 5-7 वर्षों में बन सकता है।
- Moon missions are easier — **less than one week travel, near-real-time communication, and three launch windows monthly**. चंद्र मिशन आसान हैं — एक सप्ताह से कम यात्रा, लगभग वास्तविक समय संचार, और हर महीने तीन लॉन्च अवसर।
- Mars missions are harder — **launch window every 26 months, months-long travel, and failure causes multi-year delay**. मंगल मिशन कठिन हैं — 26 महीने में एक लॉन्च अवसर, महीनों की यात्रा, और विफलता से कई वर्षों की देरी होती है।
- Mr. Musk used these differences to justify **SpaceX pivot to the moon**. मस्क ने इन अंतर को स्पेसएक्स के चंद्रमा की ओर झुकाव का कारण बताया।

IPO and increased scrutiny आईपीओ और बढ़ती जांच

- **SpaceX approaching IPO** and merged with **xAI**, aimed at **AI-driven scientific discovery**. स्पेसएक्स आईपीओ के करीब है और xAI के साथ विलय हुआ है, जिसका लक्ष्य एआई आधारित वैज्ञानिक खोज है।
- Thus **investors and public scrutiny** over claims and hype has increased. इससे निवेशकों और जनता की जांच बढ़ गई है।

Blue Origin lunar focus ब्लू ओरिजन का चंद्र ध्यान

- **Blue Origin** paused **suborbital tourism for two years** to accelerate **human lunar capabilities**. ब्लू ओरिजन ने दो वर्षों के लिए उपकक्षीय पर्यटन रोका ताकि मानव चंद्र क्षमताएँ तेज हो सकें।



- Resources are redirected to **NASA lunar lander development** and related work. संसाधनों को नासा चंद्र लैंडर विकास और संबंधित कार्यों में लगाया गया है।

Why have they decided this? उन्होंने यह निर्णय क्यों लिया?

- In the **U.S.**, **NASA's priorities** have become a **political fight** between **moon-first** and **Mars-first** approaches.
अमेरिका में नासा की प्राथमिकताएँ अब राजनीतिक संघर्ष बन गई हैं — पहले चंद्रमा बनाम पहले मंगल।
- When the **U.S. Senate** questioned **NASA Administrator Jared Isaacman** about whether prioritising **Mars** would weaken the **Artemis moon programme**, he said **NASA can pursue both**.
जब अमेरिकी सीनेट ने नासा प्रशासक जैरेड आइज़ैकमैन से पूछा कि मंगल को प्राथमिकता देने से आर्टेमिस चंद्र कार्यक्रम कमजोर होगा या नहीं, उन्होंने कहा नासा दोनों कर सकता है।
- He assured lawmakers he supports the **moon plan** and is **not taking directions from Elon Musk**.
उन्होंने सांसदों को आश्वासन दिया कि वह चंद्र योजना का समर्थन करते हैं और एलन मस्क के निर्देश नहीं ले रहे।
- SpaceX is one of NASA's biggest contractors**, and Mr. Isaacman has flown twice on **privately funded SpaceX missions — Inspiration4 and Polaris**.
स्पेसएक्स नासा का बड़ा ठेकेदार है, और आइज़ैकमैन निजी स्पेसएक्स मिशनों — इन्स्पिरेशन4 और पोलारिस — में दो बार उड़ चुके हैं।
- Mr. Musk had supported **Isaacman's nomination**, and senators even asked whether he had discussed **running NASA with Musk**, showing **suspicious of undue influence**.
मस्क ने आइज़ैकमैन के नामांकन का समर्थन किया, और सीनेटरों ने पूछा कि क्या उन्होंने मस्क के साथ नासा संचालन पर चर्चा की, जिससे अनुचित प्रभाव की आशंका दिखी।
- The simplest reason for the **pivot to the moon** is that it helps **SpaceX learn key technologies faster**.
चंद्रमा की ओर झुकाव का सबसे सरल कारण यह है कि इससे स्पेसएक्स आवश्यक तकनीक जल्दी सीख सकता है।
- Another reason is that **lunar missions have external demand and clearer milestones**.
एक और कारण यह है कि चंद्र मिशनों की बाहरी मांग और स्पष्ट लक्ष्य हैं।
- Competition between the **U.S. and China to return humans to the moon** has intensified, making the moon a **symbol of geopolitical leadership** and a **top NASA priority**.
अमेरिका और चीन के बीच चंद्रमा पर मानव वापसी की प्रतिस्पर्धा तेज हो गई है, जिससे चंद्रमा भूराजनीतिक नेतृत्व का प्रतीक और नासा की शीर्ष प्राथमिकता बन गया है।

Blue Origin's reasons ब्लू ओरिजिन के कारण

- Blue Origin** must prove it can execute **complex human-rated systems** and needs a **near-term programme with deadlines and accountability**.
ब्लू ओरिजिन को साबित करना है कि वह जटिल मानव-योग्य प्रणालियाँ चला सकता है और उसे निकट-कालिक समयसीमा वाला कार्यक्रम चाहिए।
- Its **NASA lunar lander contract** provides both capability proof and real deadlines.
उसका नासा चंद्र लैंडर अनुबंध उसे क्षमता प्रमाण और वास्तविक समयसीमा देता है।
- Moon work is **more politically acceptable than suborbital tourism**, and success would build **credibility with NASA and the space community**.
चंद्र कार्य उपकक्षीय पर्यटन से अधिक राजनीतिक रूप से स्वीकार्य है, और सफलता से नासा व अंतरिक्ष समुदाय में विश्वसनीयता बढ़ेगी।

Shouldn't they have seen **NASA's plans** coming?
क्या उन्हें नासा की योजना पहले से नहीं दिखनी चाहिए थी?



- **NASA's human spaceflight focus** has long been **moon-first**.
नासा की मानव अंतरिक्ष उड़ान नीति लंबे समय से पहले चंद्रमा रही है।
- The surprise is not that both had **moon plans**, but that they long centred their **public narrative on Mars**.
आश्चर्य यह नहीं कि दोनों के पास चंद्र योजना थी, बल्कि यह कि उन्होंने लंबे समय तक मंगल को सार्वजनिक कथा का केंद्र बनाया।
- **SpaceX built its brand on Mars**, using Mars timelines to **signal ambition, attract talent, and keep attention on Starship**.
स्पेसएक्स ने मंगल पर ब्रांड बनाया, मंगल समयसीमा से महत्वाकांक्षा दिखाने, प्रतिभा आकर्षित करने और स्टारशिप पर ध्यान बनाए रखने के लिए।
- Internally, however, **SpaceX has long worked on moon-related projects via NASA contracts**.
लेकिन अंदरूनी तौर पर स्पेसएक्स लंबे समय से नासा अनुबंधों के तहत चंद्र परियोजनाओं पर काम कर रहा था।
- Now **internal and external narratives are aligned**, acknowledging the **next major milestone is a lunar landing, with Mars later**.
अब आंतरिक और बाहरी कथा मेल खा रही है, और स्वीकार किया गया है कि अगला बड़ा लक्ष्य चंद्र लैंडिंग है, जबकि मंगल बाद में।

Political and geopolitical pressure

राजनीतिक और भूराजनीतिक दबाव

- Delays in **NASA Artemis schedule**, tougher **political oversight**, and rising **geopolitical competition** pushed NASA to emphasise a **moon-first agenda**.
नासा आर्टेमिस कार्यक्रम में देरी, सख्त राजनीतिक निगरानी, और बढ़ती भूराजनीतिक प्रतिस्पर्धा ने नासा को पहले चंद्रमा एजेंडा पर जोर देने को मजबूर किया।
- U.S. lawmakers, especially **Senate committees**, pressed NASA leaders to show how they would **beat China in returning to the moon**.
अमेरिकी सांसदों, विशेषकर सीनेट समितियों, ने नासा नेताओं पर दबाव डाला कि वे चंद्रमा पर वापसी में चीन को कैसे पीछे छोड़ेंगे।
- Under this pressure, **NASA likely signalled to contractors that lunar milestones would define success** for now.
इस दबाव में नासा ने संभवतः ठेकेदारों को संकेत दिया कि फिलहाल सफलता का मापदंड चंद्र उपलब्धियाँ होंगी।

GS Paper III: Environment,

TOPICS COVERED

11 February 2026

1. **Global warming and pollution are stripping vibrant colours from nature**
वैश्विक ऊष्मीकरण और प्रदूषण प्रकृति के जीवंत रंगों को छीन रहे हैं
2. **Major bleaching hits half of world's coral reefs: study**
अध्ययन: विश्व की आधी प्रवाल भित्तियों पर व्यापक विरंजन का प्रभाव



Global warming and pollution are stripping vibrant colours from nature

Climate change is turning seas greener, forests browner and coral reefs whiter; as habitats grow warmer and more polluted, insects and birds are altering their pigmentation, reshaping how they adapt to their surroundings, tolerate heat and even how successfully they mate

GS III: Environment

Nivedita S.
CHENNAI

The colours of the natural world are not what they once were. More than half of the oceans have become greener over the last 20 years, and forests are turning brown prematurely. Various species of flora and fauna have also been changing their colours to adapt to rising temperatures, loss of habitats, and pollution.

This ecological discoloration is a direct consequence of climate change.

Living creatures are coloured a certain way for their survival and reproductive needs. Colours help escape predators, attract mates, and manage heat, among other functions.

A study published in *Biodiversity and Conservation* found that rising deforestation in the Amazon is causing butterflies to lose their bright displays. Butterflies in areas with human disturbance also sported a less diverse palette on the wings than those in the deeper, untouched parts of the forest. The researchers also found that areas with large-scale deforestation lacked the most colourful butterflies: less bright butterflies were able to camouflage better to escape predators and adapt to the loss of natural vegetation.

Becoming lighter

These changes echo one during the Industrial Revolution, when engine smoke and soot darkened the barks of trees and rendered the natural camouflage of lighter peppered moths ineffective. Over time, the darker peppered moths – which used to be rare – became more common in urban areas.

"In theory, the main adaptive pattern of colour change in relation to global warming would be a reduction in the deposition of melanin pigments," Kaspar Delhey, an ornithologist at the Monash University, told *The Hindu*.

Eumelanin produces dark brown/black shades and pheomelanin produces yellow and red hues. They are the two main types of melanin pigments in animals. When their bodies produce less melanin, they become lighter.

In a 2024 study in *Ecology and Evolution*, scientists also reported that several insects, including ladybirds and dragonflies, in the temperate northern hemisphere are turning lighter due to frequent heatwaves.

"Colour changes can have clear thermoregulatory benefits: lighter colour under warmer conditions can prevent overheating and allow insects to remain active for longer periods, while darker insects heat up faster in colder regions," Md Tangidul Haque, researcher at Macquarie University and one of the authors of the study, said.



Grim shades: Coral bleaching seen in formations along the Great Barrier Reef off Australia. AFP

The finding is in line with Bogert's rule: that animals in colder regions will be lighter. It is mainly applicable to cold-blooded animals. On the other hand, Gloger's rule applies to warm-blooded creatures, saying animals are darker in areas with high humidity and rainfall and lighter in colder, drier regions.

In a 2024 study in *Molecular Ecology*, scientists found that, thanks to milder winters, the brown morph of the tawny owl was found to be more dominant than the grey one in Europe. This was because the darker colour protected better against UV radiation.

Aside from climate change, rapid urbanisation and pollution are changing colours in the wild. In a 2024 study of 547 bird species in China, scientists found those in cities were darker and duller while rural areas abounded (relatively) in the more colourful birds. The authors speculated that heavy metals like lead could bind with melanin to produce darker plumage in urban areas.

Changes in pigments of plants also affect animals. Carotenoids afford plants red, yellow, and orange hues, and draw animals to consume them. Scientists have noticed that urban plants produce this pigment less. A 2020 study in *Current Biology* reported that flowers were altering their UV-related pigments to prevent being damaged by sunlight. These pigments are not visible to the human eye; they are intended for pollinators instead, and by changing them the plants could become less 'attractive'.

"Colour changes that improve survival

The changes echo one during the Industrial Revolution, when engine smoke and soot darkened the barks of trees and rendered the natural camouflage of lighter peppered moths ineffective, leading to the darker peppered, moths, which used to be rare, becoming more common

might reduce mating success or involve other fitness costs," Dr. Haque said. This affects reproduction in particular, with animals shifting their courtship timing to cooler periods, he added.

'Underwater forest'

A striking example of ecological discoloration in India is underwater. In February 2025, scientists reported coral bleaching events in the Gulf of Mannar, Palk Bay, Lakshadweep, Andaman and Nicobar Islands, and the Gulf of Kachchh. When corals suffer heat stress, they expel symbiotic algae and turn white. Such bleached corals face a higher risk of starvation and disease.

"A healthy coral reef is like an underwater forest," Thinesh T., assistant professor at Sultan Qaboos University in Oman and one of the authors of the study, said. "When corals bleach or die, reefs lose their complex structure that provides shelter and breeding areas for many marine organisms. Fish and invertebrate populations decline, while algae and other stress-tolerant organisms often take over. This reduces biodiversity and

disrupts the balance of the marine ecosystem,"

A burgeoning population of algae is also rendering the oceans greener. "Algal blooms can reduce water clarity and block sunlight, making it harder for corals and seagrasses to photosynthesize. When blooms die and decompose, they can also lower oxygen levels in the water, harming fish and other marine life," Dr. Thinesh said.

A positive effect

Given the cascading effects of colours, minimising their change has become an important thrust of climate action. However, experts have flagged a large knowledge gap thanks to a lack of studies in the southern hemisphere and tropical areas and that large geographic surveys are required to establish the current trends.

"By successfully implementing strategies from both field- and lab-based monitoring, we can guide interventions; for example, preserving microhabitats such as shaded areas may help dark-coloured insects avoid overheating," Dr. Haque said.

On the bright side, the study in the Amazon also found that forest areas that had regenerated naturally had a positive effect on the colours of butterfly species. In India, experts have said, regulating coastal development, improving water quality, and tracking stress indicators will minimise coral bleaching. Put another way, it is still not too late to restore the world its true colours. (nivedita_s@thehindu.co.in)

THE GIST

Aside from climate change, rapid urbanisation and pollution are changing colours in the wild

A 2024 study in *Ecology and Evolution* reported that insects, including ladybirds and dragonflies, in the temperate northern hemisphere are turning lighter due to frequent heatwaves

A striking example of ecological discoloration in India is underwater, where coral bleaching events are posing an existential threat to a vibrant ecosystem

On the bright side, a study in the Amazon found that forest areas that had regenerated naturally had a positive effect on the colours of butterfly species

Global warming and pollution are stripping vibrant colours from nature वैश्विक ऊष्मीकरण और प्रदूषण प्रकृति के जीवंत रंगों को छीन रहे हैं

- **Climate change** is turning seas **greener**, forests **browner** and coral reefs **whiter**; as habitats grow **warmer** and more **polluted**, insects and birds are altering their **pigmentation**, reshaping how they adapt to their surroundings, tolerate **heat** and even how successfully they **mate**

जलवायु परिवर्तन समुद्रों को अधिक हरा, जंगलों को अधिक भूरा और प्रवाल भित्तियों को अधिक सफेद बना रहा है; जैसे-जैसे आवास अधिक गर्म और अधिक प्रदूषित होते जा रहे हैं, कीट और पक्षी अपनी रंगत (पिगमेंटेशन) बदल रहे हैं, जिससे वे अपने परिवेश के अनुकूल ढलने, गर्मी सहने और यहां तक कि सफलतापूर्वक प्रजनन करने के तरीके को पुनः आकार दे रहे हैं



The colours of the natural world प्राकृतिक दुनिया के रंग

- The **colours** of the **natural world** are not what they once were.
प्राकृतिक दुनिया के **रंग** अब पहले जैसे नहीं रहे।
- More than half of the **oceans** have become **greener** over the last **20 years**, and **forests** are turning **brown** prematurely.
पिछले **20 वर्षों** में आधे से अधिक **महासागर** अधिक **हरे** हो गए हैं, और **वन** समय से पहले **भूरे** हो रहे हैं।
- Various species of **flora and fauna** have also been changing their **colours** to adapt to **rising temperatures, loss of habitats, and pollution**.
विभिन्न **वनस्पति और जीव** प्रजातियाँ भी **बढ़ते तापमान, आवास की हानि और प्रदूषण** के अनुसार अपने **रंग** बदल रही हैं।
- This **ecological discoloration** is a direct consequence of **climate change**.
यह **पारिस्थितिक रंग-परिवर्तन** सीधे **जलवायु परिवर्तन** का परिणाम है।
- Living creatures are coloured a certain way for their **survival and reproductive needs**.
जीवित प्राणी अपने **जीवन-रक्षा और प्रजनन आवश्यकताओं** के लिए एक विशेष प्रकार के **रंग** रखते हैं।
- Colours help **escape predators, attract mates, and manage heat**, among other functions.
रंग शिकारियों से बचने, साथी को आकर्षित करने और ऊष्मा नियंत्रण में मदद करते हैं।
- A study published in **Biodiversity and Conservation** found that rising **deforestation in the Amazon** is causing **butterflies** to lose their **bright displays**.
Biodiversity and Conservation में प्रकाशित एक अध्ययन ने पाया कि **अमेज़न में बढ़ती वनों की कटाई** के कारण **तितलियाँ** अपनी **चमकदार रंगत** खो रही हैं।
- Butterflies in areas with **human disturbance** also sported a **less diverse palette** on the wings than those in the deeper, **untouched parts of the forest**.
मानवीय हस्तक्षेप वाले क्षेत्रों की **तितलियों** के पंखों पर **कम विविध रंग** पाए गए, जबकि **अछूते जंगलों** में यह अधिक थे।
- The researchers also found that areas with **large-scale deforestation** lacked the most **colourful butterflies**: less bright butterflies were able to **camouflage better** to escape predators and adapt to the loss of **natural vegetation**.
शोधकर्ताओं ने पाया कि **बड़े पैमाने पर वनों की कटाई** वाले क्षेत्रों में सबसे **रंगीन तितलियाँ** नहीं थीं: कम चमकीली तितलियाँ **बेहतर छिपाव** कर सकतीं और **प्राकृतिक वनस्पति की हानि** के अनुसार ढल गईं।

Becoming lighter हल्का होना

- These changes echo one during the **Industrial Revolution**, when **engine smoke and soot** darkened the **barks of trees** and rendered the natural **camouflage** of lighter **peppered moths** ineffective.
ये परिवर्तन **औद्योगिक क्रांति** की याद दिलाते हैं, जब **इंजन का धुआँ और कालिख** ने **पेड़ों की छाल** को गहरा कर दिया और **हल्के रंग के peppered moths** का प्राकृतिक **छिपाव** बेअसर हो गया।
- Over time, the darker **peppered moths** — which used to be rare — became more **common in urban areas**.
समय के साथ गहरे रंग के **peppered moths**, जो पहले दुर्लभ थे, **शहरी क्षेत्रों** में अधिक **सामान्य** हो गए।
- “In theory, the main adaptive pattern of **colour change** in relation to **global warming** would be a reduction in the deposition of **melanin pigments**,” **Kaspar Delhey**, an ornithologist at the **Monash University**, told The Hindu.
“सिद्धांततः, **वैश्विक ऊष्मीकरण** के संदर्भ में **रंग परिवर्तन** का मुख्य अनुकूलन पैटर्न **मेलानिन पिगमेंट** के जमाव में कमी होगा,” **Monash University** के पक्षी-विज्ञानी **Kaspar Delhey** ने कहा।
- Eumelanin produces **dark brown/black shades** and pheomelanin produces **yellow and red hues**.
यूमेलानिन **गहरे भूरे/काले रंग** बनाता है और फेओमेलानिन **पीले और लाल रंग** उत्पन्न करता है।
- They are the **two main types of melanin pigments** in animals.
ये जानवरों में **मेलानिन पिगमेंट** के दो मुख्य प्रकार हैं।
- When their bodies produce **less melanin**, they become **lighter**.
जब उनके शरीर में **कम मेलानिन** बनता है, तो वे **हल्के रंग** के हो जाते हैं।



- In a 2024 study in **Ecology and Evolution**, scientists also reported that several **insects**, including **ladybirds and dragonflies**, in the **temperate northern hemisphere** are turning **lighter** due to **frequent heatwaves**.
2024 में **Ecology and Evolution** में प्रकाशित अध्ययन में वैज्ञानिकों ने बताया कि **समशीतोष्ण उत्तरी गोलार्ध** के कई **कीट**, जैसे **लेडीबर्ड और ड्रैगनफ्लाई**, **बार-बार हीटवेव** के कारण **हल्के रंग** के हो रहे हैं।
- “Colour changes can have clear **thermoregulatory benefits**: lighter colour under **warmer conditions** can prevent **overheating** and allow insects to remain **active for longer periods**, while darker insects heat up faster in **colder regions**,” **Md Tangigul Haque**, researcher at **Macquarie University** and one of the authors of the study, said.
“रंग परिवर्तन के स्पष्ट **ऊष्मा-नियंत्रण लाभ** हो सकते हैं: **गर्म परिस्थितियों** में हल्का रंग **अत्यधिक गर्मी** से बचाता है और कीटों को **लंबे समय तक सक्रिय** रहने देता है, जबकि गहरे रंग के कीट **ठंडे क्षेत्रों** में जल्दी गर्म होते हैं,” **Macquarie University** के शोधकर्ता **Md Tangigul Haque** ने कहा।
- The finding is in line with **Bogert’s rule**: that animals in **colder regions** will be **darker** and those in **warmer regions** will be **lighter**.
यह निष्कर्ष **Bogert’s rule** के अनुरूप है: **ठंडे क्षेत्रों** के जानवर **गहरे** और **गर्म क्षेत्रों** के जानवर **हल्के रंग** के होते हैं।
- It is mainly applicable to **cold-blooded animals**.
यह मुख्य रूप से **शीत-रक्त वाले जानवरों** पर लागू होता है।
- On the other hand, **Gloger’s rule** applies to **warm-blooded creatures**, saying animals are **darker** in areas with **high humidity and rainfall** and **lighter** in **colder, drier regions**.
दूसरी ओर, **Gloger’s rule** **उष्ण-रक्त वाले जीवों** पर लागू होता है, जिसमें **अधिक आर्द्रता और वर्षा** वाले क्षेत्रों में जानवर **गहरे** और **ठंडे व शुष्क क्षेत्रों** में **हल्के** होते हैं।
- In a 2024 study in **Molecular Ecology**, scientists found that, thanks to **milder winters**, the **brown morph of the tawny owl** was more **dominant** than the **grey one** in **Europe**.
2024 में **Molecular Ecology** के अध्ययन में वैज्ञानिकों ने पाया कि **मृदु सर्दियों** के कारण **यूरोप** में **tawny owl का भूरा रूप** **ग्रे रूप** से अधिक **प्रमुख** हो गया।
- This was because the **darker colour** protected better against **UV radiation**.
ऐसा इसलिए क्योंकि **गहरा रंग UV विकिरण** से बेहतर सुरक्षा देता है।
- Aside from **climate change**, rapid **urbanisation and pollution** are changing colours in the wild.
जलवायु परिवर्तन के अलावा तेज़ **शहरीकरण और प्रदूषण** भी जंगली जीवों के रंग बदल रहे हैं।
- In a 2024 study of **547 bird species in China**, scientists found those in **cities** were **darker and duller** while **rural areas** had relatively more **colourful birds**.
2024 में **चीन की 547 पक्षी प्रजातियों** पर अध्ययन में पाया गया कि **शहरों** के पक्षी **अधिक गहरे और फीके** थे, जबकि **ग्रामीण क्षेत्रों** में अपेक्षाकृत अधिक **रंगीन पक्षी** थे।
- The authors speculated that **heavy metals like lead** could bind with **melanin** to produce **darker plumage** in urban areas.
लेखकों ने अनुमान लगाया कि **सीसा जैसे भारी धातु मेलानिन** से जुड़कर शहरी क्षेत्रों में **अधिक गहरे पंख** बना सकते हैं।

Changes in pigments of plants also affect animals पौधों के पिगमेंट में परिवर्तन जानवरों को भी प्रभावित करते हैं

- Carotenoids** give plants **red, yellow, and orange hues**, and draw animals to **consume them**.
कैरोटेनॉइड्स पौधों को **लाल, पीले और नारंगी रंग** देते हैं और जानवरों को **उन्हें खाने** के लिए आकर्षित करते हैं।
- Scientists noticed that **urban plants** produce this pigment **less**.
वैज्ञानिकों ने पाया कि **शहरी पौधे** यह पिगमेंट **कम** बनाते हैं।
- A 2020 study in **Current Biology** reported that **flowers** were altering their **UV-related pigments** to prevent damage by **sunlight**.
2020 में **Current Biology** के अध्ययन में बताया गया कि **फूल UV-संबंधित पिगमेंट** बदल रहे हैं ताकि **सूर्य प्रकाश** से नुकसान न हो।
- These pigments are **not visible to the human eye**; they are intended for **pollinators**, and by changing them the plants could become less **attractive**.



ये पिगमेंट मानव आंखों से दिखाई नहीं देते; ये परागणकर्ताओं के लिए होते हैं और इन्हें बदलने से पौधे कम आकर्षक हो सकते हैं।

- “Colour changes that improve **survival** might reduce **mating success** or involve other **fitness costs**,” **Dr. Haque** said.
“जीवन-रक्षा बढ़ाने वाले रंग परिवर्तन प्रजनन सफलता कम कर सकते हैं या अन्य फिटनेस लागत ला सकते हैं,” **Dr. Haque** ने कहा।
- This affects **reproduction** in particular, with animals shifting their **courtship timing** to **cooler periods**, he added.
इससे विशेष रूप से प्रजनन प्रभावित होता है, जिसमें जानवर अपनी प्रणय समयावधि को ठंडे समय में स्थानांतरित करते हैं।

‘Underwater forest’ ‘पानी के नीचे का जंगल’

- A striking example of ecological **discolouration in India** is **underwater**.
भारत में पारिस्थितिक रंग परिवर्तन का एक प्रमुख उदाहरण समुद्र के नीचे है।
- In **February 2025**, scientists reported **coral bleaching events** in the **Gulf of Mannar, Palk Bay, Lakshadweep, Andaman and Nicobar Islands, and the Gulf of Kachchh**.
फरवरी 2025 में वैज्ञानिकों ने मन्नार की खाड़ी, पाल्क बे, लक्षद्वीप, अंडमान-निकोबार द्वीप और कच्छ की खाड़ी में कोरल ब्लीचिंग की घटनाएँ दर्ज कीं।
- When **corals suffer heat stress**, they expel **symbiotic algae** and turn **white**.
जब कोरल ऊष्मीय तनाव झेलते हैं, तो वे सहजीवी शैवाल को बाहर निकाल देते हैं और सफेद हो जाते हैं।
- Such **bleached corals** face higher risk of **starvation and disease**.
ऐसे ब्लिच कोरल को भुखमरी और रोग का अधिक खतरा होता है।
- “A healthy **coral reef** is like an **underwater forest**,” **Thinesh T.**, assistant professor at **Sultan Qaboos University**, said.
“एक स्वस्थ कोरल रीफ एक पानी के नीचे के जंगल जैसा है,” **Sultan Qaboos University** के **Thinesh T.** ने कहा।
- When corals **bleach or die**, reefs lose their **complex structure** that provides **shelter and breeding areas** for many marine organisms.
जब कोरल ब्लिच या मर जाते हैं, तो रीफ अपनी जटिल संरचना खो देते हैं जो कई समुद्री जीवों को आश्रय और प्रजनन क्षेत्र देती है।
- **Fish and invertebrate populations decline**, while **algae and stress-tolerant organisms** often take over.
मछलियों और अकशेरुकी जीवों की आबादी घटती है, जबकि शैवाल और तनाव-सहिष्णु जीव बढ़ जाते हैं।
- This reduces **biodiversity** and disrupts the **marine ecosystem balance**.
इससे जैव विविधता घटती है और समुद्री पारिस्थितिकी संतुलन बिगड़ता है।
- A growing population of **algae** is also making the **oceans greener**.
शैवाल की बढ़ती आबादी महासागरों को अधिक हरा बना रही है।
- **Algal blooms** can reduce **water clarity**, block **sunlight**, and hinder **photosynthesis** of corals and seagrasses.
शैवाल विस्फोट पानी की स्पष्टता घटाते हैं, सूर्य प्रकाश रोकते हैं और कोरल व समुद्री घास की प्रकाश संश्लेषण प्रक्रिया बाधित करते हैं।
- When blooms **die and decompose**, they lower **oxygen levels**, harming **fish and marine life**.
जब ये मरकर विघटित होते हैं, तो ऑक्सीजन स्तर घटाते हैं और मछलियों व समुद्री जीवन को नुकसान पहुँचाते हैं।

A positive effect एक सकारात्मक प्रभाव

- Given the cascading effects of **colours**, minimising their change is an important goal of **climate action**.
रंगों के व्यापक प्रभावों को देखते हुए, इनके परिवर्तन को कम करना जलवायु कार्रवाई का महत्वपूर्ण लक्ष्य है।
- Experts noted a **knowledge gap** due to lack of studies in the **southern hemisphere and tropical areas**, and need for **large geographic surveys**.



विशेषज्ञों ने दक्षिणी गोलार्ध और उष्णकटिबंधीय क्षेत्रों में अध्ययनों की कमी के कारण ज्ञान अंतर और विस्तृत भौगोलिक सर्वेक्षण की आवश्यकता बताई।

- “By implementing **field and lab monitoring strategies**, we can guide **interventions**, such as preserving **microhabitats** like shaded areas,” **Dr. Haque** said.
“**फील्ड और लैब निगरानी रणनीतियों** से हम हस्तक्षेप कर सकते हैं, जैसे **सूक्ष्म आवास** (छायादार क्षेत्र) को संरक्षित करना,” **Dr. Haque** ने कहा।
- On the bright side, regenerated **Amazon forests** had a **positive effect** on **butterfly colours**. सकारात्मक रूप से, पुनर्जीवित **अमेज़न वन** ने **तितलियों के रंगों** पर **अच्छा प्रभाव** डाला।
- In **India**, regulating **coastal development**, improving **water quality**, and tracking **stress indicators** can reduce **coral bleaching**.
भारत में तटीय विकास को नियंत्रित करना, जल गुणवत्ता सुधारना और तनाव संकेतकों की निगरानी कोरल ब्लीचिंग कम कर सकते हैं।
- It is still **not too late** to restore the world its **true colours**.
दुनिया को उसके **वास्तविक रंग** वापस दिलाने में अभी **देर नहीं हुई है।**

Major bleaching hits half of world's coral reefs: study

Agence France-Press
GS III: Environment
PARIS

A study published on Tuesday showed that more than half of the world's coral reefs were bleached between 2014-2017, a record-setting episode now being eclipsed by another series of devastating heatwaves.

The analysis concluded that 51% of the world's reefs endured moderate or worse bleaching while 15% experienced significant mortality over the three-year period known as the “Third Global Bleaching Event”.

It was “by far the most severe and widespread coral bleaching event on record”, said Sean Connolly, one the study's authors and a senior scientist at the Panama-based Smithsonian Tropical Research Institute. “And yet, reefs are currently experiencing an even more severe Fourth Event, which started in early 2023.”

When the sea overheats, corals eject microscopic algae that provides their distinct colour and food source. Unless ocean temperatures return to more tolerable levels, bleached corals are unable to recover and eventually die of starvation.

“Our findings demonstrate that the impacts of ocean warming on coral reefs are accelerating, with the near certainty that ongoing warming will cause large-scale, possibly irreversible, degradation of these essential ecosystems,” said the study in the journal *Nature Communications*.

The global scientific consensus is that most coral reefs would perish at warming of 1.5C above pre-industrial levels – the ambitious, long-term limit countries agreed to pursue under the 2015 Paris climate accord. Global temperatures exceeded 1.5C on average between 2023-2025, the European Union's climate monitoring service, Copernicus, said last month.

भी, भित्तियां वर्तमान में एक और भी अधिक गंभीर चौथी घटना का अनुभव कर रही हैं, जो 2023 की शुरुआत में शुरू हुई।”

- When the sea overheats, corals eject microscopic algae that provide their distinct colour and food source. Unless ocean temperatures return to more tolerable levels, bleached corals are

Major bleaching hits half of world's coral reefs: study

अध्ययन: विश्व की आधी प्रवाल भित्तियों पर व्यापक विरंजन का प्रभाव

• A



study published on Tuesday showed that more than half of the world's **coral reefs** were bleached between **2014-2017**, a record-setting episode now being eclipsed by

another series of devastating heatwaves.

मंगलवार को प्रकाशित एक अध्ययन में दिखाया गया कि **2014-2017** के बीच विश्व की आधी से अधिक **प्रवाल भित्तियां (कोरल रीफ्स)** विरंजित हो गई थीं, यह एक रिकॉर्ड स्थापित करने वाली घटना थी जिसे अब एक और विनाशकारी गर्मी की लहरों की श्रृंखला पीछे छोड़ रही है।

• The analysis concluded that **51%** of the world's reefs endured moderate or worse bleaching while **15%** experienced significant mortality over the three-year period known as the “**Third Global Bleaching Event**”.

विश्लेषण ने निष्कर्ष निकाला कि विश्व की **51%** भित्तियों ने मध्यम या उससे अधिक स्तर का विरंजन झेला, जबकि **15%** ने तीन वर्षीय अवधि के दौरान, जिसे “**तृतीय वैश्विक विरंजन घटना**” कहा जाता है, उल्लेखनीय मृत्यु दर का अनुभव किया।

• It was “by far the most severe and widespread coral bleaching event on record”, said **Sean Connolly**, one the study's authors and a senior scientist at the **Panama-based Smithsonian Tropical Research Institute**. “And yet, reefs are currently experiencing an even more severe Fourth Event, which started in early **2023**.”

यह “अब तक दर्ज की गई सबसे गंभीर और व्यापक प्रवाल विरंजन घटना थी,” अध्ययन के एक लेखक और **पनामा स्थित स्मिथसोनियन ट्रॉपिकल रिसर्च इंस्टीट्यूट** के वरिष्ठ वैज्ञानिक **सीन कॉनॉली** ने कहा। “और फिर



unable to recover and eventually die of starvation.

जब समुद्र अत्यधिक गर्म हो जाता है, तो प्रवाल सूक्ष्म शैवाल को बाहर निकाल देते हैं जो उन्हें विशिष्ट रंग और भोजन स्रोत प्रदान करता है। जब तक महासागर का तापमान अधिक सहनीय स्तर पर वापस नहीं आता, विरंजित प्रवाल पुनः स्वस्थ नहीं हो पाते और अंततः भूख से मर जाते हैं।

- “Our findings demonstrate that the impacts of ocean warming on coral reefs are accelerating, with the near certainty that ongoing warming will cause large-scale, possibly irreversible, degradation of these essential ecosystems,” said the study in the journal **Nature**

Communications.

पत्रिका **नेचर कम्युनिकेशंस** में प्रकाशित अध्ययन ने कहा, “हमारे निष्कर्ष दर्शाते हैं कि प्रवाल भित्तियों पर महासागरीय ऊष्मीकरण के प्रभाव तेज़ी से बढ़ रहे हैं, और लगभग निश्चित है कि जारी ऊष्मीकरण इन आवश्यक पारिस्थितिक तंत्रों का बड़े पैमाने पर, संभवतः अपरिवर्तनीय, क्षरण करेगा।”

- The global scientific consensus is that most coral reefs would perish at warming of **1.5C** above pre-industrial levels — the ambitious, long-term limit countries agreed to pursue under the **2015 Paris climate accord**. Global temperatures exceeded **1.5C** on average between **2023-2025**, the European Union’s climate monitoring service, **Copernicus**, said last month.

वैश्विक वैज्ञानिक सहमति है कि अधिकांश प्रवाल भित्तियां पूर्व-औद्योगिक स्तर से **1.5C** अधिक ऊष्मीकरण पर नष्ट हो जाएंगी — यह वह महत्वाकांक्षी, दीर्घकालिक सीमा है जिस पर देशों ने **2015 पेरिस जलवायु समझौते** के तहत सहमति जताई थी। यूरोपीय संघ की जलवायु निगरानी सेवा **कोपरनिकस** ने पिछले महीने कहा कि वैश्विक तापमान **2023-2025** के बीच औसतन **1.5C** से अधिक रहा।

GS Paper III: IS

TOPICS COVERED

11 February 2026

1. New beginnings

नई शुरुआत



GS II: IT New beginnings

The end of START should prompt discussions on wider and equal terms

In February 5, 2026, the 'New' Strategic Arms Reduction Treaty (START) expired. A symbol of an older era in global geopolitics, where the U.S. and the then Union of Soviet Socialist Republics were engaged in an escalating spiral of one-upmanship such as 'testing' mammoth nuclear weapons and space races, START represented a pivotal shift in how they approached nuclear competition – from unlimited accumulation towards negotiated reduction. It emerged from decades of arms control efforts and altered the trajectory of the Cold War's final years. The nuclear arms race that dominated the Cold War saw both superpowers accumulate massive arsenals. By the 1980s, they each possessed over 10,000 strategic nuclear warheads – the U.S. with a lopsided advantage. Earlier arms control measures such as the Strategic Arms Limitations Talks, in the 1970s, attempted to limit the growth of these arsenals, but were focused on capping numbers rather than reducing them. START I negotiations began in 1982 and proved complex. The treaty was not signed until July 1991, just months before the Soviet Union's collapse. It represented the first agreement between the superpowers to actually reduce strategic nuclear arsenals rather than merely limit their growth. The treaty required each side to cut strategic warheads to 6,000 and reduce delivery systems proportionally. This was a significant symbolic and practical achievement – each country would have roughly 30% fewer warheads than existing agreements permitted. Later agreements built on START's framework and reduced deployable warheads to 1,700-2,200 a side, and the New START Treaty (2010) limited each side to 1,550 deployed strategic warheads. Each represented further progress down from Cold War peaks. The New START, with its 15-year lifespan, ought to have been replaced with more ambitious outcomes. But given that global geopolitics seems to be receding into imperialist structures – mercantilist tariff systems and a craving for territories – it is unsurprising that arms-race doctrines too will be resuscitated. U.S. President Donald Trump has stated that any future arms control must include China, given its growing nuclear stockpile, signalling that the U.S. will not be bound by limits if other major powers (such as China) are free to build up theirs. The end of START may have serious consequences for global agreements, such as the Non-Proliferation Treaty and the Comprehensive Nuclear-Test-Ban Treaty. They are both noble in theory but the first is discriminatory in the way it seeks to rid the world of nuclear weapons. The end of START is an opportunity to restart discussion on more equal terms.

New beginnings नई शुरुआत

The end of START should prompt discussions on wider and equal terms

START का अंत व्यापक और समान शर्तों पर चर्चाओं को प्रेरित करना चाहिए

New Strategic Arms Reduction Treaty (START) expired न्यू स्ट्रैटेजिक आर्म्स रिडक्शन ट्रीटी (START) समाप्त

On February 5, 2026, the 'New' Strategic Arms Reduction Treaty (START) expired.

5 फरवरी 2026 को न्यू स्ट्रैटेजिक आर्म्स रिडक्शन ट्रीटी (START) समाप्त हो गई।

It was a symbol of an older era in global geopolitics, when the U.S. and the Union of Soviet Socialist Republics (USSR) were engaged in an escalating spiral of one-upmanship, including testing mammoth nuclear weapons and space races.

यह वैश्विक भू-राजनीति के पुराने युग का प्रतीक था, जब अमेरिका और सोवियत संघ (USSR) प्रतिस्पर्धा में लगे थे, जिसमें विशाल परमाणु हथियारों का परीक्षण और अंतरिक्ष दौड़ शामिल थे।

START represented a pivotal shift from unlimited accumulation of nuclear weapons towards negotiated reduction.

START ने असीमित संचय से वार्तात्मक कमी की ओर एक महत्वपूर्ण परिवर्तन दर्शाया।

It emerged from decades of arms control efforts and altered the trajectory of the Cold War's final years.

यह दशकों के हथियार नियंत्रण प्रयासों से उभरा और शीत युद्ध के अंतिम वर्षों की दिशा बदल दी।

The nuclear arms race of the Cold War saw both superpowers accumulate massive arsenals.

शीत युद्ध की परमाणु हथियार दौड़ में दोनों महाशक्तियों ने विशाल हथियार भंडार बनाए।

By the 1980s, each possessed over 10,000 strategic nuclear warheads, with the U.S. holding a lopsided advantage.

1980 के दशक तक दोनों के पास 10,000 से अधिक रणनीतिक परमाणु वारहेड थे, जिसमें अमेरिका को स्पष्ट बढ़त थी।

- Earlier measures like the Strategic Arms Limitation Talks (1970s) tried to limit growth of arsenals but focused on capping numbers, not reducing them.
पहले के प्रयास जैसे Strategic Arms Limitation Talks (1970s) ने हथियारों की वृद्धि सीमित करने की कोशिश की, लेकिन संख्या सीमित करने पर केंद्रित थे, कमी पर नहीं।
- START I negotiations began in 1982 and were highly complex.
START I वार्ता 1982 में शुरू हुई और अत्यंत जटिल थी।
- The treaty was signed in July 1991, just months before the collapse of the Soviet Union.
यह संधि जुलाई 1991 में हस्ताक्षरित हुई, सोवियत संघ के पतन से कुछ महीने पहले।
- It was the first agreement to actually reduce strategic nuclear arsenals rather than merely limit their growth.
यह पहली संधि थी जिसने वास्तव में रणनीतिक परमाणु हथियारों में कमी की, न कि केवल वृद्धि सीमित की।
- The treaty required each side to cut warheads to 6,000 and reduce delivery systems proportionally.
संधि के तहत प्रत्येक पक्ष को 6,000 वारहेड तक कमी और डिलीवरी सिस्टम में आनुपातिक कमी करनी थी।
- This meant roughly 30% fewer warheads than earlier permitted.
इसका अर्थ था पहले की तुलना में लगभग 30% कम वारहेड।
- Later agreements reduced deployable warheads to 1,700-2,200, and the New START Treaty (2010) limited each side to 1,550 deployed warheads.



बाद की संधियों ने वारहेड 1,700–2,200 तक घटाए और New START Treaty (2010) ने प्रत्येक पक्ष को 1,550 तैनात वारहेड तक सीमित किया।

- Each step represented continued decline from **Cold War peaks**.
हर चरण शीत युद्ध के चरम स्तर से निरंतर गिरावट दर्शाता है।
- The **New START, with a 15-year lifespan**, was expected to be replaced by a more ambitious treaty.

New START, जिसकी अवधि 15 वर्ष थी, को अधिक महत्वाकांक्षी संधि से बदलने की उम्मीद थी।

- However, global geopolitics appears to be shifting back towards **imperialist structures, mercantilist tariffs, and territorial ambitions**, reviving **arms-race doctrines**.
हालांकि, वैश्विक भू-राजनीति साम्राज्यवादी संरचनाओं, व्यापारिक टैरिफ और क्षेत्रीय महत्वाकांक्षाओं की ओर लौटती दिख रही है, जिससे हथियार दौड़ सिद्धांत फिर उभर रहे हैं।

- **U.S. President Donald Trump** stated future arms control must include **China**, due to its growing **nuclear stockpile**.

अमेरिकी राष्ट्रपति डोनाल्ड ट्रम्प ने कहा कि भविष्य के हथियार नियंत्रण में चीन को शामिल करना आवश्यक है, उसके बढ़ते परमाणु भंडार के कारण।

- This signals the **U.S.** may not remain bound by limits if other powers build up their arsenals.
यह संकेत देता है कि यदि अन्य शक्तियाँ अपने हथियार बढ़ाती हैं, तो अमेरिका सीमाओं से बंधा नहीं रहेगा।
- The **end of START could affect global treaties like the Non-Proliferation Treaty (NPT) and Comprehensive Nuclear-Test-Ban Treaty (CTBT)**.

START का अंत **NPT** और **CTBT** जैसे वैश्विक समझौतों को प्रभावित कर सकता है।

- Both are noble in theory, but the **NPT** is considered **discriminatory** in how it seeks a nuclear-free world.

दोनों सिद्धांत रूप में श्रेष्ठ हैं, लेकिन **NPT** को परमाणु-मुक्त विश्व के संदर्भ में **भेदभावपूर्ण** माना जाता है।

- The end of START offers a chance to restart negotiations on **more equal terms**.

START का अंत **अधिक समान शर्तों** पर नई वार्ता का अवसर देता है।