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DAILY CURRENT AFFAIRS

THE HINDU NEWSPAPER

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PCS Special:	05 August
05A8	Educationist and ex-Governor of Bihar D.Y. Patil dies at 90 शिक्षाविद् एवं बिहार के पूर्व राज्यपाल डी.वाई. पाटिल का 90 वर्ष की आयु में निधन
05A8	QUIZ
05A8	U.S. has used virtually all of its precision missiles during Iran war अमेरिका ने ईरान युद्ध के दौरान अपने लगभग सभी सटीक प्रहार करने वाले मिसाइलों का उपयोग कर लिया है



Educationist and ex-Governor of Bihar D.Y. Patil dies at 90

PCS
The Hindu Bureau
MUMBAI

Educationist D.Y. Patil, a Padma Shri awardee and former Governor of Tripura, Bihar, and West Bengal, passed away on Tuesday in Kolhapur, Maharashtra, at the age of 90 due to age-related health complications.

His final rites will be held with full state honours at the D.Y. Patil Medical College in Kolhapur at 5.00 p.m. on Wednesday after a public viewing in the morning followed by a funeral procession.

An active member of Maharashtra politics, Dnyandeo Yashwantrao Patil served as the Mayor of Kolhapur from 1957 to 1962, and was a Congress MLA from 1967 to 1978. He founded the D.Y. Patil Group, establishing an expansive network of over



D.Y. Patil

182 institutes, seven universities, and premier healthcare systems across India.

Prime Minister Narendra Modi shared his condolences on the education reformer's passing, saying that "he always worked to improve the lives of others, especially the poor...My thoughts are with his family in this sad hour".

Leader of Opposition in the Lok Sabha, Rahul Gandhi, also expressed his condolences.

स्वास्थ्य सेवाओं का व्यापक नेटवर्क विकसित किया गया।

05A8. Educationist and ex-Governor of Bihar D.Y. Patil dies at 90

शिक्षाविद् एवं बिहार के पूर्व राज्यपाल डी.वाई. पाटिल का 90 वर्ष की आयु में निधन

- Educationist D.Y. Patil, a Padma Shri awardee and former Governor of Tripura, Bihar, and West Bengal, passed away on Tuesday in Kolhapur, Maharashtra, at the age of 90 due to age-related health complications.

शिक्षाविद् डी.वाई. पाटिल, जो पद्म श्री सम्मान से सम्मानित थे तथा त्रिपुरा, बिहार और पश्चिम बंगाल के पूर्व राज्यपाल रहे, उनका मंगलवार को महाराष्ट्र के कोल्हापुर में आयु-संबंधी स्वास्थ्य जटिलताओं के कारण 90 वर्ष की आयु में निधन हो गया।

- An active member of Maharashtra politics, Dnyandeo Yashwantrao Patil served as the Mayor of Kolhapur from 1957 to 1962, and was a Congress MLA from 1967 to 1978.

महाराष्ट्र की राजनीति के सक्रिय सदस्य ज्ञानदेव यशवंतराव पाटिल ने 1957 से 1962 तक कोल्हापुर के महापौर के रूप में कार्य किया तथा 1967 से 1978 तक कांग्रेस विधायक रहे।

- He founded the D.Y. Patil Group, establishing an expansive network of over 182 institutes, seven universities, and premier healthcare systems across India.

उन्होंने डी.वाई. पाटिल समूह की स्थापना की, जिसके अंतर्गत 182 से अधिक संस्थान, सात विश्वविद्यालय तथा भारत भर में प्रमुख

Questions and answers to the previous day's daily quiz: 1. Of the 122 athletes who represented India, 38 returned with 39 medals with one of them getting two (a silver and bronze). Name this champion. **Ans: Gulveer Singh**
2. In para athletics, six medals came from three events thanks to three double podiums of which two were a top-two finish. Name the events. **Ans: Women's and men's shot put F57 and the men's 100m T47**
3. Name the first medallist and the first to strike gold for India at the Games. **Ans: Jhandu Kumar (para powerlifting) and Mirabai Chanu (weightlifting)**
4. Apart from boxing, India won two gold medals in this sport, for the first-ever such success for the country at the Games. **Ans: Judo through Asmita Dey and Harsh Singh**
5. Name the compatriots of Neeraj Chopra and Praveen Chithravel who claimed bronze when the duo won silver in their disciplines. **Ans: Yash Vir Singh (javelin) and Selva Prabhu (triple jump)**
6. This gold medallist was the flag-bearer at the Closing Ceremony of the Games. **Ans: Jaismine Lamboria**
7. The youngest member of India's contingent also brought the curtains down on India's campaign. Name the teenager. **Ans: Lisha Das**
Visual: Name this athlete who won his event with a Games record. **Ans: Dilip Mahadu Gavit**
Early bird: Prem Raj P.

05A8. QUIZ

1. Gulveer Singh — India's Double Medallist

- Gulveer Singh was the only Indian athlete to win two medals at the 2026 Commonwealth Games in Glasgow.
- He secured the silver medal in the men's 10,000 metres, becoming the first Indian to win a Commonwealth Games medal in that event.
- He subsequently won the bronze medal in the men's 5,000 metres.
- Consequently, although 38 Indian athletes reached the podium, India won 39 medals because Gulveer contributed two.

2. Three Para-Athletics Events Producing Double Podiums

- India secured six para-athletics medals through double podium finishes in three events.



- These events were the **women's shot put F57**, **men's shot put F57**, and **men's 100 metres T47**.
- In two of these events, Indian athletes claimed both the **gold and silver medals**, producing top-two finishes.
- The classification **F57** applies to field athletes with specified lower-limb impairments who generally compete from a seated position.
- The **T47** classification covers track athletes with an upper-limb impairment.

3. Jhandu Kumar and Mirabai Chanu

- **Jhandu Kumar** won India's first medal of the Games by securing **bronze in the men's heavyweight para-powerlifting event**.
- He registered a best successful lift of **190 kilograms**.
- **Mirabai Chanu** subsequently became India's first gold medallist at Glasgow 2026 by winning the **women's 48-kilogram weightlifting event on 26 July 2026**.
- Her victory represented her **third consecutive Commonwealth Games title** and fourth Commonwealth Games medal overall.

4. India's Historic Judo Gold Medals

- India won its first-ever Commonwealth Games judo gold medals through **Asmita Dey** and **Harsh Singh**.
- **Asmita Dey** defeated Canada's **Heidi Quach** in the **women's -48 kg final**, becoming India's first female Commonwealth judo champion.
- Soon afterwards, **Harsh Singh** defeated Australia's **Joshua Katz** in the **men's -60 kg final**.
- Their victories gave India two judo gold medals during the same competition.
- **Yamini Mourya** added a silver medal in the women's -57 kg category.
- Therefore, apart from boxing, judo was the other sport in which India collected multiple gold medals.

5. Yash Vir Singh and Selva Prabhu

- **Yash Vir Singh** won the bronze medal in the men's javelin throw when **Neeraj Chopra** secured silver in the same event.
- Yash Vir's podium finish ensured that India had two athletes among the medallists in the javelin competition.
- Similarly, **Selva Prabhu** claimed bronze in the men's triple jump, while fellow Indian **Praveen Chithravel** won the silver medal.
- These double-podium performances reflected India's increasing depth in technical athletics disciplines.

6. Jaismine Lamboria — Closing-Ceremony Flag-Bearer

- Gold-medallist boxer **Jaismine Lamboria** was selected as India's flag-bearer for the **Closing Ceremony** of the 2026 Commonwealth Games.
- She won the women's **57 kg boxing gold medal** after defeating Northern Ireland's **Michaela Walsh** in the final.
- Jaismine had previously won a Commonwealth Games bronze medal in 2022 and represented India at the **Paris 2024 Olympic Games**.

7. Lisha Das — Youngest Member of the Contingent

- **Lisha Das**, a **16-year-old para-cyclist from Assam**, was the youngest member of India's Glasgow 2026 contingent.
- She participated in the **women's C4-C5 para-track cycling events**.

- Lisha finished sixth in the **1,000-metre time trial**, which was India's final competitive event at the Games.

8. Visual Answer: Dilip Mahadu Gavit

- Dilip Mahadu Gavit**, an Indian para-athlete from **Maharashtra**.
- He **won the men's 100 metres T47 gold medal** at the 2026 Commonwealth Games.
- Gavit completed the race in a **Commonwealth Games record time**, giving India an important para-athletics title.
- His compatriot **Mohammed Basil Morssinganakathi** secured the silver medal, creating an Indian one-two finish.
- The **T47 classification** principally includes athletes with an upper-limb impairment affecting running mechanics.
- Gavit had earlier won the men's T47 400 metres at the **2022 Asian Para Games**, contributing India's historic 100th medal there.

'U.S. has used virtually all of its precision missiles during Iran war'

The missiles are principally the Army's surface-to-surface weapons, known as Army Tactical Missile Systems (ATACMS) and Precision Strike Missiles (PrSM); CENTCOM has reloaded the munitions from U.S. military supplies elsewhere in the world

PCS
Reuters
NEW YORK/WASHINGTON

The U.S. Army has used up much of its stockpile of highly accurate long-range missiles during its five-month war with Iran, according to three people familiar with the data, raising concerns about the military's readiness for future conflicts.

The missiles are principally the Army's surface-to-surface weapons, known as Army Tactical Missile Systems (ATACMS) and Precision Strike Missiles (PrSM). The U.S. has used "virtually all" of these weapons, according to two



The U.S. Army conducting live fire tests of the Army Tactical Missile Systems at the White Sands Missile Range in New Mexico. AFP

of the sources.

The long-range munitions – which cost more than \$1 million each – are an important part of the

military's arsenal, allowing accurate strikes from a safe distance.

U.S.-supplied ATACMS have played a key role in

the war in Ukraine, allowing Ukrainian forces to attack targets inside Russia. The PrSM is a newer, more advanced generation that will replace the ATACMS, which have a shorter range.

Dramatic fall

The dramatic rundown in precision, long-range missiles means U.S. President Donald Trump may have to rely more on riskier, piloted bombing missions if he relaunched large-scale attacks on Iran.

As the war drags on, the three people familiar with the matter expressed worry that the falling missile

supplies could limit the U.S. ability to deter adversaries, including Russia and China. A fourth person familiar with the matter said that while Central Command – which oversees U.S. forces in West Asia – has nearly used up the land-based missiles it had before the war began, it has been able to reload from U.S. military supplies elsewhere in the world.

Asked for comment on the stockpile data, the White House issued a statement from Mr. Trump, saying the U.S. had "far more munitions than anyone in the world" and "far more than we need".

05A8. U.S. has used virtually all of its precision missiles during Iran war

अमेरिका ने ईरान युद्ध के दौरान अपने लगभग सभी सटीक प्रहार करने वाले मिसाइलों का उपयोग कर लिया है

- The **U.S. Army** has used up much of its stockpile of highly accurate **long-range missiles** during its **five-month** war with **Iran**, according to three people familiar with the data, raising concerns about the military's readiness for future conflicts.
आँकड़ों से परिचित तीन व्यक्तियों के अनुसार, अमेरिकी सेना ने ईरान के साथ चले पाँच माह के युद्ध के दौरान अपने अत्यधिक सटीक लंबी दूरी के मिसाइलों के भंडार का अधिकांश भाग उपयोग कर लिया है, जिससे भविष्य के संघर्षों के लिए सेना की तैयारी को लेकर चिंता उत्पन्न हुई है।
- The missiles are principally the **Army's surface-to-surface weapons**, known as **Army Tactical Missile Systems (ATACMS)** and **Precision Strike Missiles (PrSM)**.
ये मिसाइलें मुख्यतः सेना की भूमि से भूमि पर मार करने वाली प्रणालियाँ हैं, जिन्हें आर्मी टैक्टिकल मिसाइल सिस्टम (ATACMS) तथा प्रिसिजन स्ट्राइक मिसाइल (PrSM) के नाम से जाना जाता है।



- The **long-range munitions** — which cost more than **\$1 million** each — are an important part of the military's arsenal, allowing accurate strikes from a safe distance.
ये लंबी दूरी के आयुध, जिनकी प्रत्येक इकाई की लागत **10 लाख अमेरिकी डॉलर** से अधिक है, सैन्य शस्त्रागार का महत्वपूर्ण हिस्सा हैं और सुरक्षित दूरी से सटीक प्रहार करने की क्षमता प्रदान करते हैं।
- The **PrSM** is a newer, more advanced generation that will replace the **ATACMS**, which have a shorter range.
PrSM नई और अधिक उन्नत पीढ़ी की मिसाइल है, जो कम दूरी वाली **ATACMS** प्रणाली का स्थान लेगी।

GS Paper 1: Society	05 August 2026
TOPICS COVERED	
05A8	Questions for Phase 2 of Census likely to be out soon जनगणना के चरण-2 के प्रश्न शीघ्र जारी होने की संभावना

Questions for Phase 2 of Census likely to be out soon

GS I: Society
Vijanta Singh
NEW DELHI

The questions for the second phase of the Population Census 2027 are likely to be notified next week, days before the exercise, which will reveal how caste is to be enumerated in Independent India, begins on August 17 in Ladakh and snow-bound areas of Jammu and Kashmir, Himachal Pradesh and Uttarakhand, ahead of the rest of the country where the exercise is to be held in February 2027. The caste of all residents is to be recorded during the Population Enumeration (PE) phase. The final questionnaire is likely to include 28 questions.

Until now, only the Scheduled Caste (SC) and Scheduled Tribe (ST) were being enumerated during the Census exercise.

05A8. Questions for Phase 2 of Census likely to be out soon जनगणना के चरण-2 के प्रश्न शीघ्र जारी होने की संभावना

- The **caste** of all residents is to be recorded during the **Population Enumeration (PE)** phase.
जनसंख्या गणना (पीई) चरण के दौरान सभी निवासियों की जाति दर्ज की जाएगी।
- The final questionnaire is likely to include **28 questions**.
अंतिम प्रश्नावली में **28 प्रश्न** शामिल होने की संभावना है।
- Until now, only the **Scheduled Caste (SC)** and **Scheduled Tribe (ST)** were being enumerated during the **Census** exercise.
अब तक **जनगणना** के दौरान केवल **अनुसूचित जाति (एससी)** और **अनुसूचित जनजाति (एसटी)** की ही गणना की जाती थी।

GS Paper 1: Geography	05 August 2026
TOPICS COVERED	

Volcanic eruption



Smoke and fire: **Fuego, Central America's most active volcano, erupts in Alotenango, 65 km from Guatemala City**, on Tuesday. Guatemalan Authorities issued the country's second-highest emergency alert after the eruption, prompting the evacuation of nearby villages.

GS I: Geography
Smoke and fire: Fuego, Central America's most active volcano, erupts in Alotenango, 65 km from Guatemala City, on Tuesday. Guatemalan authorities issued the country's second-highest emergency alert after the eruption, prompting the evacuation of nearby villages. AFP

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GS Paper II: Governance		05 August 2026
TOPICS COVERED		
05A8	Top spot शीर्ष स्थान	
05A8	What can be done to curb 'paper leaks' and ensure institutional accountability? 'पेपर लीक' पर रोक लगाने और संस्थागत जवाबदेही सुनिश्चित करने के लिए क्या किया जा सकता है?	
05A8	FSSAI bans '100% pure' Dabur products, firm's share falls 4% एफएसएसआई ने '100% शुद्ध' दावों वाले डाबर उत्पादों पर रोक लगाई, कंपनी के शेयर में 4% की गिरावट	

GS II: Governance

Top spot

India needs to upgrade infrastructure, train coaches

One of the biggest impediments to India's aspiration to bid for the 2036 Olympics is the lack of enough world-class performers. For India, a prospective host, targeting a prestigious top-10 finish is a humongous task. In the 21st century, the country achieved its best-ever result of 48th with seven medals at the Tokyo Olympics in 2021 and was 71st with six medals at Paris 2024. India needs to win approximately 30 to 40 medals, including gold in double digits, to be in the elite club. To chase this Olympic dream, the Union Cabinet has approved an allocation of ₹29,054 crore — an eight-fold increase — for the new phase of the Khelo India Scheme. The primary goal of this ambitious grassroots programme is to tap talent early for the 2036 Olympics. It aims to increase Khelo India centres, State and National centres of excellence and accredited academies from roughly one per district — more than 1,000 centres at present — to an average of two or three. Involving schools and clubs, encouraging talented children to compete in club-level events, upgrading facilities, and assimilating grassroots-coaches and technical officials are essential ingredients of the wholesome scheme.

A novel concept of upgrading the knowledge of local coaches by helping them overcome the language barrier posed by English, the formation of a National Coach Accreditation Board to standardise coaching and better utilisation of physical education teachers are expected to impart correct training at the basic level. In sync with the National Education Policy, the Khelo India Feeder Schools and Khelo India Utkrishta Vidyalaya initiatives are designed to integrate education and sports. The existing Khelo India Athletes programme, with 2,904 athletes, and the new Emerging Khelo India Athletes initiative aim to expand the talent pool to around 28,000. Talent identification, digitisation of the sports ecosystem to maintain data on every athlete, and a bottom-to-top communication channel are its key components. The overall outlay, including assistance to National Sports Federations, stands at a staggering ₹36,441 crore for 2026-31. However, the biggest challenge will be effective and transparent implementation of the scheme. Enabling talent to graduate to the highest level, already backed by the Target Olympic Podium Scheme, with an eye on the 2036 Olympics and beyond will be crucial. The 2030 Commonwealth Games in Ahmedabad will be an immediate test. The other major hurdle for India's attempt to emerge as a sporting power is its dubious distinction as a doping hub. Strict anti-doping measures, promotion of a sports culture by maximising the scope of the Fit India Movement, and a focus on grassroots development must go hand-in-hand to achieve the desired results.

05A8. Top spot शीर्ष स्थान

- One of the biggest impediments to India's aspiration to bid for the 2036 Olympics is the lack of enough world-class performers.

भारत की 2036 ओलंपिक की मेजबानी के लिए बोली लगाने की आकांक्षा के समक्ष सबसे बड़ी बाधाओं में से एक पर्याप्त विश्वस्तरीय खिलाड़ियों का अभाव है।

- For India, a prospective host, targeting a prestigious top-10 finish is a humongous task. संभावित मेजबान भारत के लिए प्रतिष्ठित शीर्ष-10 स्थान प्राप्त करने का लक्ष्य अत्यंत विशाल कार्य है।

- In the 21st century, the country achieved its best-ever result of 48th with seven medals at the Tokyo Olympics in 2021 and was 71st with six medals at Paris 2024.

21वीं शताब्दी में देश ने 2021 के टोक्यो ओलंपिक में सात पदकों के साथ अपना सर्वश्रेष्ठ 48वाँ स्थान प्राप्त किया तथा पेरिस 2024 में छह पदकों के साथ 71वाँ स्थान हासिल किया।

- India needs to win approximately 30 to 40 medals, including gold in double digits, to be in the elite club.

भारत को श्रेष्ठ देशों के समूह में शामिल होने के लिए लगभग 30 से 40 पदक, जिनमें दो अंकों में स्वर्ण पदक शामिल हों, जीतने होंगे।

- To chase this Olympic dream, the Union Cabinet has approved an allocation of ₹29,054 crore — an eight-fold increase — for the new phase of the Khelo India Scheme.

इस ओलंपिक सपने को साकार करने के लिए केंद्रीय मंत्रिमंडल ने खेलो इंडिया योजना के नए चरण हेतु ₹29,054 करोड़ के आवंटन को स्वीकृति दी है, जो आठ गुना वृद्धि है।

- The primary goal of this ambitious grassroots programme is to tap talent early for the 2036 Olympics.

इस महत्वाकांक्षी जमीनी स्तर के कार्यक्रम का मुख्य उद्देश्य 2036 ओलंपिक के लिए प्रारंभिक अवस्था में प्रतिभाओं की पहचान करना है।

- It aims to increase Khelo India centres, State and National centres of excellence and accredited academies from roughly one per district — more than 1,000 centres at present — to an average of two or three.

इसका उद्देश्य खेलो इंडिया केंद्रों, राज्य एवं राष्ट्रीय उत्कृष्टता केंद्रों तथा मान्यता प्राप्त

अकादमियों की संख्या को वर्तमान में प्रति जिले लगभग एक — अर्थात् 1,000 से अधिक केंद्रों — से बढ़ाकर औसतन दो या तीन करना है।

- Involving **schools and clubs**, encouraging talented children to compete in **club-level events**, upgrading facilities, and assimilating **grassroot coaches and technical officials** are essential ingredients of the wholesome scheme.

विद्यालयों और क्लबों को शामिल करना, प्रतिभाशाली बच्चों को क्लब-स्तरीय प्रतियोगिताओं में भाग लेने के लिए प्रोत्साहित करना, सुविधाओं का उन्नयन करना तथा जमीनी स्तर के प्रशिक्षकों और तकनीकी अधिकारियों को जोड़ना इस समय योजना के आवश्यक घटक हैं।

- A novel concept of upgrading the knowledge of **local coaches** by helping them overcome the **language barrier** posed by **English**, the formation of a **National Coach Accreditation Board** to standardise coaching and better utilisation of **physical education teachers** are expected to impart correct training at the basic level.

स्थानीय प्रशिक्षकों को अंग्रेज़ी से उत्पन्न भाषाई बाधा दूर करने में सहायता देकर उनके ज्ञान का उन्नयन, प्रशिक्षण को मानकीकृत करने हेतु राष्ट्रीय कोच प्रत्यायन बोर्ड का गठन तथा शारीरिक शिक्षा शिक्षकों का बेहतर उपयोग आधारभूत स्तर पर सही प्रशिक्षण प्रदान करने की अपेक्षा रखते हैं।

- In sync with the **National Education Policy**, the **Khelo India Feeder Schools** and **Khelo India Utkrishta Vidyalaya** initiatives are designed to integrate **education and sports**.

राष्ट्रीय शिक्षा नीति के अनुरूप खेलो इंडिया फीडर स्कूल और खेलो इंडिया उत्कृष्ट विद्यालय पहले शिक्षा और खेल के एकीकरण के लिए तैयार की गई हैं।

- The existing **Khelo India Athletes** programme, with **2,904 athletes**, and the new **Emerging Khelo India Athletes** initiative aim to expand the talent pool to around **28,000**.

वर्तमान खेलो इंडिया एथलीट कार्यक्रम, जिसमें 2,904 खिलाड़ी शामिल हैं, तथा नई इमर्जिंग खेलो इंडिया एथलीट पहल का उद्देश्य प्रतिभाओं के समूह को लगभग 28,000 तक विस्तारित करना है।

- Talent identification, digitisation of the sports ecosystem** to maintain data on every athlete, and a **bottom-to-top communication channel** are its key components.

प्रतिभा पहचान, प्रत्येक खिलाड़ी का डेटा सुरक्षित रखने हेतु खेल पारिस्थितिकी तंत्र का डिजिटलीकरण, तथा निचले स्तर से शीर्ष स्तर तक संचार व्यवस्था इसके प्रमुख घटक हैं।

- However, the biggest challenge will be **effective and transparent implementation of the scheme**.

हालाँकि, सबसे बड़ी चुनौती इस योजना का प्रभावी और पारदर्शी क्रियान्वयन होगा।

- Strict anti-doping measures**, promotion of a **sports culture** by maximising the scope of the **Fit India Movement**, and a focus on **grassroots development** must go hand-in-hand to achieve the desired results.

वांछित परिणाम प्राप्त करने के लिए कठोर डोपिंग-रोधी उपाय, फिट इंडिया आंदोलन के दायरे का अधिकतम विस्तार कर खेल संस्कृति को बढ़ावा देना तथा जमीनी स्तर के विकास पर ध्यान समानांतर रूप से आगे बढ़ना आवश्यक है।



What can be done to curb 'paper leaks' and ensure institutional accountability?

Despite the Public Examinations (Prevention of Unfair Means) Act, 2024, the fundamental need to fix accountability for detecting examination breaches, preventing them and preserving the integrity of public examinations remains

GS II: Governance

Rajeev Kumar

N EET is one of India's highest-stakes examinations, where intense competition, immense social prestige, and the multi-crore value of a medical seat generate enormous academic, financial, and psychological pressure. Similar pressures surround other national admission, scholarship and recruitment examinations. In such an environment, paper leaks and other irregularities have repeatedly surfaced.

The controversies surrounding NEET-2024, UGC-NET 2024, and NEET-2026 triggered unprecedented national concern. UGC-NET 2024 was canceled and held again, while NEET 2026 was also re-conducted. All three were conducted by the National Testing Agency (NTA), which attributed these decisions to specific external or intelligence inputs.

The CBI investigated the NEET-2024 and UGC-NET 2024 cases. Although the investigations initially led to arrests and extensive nationwide media coverage, the CBI has since submitted closure reports in both cases, reportedly finding no prosecutable evidence of a conventional paper leak under the Bharatiya Nyaya Sanhita (BNS), 2023, or the Public Examinations Act (PEA), 2024. The NEET-2026 investigation remains in progress, with a chargesheet already filed.

These developments raise a more fundamental question: if repeated examination crises ultimately yield no prosecutable evidence of a conventional paper leak, what exactly constitutes a "paper leak"? Where do such compromises originate, and who is responsible for detecting, preventing, and being held accountable for them?

Defining a 'paper leak'

Traditionally, a "paper leak" refers to the unauthorised disclosure of a printed question paper before the examination, typically during printing, packaging, storage, or transportation. Investigation protocols, therefore, focus on tracing printed papers and recovering physical evidence. The recent Maharashtra Teachers Eligibility Test (TET) case is a classic example in which coded printed question papers were allegedly leaked from a compromised printing press.

High-stakes examinations, however, present a far more complex picture. Long before printing, questions pass through question-setting, moderation, translation, digitisation, and final compilation, where a limited number of individuals have privileged access. Compromises at any of these stages may never result in a leaked printed paper. Yet, it can selectively disclose questions or other confidential material, providing an unfair advantage to a few candidates before spreading through organised networks.

The NEET and UGC-NET controversies illustrate this distinction. Although investigations reportedly found no evidence of leaked printed papers in the 2024 cases, the examinations nevertheless led to arrests, cancellations, re-examinations, and a crisis of public confidence. Similarly, the circulation of highly targeted "guided papers" before NEET-2026 raised questions about whether confidential information had



Students entering an examination centre in Udupi during the NEET exam on June 21, 2026. FILE PHOTO

flowed through insider or informal networks despite the absence of any recovered printed paper.

Examination compromise may therefore involve far more than a printed paper: selected questions, question banks, recurring themes, high-probability question pools, examiner identities, confidential instructions, digital data, or administrative information may all be unlawfully disclosed through insider access, cyber intrusions, or coaching networks.

Restricting the definition of a "paper leak" to a leaked printed question paper overlooks these significant vulnerabilities. In this context, extraordinary measures such as transporting the re-NEET 2026 question papers by aircraft may secure the final logistical stage but do little to address vulnerabilities at the source. The real issue is whether confidential examination information was disclosed in any form that compromised the fairness, integrity, or credibility of the examination.

Other examination breaches

The integrity of an examination may be undermined equally by failures before, during, or after the examination, even when no printed paper is ever recovered.

NEET-2024 illustrates this broader spectrum. Reported irregularities included the distribution of an incorrect question paper, followed by its replacement; delayed collection or replacement of OMR sheets; exceptional grace marks; tie-breaking disputes; clustering of near-perfect scores; and unusually high scores from certain centres and coaching hubs. Collectively, these exposed weaknesses in examination management and institutional oversight.

Other breaches include cybersecurity failures, manipulation of candidate or examination data, disclosure of confidential information, compromised examination centres, impersonation, organised unfair means, and insider access or coaching-network access to privileged information.

Safeguarding public examinations,

therefore, requires securing the entire examination lifecycle – from question development to result processing.

Failures in the transport of printed question papers alone cannot explain many examination breaches. Critical processes—including question selection, paper allocation, examination-centre management, OMR handling, grace marks, result processing, cybersecurity, and access to confidential data—are controlled by the examination authority and its associated agencies. Irregularities at these stages naturally raise questions about institutional controls and insider vulnerabilities.

The NEET-2024 controversy illustrates this broader picture. Distribution of an incorrect question paper, delayed OMR handling, exceptional grace marks, unusually high scores from certain centres, and the circulation of highly targeted "guided papers" all point to vulnerabilities that extend beyond conventional paper leaks. Such patterns warrant scrutiny of repeated expert engagement, conflicts of interest, links to coaching ecosystems, and other insider risks. This does not imply that every irregularity results from insider misconduct. However, securing examinations requires protecting confidential information, institutional processes, and printed question papers alike.

Primary accountability

Preventing examination breaches cannot be left to the CBI, police, or courts, which act only after a crisis. Primary responsibility lies with the examination authority, supported by the Ministry of Education, intelligence, and cybersecurity agencies, and independent oversight.

Accountability should extend across the entire examination lifecycle – from the selection of question setters and translators to examination centres, digital systems, evaluation, and result processing. It requires rigorous antecedent verification, conflict-of-interest scrutiny, periodic

rotation of experts, cybersecurity audits, intelligence-based monitoring, and clear audit trails.

Official narrative and unanswered questions

The official response to the NEET-2024, UGC-NET 2024, and NEET-2026 controversies has largely rested on the absence of conclusive evidence of a conventional paper leak. Before the Supreme Court, the NTA attributed the cancellation and re-conduct of NEET-2026 to specific intelligence inputs, while the High-Powered Steering Committee emphasised compliance with its recommendations and SOPs. The CBI's investigations into NEET-2024 and UGC-NET 2024 resulted in closure reports, reportedly finding no prosecutable evidence of a paper leak and no basis to prosecute NTA officials. The NEET-2026 investigation, however, remains ongoing.

These official positions contrast sharply with the ground reality. Cancelled or re-conducted examinations, arrests, allegations of widely circulated "guided papers", cyber-security incidents, operational lapses, and disruptions affecting millions of candidates. In NEET-2026, official action reportedly followed a whistleblower's FIR rather than detection through the examination's own security or intelligence systems.

This raises an obvious question: if no credible abnormality was detected, what justified cancelling NEET-2026? Conversely, if credible intelligence existed, why did institutional safeguards fail to detect or prevent the compromise beforehand?

Until these questions are answered transparently, stronger logistics or harsher penal laws alone are unlikely to restore public confidence. The priority must shift from post-crisis response to institutional prevention.

The way forward

As its first task, the newly constituted committee headed by former UIDAI chairman Nandan Nilekani should prepare a comprehensive White Paper documenting the full spectrum of breaches in NEET-2024, UGC-NET 2024, and NEET-2026—covering leakages, operational failures, cybersecurity incidents, centre-level irregularities, investigations, judicial outcomes, and lessons learned.

The White Paper should underpin a Public Examination Integrity Framework (PEIF) for all major examination bodies. The Framework should prescribe standardised end-to-end SOPs covering the entire examination lifecycle, with an emphasis on conflict-of-interest management, expert selection, cybersecurity, examination administration, audit, and institutional accountability.

Ultimately, public confidence will be restored not by tougher laws or more post-facto investigations, but by an examination system that detects risks early, prevents breaches before they occur, and ensures institutional accountability.

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05A8. What can be done to curb 'paper leaks' and ensure institutional accountability?

‘पेपर लीक’ पर रोक लगाने और संस्थागत जवाबदेही सुनिश्चित करने के लिए क्या किया जा सकता है?

- Although the investigations initially led to arrests and extensive nationwide media coverage, the CBI has since submitted closure reports in both cases, reportedly finding no prosecutable evidence of a conventional **paper leak** under the **Bharatiya Nyaya Sanhita (BNS), 2023, or the Public Examinations Act (PEA), 2024**.
यद्यपि प्रारंभिक जाँच के दौरान गिरफ्तारियाँ हुईं और देशभर में व्यापक मीडिया कवरेज मिला, किंतु बाद में सीबीआई ने दोनों मामलों में समापन रिपोर्ट प्रस्तुत की, जिसमें कथित रूप से भारतीय न्याय संहिता (बीएनएस), 2023 अथवा लोक परीक्षा अधिनियम (पीईए), 2024 के अंतर्गत पारंपरिक पेपर लीक के अभियोजन योग्य प्रमाण नहीं पाए गए।
- These developments raise a more fundamental question: if repeated examination crises ultimately yield no prosecutable evidence of a conventional **paper leak**, what exactly constitutes a “**paper leak**”?
ये घटनाक्रम एक अधिक मूलभूत प्रश्न उठाते हैं कि यदि बार-बार परीक्षा संबंधी संकट उत्पन्न होने के बाद भी पारंपरिक पेपर लीक का अभियोजन योग्य प्रमाण नहीं मिलता, तो वास्तव में “पेपर लीक” किसे कहा जाएगा?

Defining a ‘paper leak’

‘पेपर लीक’ की परिभाषा

- Traditionally, a “**paper leak**” refers to the unauthorised disclosure of a printed question paper before the examination, typically during printing, packaging, storage, or transportation.
परंपरागत रूप से “पेपर लीक” का अर्थ परीक्षा से पूर्व मुद्रित प्रश्नपत्र का अनधिकृत रूप से सार्वजनिक हो जाना है, जो सामान्यतः मुद्रण, पैकेजिंग, भंडारण अथवा परिवहन के दौरान होता है।
- Long before printing, questions pass through **question-setting, moderation, translation, digitisation, and final compilation**, where a limited number of individuals have privileged access.
मुद्रण से बहुत पहले प्रश्न प्रश्न-निर्माण, मॉडरेशन, अनुवाद, डिजिटलीकरण तथा अंतिम संकलन जैसी प्रक्रियाओं से गुजरते हैं, जहाँ केवल सीमित व्यक्तियों को विशेष पहुँच प्राप्त होती है।
- Although investigations reportedly found no evidence of leaked printed papers in the **2024** cases, the examinations nevertheless led to arrests, cancellations, re-examinations, and a crisis of public confidence.
यद्यपि 2024 के मामलों में जाँच में कथित रूप से मुद्रित प्रश्नपत्र लीक होने का कोई प्रमाण नहीं मिला, फिर भी इन परीक्षाओं के कारण गिरफ्तारियाँ हुईं, परीक्षाएँ रद्द करनी पड़ीं, पुनर्परीक्षाएँ आयोजित करनी पड़ीं तथा जनविश्वास का गंभीर संकट उत्पन्न हुआ।
- Similarly, the circulation of highly targeted “**guided papers**” before **NEET-2026** raised questions about whether confidential information had flowed through insider or informal networks despite the absence of any recovered printed paper.
इसी प्रकार, नीट-2026 से पूर्व अत्यधिक लक्षित “गाइडेड पेपर्स” के प्रसार ने यह प्रश्न खड़ा किया कि क्या किसी मुद्रित प्रश्नपत्र के बरामद न होने के बावजूद गोपनीय जानकारी अंदरूनी अथवा अनौपचारिक नेटवर्कों के माध्यम से प्रसारित हुई थी।
- Examination compromise may therefore involve far more than a printed paper: selected questions, question banks, recurring themes, high-probability question pools, examiner identities, confidential instructions, digital data, or administrative information may all be unlawfully disclosed through insider access, cyber intrusions, or coaching networks.
अतः परीक्षा की गोपनीयता भंग होने का अर्थ केवल मुद्रित प्रश्नपत्र तक सीमित नहीं है। इसमें चयनित प्रश्न, प्रश्न बैंक, बार-बार आने वाले विषय, उच्च-प्रायिकता वाले प्रश्न समूह, परीक्षकों की पहचान, गोपनीय निर्देश,

डिजिटल आँकड़े अथवा प्रशासनिक जानकारी भी शामिल हो सकती है, जिन्हें अंदरूनी पहुँच, साइबर घुसपैठ या कोचिंग नेटवर्कों के माध्यम से अवैध रूप से उजागर किया जा सकता है।

- Restricting the definition of a “paper leak” to a leaked printed question paper overlooks these significant vulnerabilities.
“पेपर लीक” की परिभाषा को केवल मुद्रित प्रश्नपत्र के लीक होने तक सीमित रखना इन महत्वपूर्ण कमजोरियों की उपेक्षा करता है।
- In this context, extraordinary measures such as transporting the re-NEET 2026 question papers by aircraft may secure the final logistical stage but do little to address vulnerabilities at the source.
इस संदर्भ में पुनः आयोजित नीट-2026 के प्रश्नपत्रों को विमान द्वारा पहुँचाने जैसे असाधारण उपाय अंतिम लॉजिस्टिक चरण को तो सुरक्षित बना सकते हैं, किंतु मूल स्रोत पर मौजूद कमजोरियों का समाधान करने में बहुत कम प्रभावी हैं।
- The real issue is whether confidential examination information was disclosed in any form that compromised the fairness, integrity, or credibility of the examination.
वास्तविक प्रश्न यह है कि क्या परीक्षा से संबंधित गोपनीय जानकारी किसी भी रूप में इस प्रकार उजागर हुई जिससे परीक्षा की निष्पक्षता, अखंडता अथवा विश्वसनीयता प्रभावित हुई।

Other examination breaches परीक्षाओं में अन्य प्रकार के उल्लंघन

- The integrity of an examination may be undermined equally by failures before, during, or after the examination, even when no printed question paper is ever recovered.
किसी परीक्षा की निष्पक्षता परीक्षा से पहले, परीक्षा के दौरान, या परीक्षा के बाद हुई त्रुटियों से भी प्रभावित हो सकती है, भले ही मुद्रित प्रश्नपत्र कभी बरामद न हुआ हो।
- NEET-2024 illustrates this broader spectrum.
NEET-2024 इस व्यापक परिदृश्य का उदाहरण प्रस्तुत करता है।
- Reported irregularities included the distribution of an incorrect question paper, followed by its replacement.
रिपोर्ट की गई अनियमितताओं में गलत प्रश्नपत्र का वितरण और उसके बाद उसका प्रतिस्थापन शामिल था।
- Delayed collection or replacement of OMR sheets, exceptional grace marks, tie-breaking disputes, clustering of near-perfect scores, and unusually high scores from certain centres and coaching hubs were also reported.
OMR शीटों के संग्रह या प्रतिस्थापन में देरी, असाधारण ग्रेस अंक, टाई-ब्रेकिंग विवाद, लगभग पूर्ण अंकों का समूहबद्ध होना तथा कुछ परीक्षा केंद्रों और कोचिंग केंद्रों से असामान्य रूप से अधिक अंक प्राप्त होना भी रिपोर्ट किया गया।
- Collectively, these exposed weaknesses in examination management and institutional oversight.
इन सभी घटनाओं ने मिलकर परीक्षा प्रबंधन तथा संस्थागत निगरानी की कमजोरियों को उजागर किया।
- Other breaches include cybersecurity failures, manipulation of candidate or examination data, disclosure of confidential information, compromised examination centres, impersonation, organised unfair means, and insider access or coaching-network access to privileged information.
अन्य उल्लंघनों में साइबर सुरक्षा विफलताएँ, अभ्यर्थी अथवा परीक्षा संबंधी डेटा में हेरफेर, गोपनीय जानकारी का खुलासा, समझौता किए गए परीक्षा केंद्र, प्रतिरूपण (Impersonation), संगठित अनुचित साधनों का उपयोग तथा अंदरूनी व्यक्तियों या कोचिंग नेटवर्क द्वारा विशेषाधिकार प्राप्त जानकारी तक पहुँच शामिल हैं।
- Safeguarding public examinations, therefore, requires securing the entire examination lifecycle — from question development to result processing.



अतः सार्वजनिक परीक्षाओं की सुरक्षा के लिए प्रश्न निर्माण से लेकर परिणाम प्रसंस्करण तक संपूर्ण परीक्षा जीवनचक्र को सुरक्षित करना आवश्यक है।

- Failures in the transport of printed **question papers** alone cannot explain many examination breaches.
केवल मुद्रित प्रश्नपत्रों के परिवहन में हुई विफलताओं से अनेक परीक्षा उल्लंघनों की व्याख्या नहीं की जा सकती।
- Critical processes—including **question selection, paper allocation, examination-centre management, OMR handling, grace marks, result processing, cybersecurity**, and access to **confidential data**—are controlled by the **examination authority** and its associated agencies.
प्रश्न चयन, प्रश्नपत्र आवंटन, परीक्षा केंद्र प्रबंधन, OMR प्रबंधन, ग्रेस अंक, परिणाम प्रसंस्करण, साइबर सुरक्षा तथा गोपनीय डेटा तक पहुँच जैसी महत्वपूर्ण प्रक्रियाएँ परीक्षा प्राधिकरण और उससे संबद्ध एजेंसियों के नियंत्रण में होती हैं।
- Irregularities at these stages naturally raise questions about **institutional controls** and **insider vulnerabilities**.
इन चरणों में होने वाली अनियमितताएँ स्वाभाविक रूप से संस्थागत नियंत्रण तथा आंतरिक कमजोरियों पर प्रश्न उठाती हैं।
- The **NEET-2024** controversy illustrates this broader picture.
NEET-2024 विवाद इस व्यापक स्थिति को स्पष्ट करता है।
- Distribution of an **incorrect question paper**, delayed **OMR handling**, exceptional **grace marks**, unusually high scores from certain **centres**, and the circulation of highly targeted **“guided papers”** all point to vulnerabilities that extend beyond conventional **paper leaks**.
गलत प्रश्नपत्र का वितरण, OMR के प्रबंधन में देरी, असाधारण ग्रेस अंक, कुछ परीक्षा केंद्रों से अत्यधिक अंक प्राप्त होना तथा लक्षित “गाइडेड पेपर” का प्रसार ऐसी कमजोरियों की ओर संकेत करते हैं जो केवल पारंपरिक प्रश्नपत्र लीक से कहीं आगे जाती हैं।
- Such patterns warrant scrutiny of repeated **expert engagement, conflicts of interest**, links to **coaching ecosystems**, and other **insider risks**.
ऐसे पैटर्न बार-बार विशेषज्ञों की नियुक्ति, हितों के टकराव, कोचिंग तंत्र से संबंध तथा अन्य आंतरिक जोखिमों की गहन जाँच की अपेक्षा करते हैं।
- This does not imply that every irregularity results from **insider misconduct**.
इसका अर्थ यह नहीं है कि प्रत्येक अनियमितता आंतरिक कदाचार का परिणाम होती है।
- However, securing examinations requires protecting **confidential information, institutional processes**, and printed **question papers** alike.
किन्तु परीक्षाओं की सुरक्षा के लिए गोपनीय जानकारी, संस्थागत प्रक्रियाओं तथा मुद्रित प्रश्नपत्रों—सभी की समान रूप से रक्षा आवश्यक है।

Primary accountability

प्राथमिक उत्तरदायित्व

- Preventing **examination breaches** cannot be left to the **CBI, police, or courts**, which act only after a crisis.
परीक्षा उल्लंघनों की रोकथाम केवल सीबीआई, पुलिस या न्यायालयों पर नहीं छोड़ी जा सकती, क्योंकि वे केवल संकट उत्पन्न होने के बाद कार्यवाही करते हैं।
- **Primary responsibility lies with the examination authority, supported by the Ministry of Education, intelligence, and cybersecurity agencies, and independent oversight.**
प्राथमिक उत्तरदायित्व परीक्षा प्राधिकरण का है, जिसे शिक्षा मंत्रालय, खुफिया एजेंसियों, साइबर सुरक्षा एजेंसियों तथा स्वतंत्र निगरानी का सहयोग प्राप्त होना चाहिए।

- Accountability should extend across the entire **examination lifecycle** — from the selection of **question setters** and **translators** to **examination centres**, **digital systems**, **evaluation**, and **result processing**.
उत्तरदायित्व प्रश्ननिर्माताओं और अनुवादकों के चयन से लेकर परीक्षा केंद्रों, डिजिटल प्रणालियों, मूल्यांकन तथा परिणाम प्रसंस्करण तक पूरे परीक्षा जीवनचक्र में सुनिश्चित होना चाहिए।
- It requires rigorous **antecedent verification**, **conflict-of-interest scrutiny**, **periodic rotation of experts**, **cybersecurity audits**, **intelligence-based monitoring**, and clear **audit trails**.
इसके लिए कठोर पृष्ठभूमि सत्यापन, हितों के टकराव की जाँच, समय-समय पर विशेषज्ञों का स्थानांतरण, साइबर सुरक्षा ऑडिट, खुफिया-आधारित निगरानी तथा स्पष्ट ऑडिट ट्रेल आवश्यक हैं।

Official narrative and unanswered questions

आधिकारिक दृष्टिकोण और अनुत्तरित प्रश्न

- The official response to the **NEET-2024**, **UGC-NET 2024**, and **NEET-2026** controversies has largely rested on the absence of conclusive evidence of a conventional **paper leak**.
NEET-2024, **UGC-NET 2024** तथा **NEET-2026** विवादों पर आधिकारिक प्रतिक्रिया मुख्यतः पारंपरिक प्रश्नपत्र लीक के निर्णायक प्रमाणों के अभाव पर आधारित रही है।
- Before the **Supreme Court**, the **NTA** attributed the cancellation and re-conduct of **NEET-2026** to specific **intelligence inputs**, while the **High-Powered Steering Committee** emphasised compliance with its recommendations and **SOPs**.
सर्वोच्च न्यायालय के समक्ष **NTA** ने **NEET-2026** को रद्द कर पुनः आयोजित करने का कारण विशिष्ट खुफिया सूचनाओं को बताया, जबकि उच्च-स्तरीय संचालन समिति ने अपनी सिफारिशों और मानक संचालन प्रक्रियाओं (SOPs) के अनुपालन पर बल दिया।
- The **CBI's investigations** into **NEET-2024** and **UGC-NET 2024** resulted in **closure reports**, reportedly finding no prosecutable evidence of a **paper leak** and no basis to prosecute **NTA officials**.
सीबीआई की **NEET-2024** और **UGC-NET 2024** संबंधी जाँचों के परिणामस्वरूप समापन रिपोर्टें प्रस्तुत की गईं, जिनमें कथित रूप से प्रश्नपत्र लीक का अभियोजन योग्य कोई प्रमाण तथा **NTA अधिकारियों** के विरुद्ध अभियोजन का कोई आधार नहीं पाया गया।
- The **NEET-2026** investigation, however, remains ongoing.
हालाँकि, **NEET-2026** की जाँच अभी भी जारी है।
- These official positions contrast sharply with the ground reality.
ये आधिकारिक दावे वास्तविक परिस्थितियों से स्पष्ट रूप से भिन्न हैं।
- Cancelled or re-conducted examinations, arrests, allegations of widely circulated “**guided papers**”, **cybersecurity incidents**, operational lapses, and disruptions affecting millions of candidates.
रद्द या पुनः आयोजित परीक्षाएँ, गिरफ्तारियाँ, व्यापक रूप से प्रसारित “**गाइडेड पेपर**” के आरोप, साइबर सुरक्षा घटनाएँ, संचालन संबंधी त्रुटियाँ तथा लाखों अभ्यर्थियों को प्रभावित करने वाले व्यवधान इसकी पुष्टि करते हैं।
- In **NEET-2026**, official action reportedly followed a **whistleblower's FIR** rather than detection through the examination's own **security** or **intelligence systems**.
NEET-2026 में कथित रूप से आधिकारिक कार्रवाई परीक्षा की अपनी सुरक्षा या खुफिया प्रणाली द्वारा अनियमितता पकड़ने के बजाय एक **व्हिसलब्लोअर की एफआईआर** के बाद हुई।

The way forward

आगे की राह

- As its first task, the newly constituted committee headed by former **UIDAI** chairman **Nandan Nilekani** should prepare a comprehensive **White Paper** documenting the full spectrum of breaches in **NEET-2024**, **UGC-NET 2024**, and **NEET-2026**—covering **leakages**, **operational failures**, **cybersecurity incidents**, **centre-level irregularities**, **investigations**, **judicial outcomes**, and **lessons learned**.

अपने प्रथम कार्य के रूप में पूर्व यूआईडीईआई अध्यक्ष नंदन नीलेकणी की अध्यक्षता में गठित नई समिति को **NEET-2024**, **UGC-NET 2024** तथा **NEET-2026** में हुई सभी प्रकार की अनियमितताओं का व्यापक श्वेत पत्र (White Paper) तैयार करना चाहिए, जिसमें प्रश्नपत्र लीक, संचालन संबंधी विफलताएँ, साइबर सुरक्षा घटनाएँ, केंद्र-स्तरीय अनियमितताएँ, जाँच, न्यायिक परिणाम तथा सीखे गए सबक सम्मिलित हों।

- The **White Paper** should underpin a **Public Examination Integrity Framework (PEIF)** for all major examination bodies.

यह श्वेत पत्र सभी प्रमुख परीक्षा निकायों के लिए सार्वजनिक परीक्षा सत्यनिष्ठा रूपरेखा (Public Examination Integrity Framework—PEIF) का आधार बनना चाहिए।

- The Framework should prescribe standardised end-to-end **SOPs** covering the entire examination lifecycle, with an emphasis on **conflict-of-interest management**, **expert selection**, **cybersecurity**, **examination administration**, **audit**, and **institutional accountability**.

इस रूपरेखा में संपूर्ण परीक्षा जीवनचक्र को समाहित करने वाली मानकीकृत मानक संचालन प्रक्रियाएँ (SOPs) निर्धारित की जानी चाहिए, जिनमें हितों के टकराव का प्रबंधन, विशेषज्ञों का चयन, साइबर सुरक्षा, परीक्षा प्रशासन, लेखा-परीक्षण तथा संस्थागत उत्तरदायित्व पर विशेष बल हो।

- Ultimately, **public confidence** will be restored not by tougher laws or more **post-facto**

investigations, but by an **examination system** that detects risks early, prevents breaches before they occur, and ensures **institutional accountability**.

अंततः जन विश्वास कठोर कानूनों

या अधिक घटना-पश्चात जाँचों से

नहीं, बल्कि ऐसी परीक्षा प्रणाली से

पुनः स्थापित होगा जो जोखिमों की

समय रहते पहचान करे,

अनियमितताओं को पहले ही रोक दे

तथा संस्थागत उत्तरदायित्व

सुनिश्चित करे।

FSSAI bans '100% pure' Dabur products, firm's share falls 4%

Labels such as '100% pure, natural, organic and tender' are in contravention of food safety regulations, as they are ambiguous, unverifiable and likely to mislead consumers, says regulator

GS II: Governance
The Hindu Bureau
MUMBAI

In a major clamp down on companies making false and misleading claims, the Food Safety and Standards Authority of India (FSSAI) has issued an order directing FMCG major Dabur India Ltd. to withdraw products carrying 'misleading 100% claims'.

The regulator issued notice to the company to withdraw such products from the market with immediate effect and report the action taken, in 15 days.

The order is against the company's food products which include honey, apple cider vinegar, virgin coconut oil, sesame oil, cow ghee, coconut water, and coconut milk.

Stating that several critical non-compliances had been observed, FSSAI said, "Food products being sold on the company's website were found carrying misleading "100%" claims such as "100% Natural", "100% Pure", "100% Purity Guaranteed", "100% Organic" and "100% Tender".

"The use of the 100% claims are in contravention



Block list: The order is against Dabur products including honey, apple cider vinegar, virgin coconut oil, and cow ghee. FILE PHOTO

of the FSS (Advertising & Claims) Regulations, 2018, as they are ambiguous, unverifiable and likely to mislead consumers," the regulator said on X.

It said Dabur Himalayan Organic Apple Cider Vinegar and Dabur Organic Honey were found displaying the Jaivik Bharat Logo without valid FSSAI organic endorsement, in contravention of the FSS (Organic Foods) Regulations, 2017.

"Dabur Hommade Coconut Milk was marketed with the claim "100% Purity". Such a claim is not permissible for compound foods under the FSS (Advertising & Claims) Regulations, 2018, FSSAI said.

Despite an earlier notice directing discontinuation of misleading "100%"

claims, no satisfactory corrective action was taken by the company, the FSSAI stated. The regulator directed Dabur India to immediately halt sale of the food products identified in the notice and all other food products carrying misleading "100%" claims, and to submit an action taken report (ATR) within 15 days.

Following reports of the action, the company's shares fell by about 4% to ₹408.25 on the BSE. In a filing with stock exchanges, Dabur India said, "The company believes that the declaration on our product labels comply with the prevailing legal and regulatory framework and are consistent with long-standing industry practices." "Dabur

stands by the purity and quality of its products and has never made any misleading claims," it stated.

The company said it was exploring options in relation to the prohibitory order. "However, as a good corporate citizen, Dabur had already initiated transitioning of the product labels as mentioned in the FSSAI letter to new labels/advertisements without the 100% claim," it said.

'In transition'

"Most product labels/advertisements/website as mentioned in aforesaid order, have either already transitioned or are in the process of transition. The company is responding accordingly to FSSAI and will continue to engage constructively with them to resolve the matter," it added.

"We reiterate that Dabur stands by the purity and highest standards of quality of its products and does not make any misleading claims," it emphasised.

The company said the order would have limited impact on its business operations, financial position or performance and be confined to the food products under objection.



105A8. FSSAI bans '100% pure' Dabur products, firm's share falls 4% एफएसएसआई ने '100% शुद्ध' दावों वाले डाबर उत्पादों पर रोक लगाई, कंपनी के शेयर में 4% की गिरावट

- In a major clampdown on companies making **false** and **misleading claims**, the **Food Safety and Standards Authority of India (FSSAI)** has issued an order directing **Dabur India Ltd.** to withdraw products carrying '**misleading 100% claims**'.
- झूठे और भ्रामक दावे करने वाली कंपनियों के विरुद्ध बड़ी कार्रवाई करते हुए भारतीय खाद्य सुरक्षा एवं मानक प्राधिकरण (FSSAI) ने डाबर इंडिया लिमिटेड को 'भ्रामक 100% दावों' वाले उत्पाद वापस लेने का आदेश जारी किया है।
- The regulator issued notice to the company to withdraw such products from the market with **immediate effect** and report the action taken within **15 days**.
- नियामक ने कंपनी को तत्काल प्रभाव से ऐसे उत्पाद बाज़ार से वापस लेने तथा 15 दिनों के भीतर की गई कार्रवाई की रिपोर्ट प्रस्तुत करने का नोटिस जारी किया।
- The order is against the company's **food products** which include **honey, apple cider vinegar, virgin coconut oil, sesame oil, cow ghee, coconut water, and coconut milk**.
- यह आदेश कंपनी के खाद्य उत्पादों पर लागू होता है, जिनमें शहद, एप्पल साइडर विनेगर, वर्जिन नारियल तेल, तिल का तेल, गाय का घी, नारियल पानी तथा नारियल दूध शामिल हैं।
- Stating that several critical **non-compliances** had been observed, FSSAI said, "**Food products being sold on the company's website were found carrying misleading '100%' claims such as '100% Natural', '100% Pure', '100% Purity Guaranteed', '100% Organic' and '100% Tender'.**"
- कई गंभीर अनुपालन संबंधी उल्लंघनों का उल्लेख करते हुए एफएसएसआई ने कहा कि कंपनी की वेबसाइट पर बेचे जा रहे खाद्य उत्पादों पर '100%' जैसे भ्रामक दावे पाए गए, जिनमें '100% Natural', '100% Pure', '100% Purity Guaranteed', '100% Organic' तथा '100% Tender' शामिल हैं।
- "The use of the **100% claims** are in contravention of the **FSS (Advertising & Claims) Regulations, 2018**, as they are **ambiguous, unverifiable** and likely to **mislead consumers**," the regulator said on X.
- नियामक ने एक्स (X) पर कहा कि '100%' दावों का उपयोग खाद्य सुरक्षा एवं मानक (विज्ञापन एवं दावे) विनियम, 2018 का उल्लंघन है, क्योंकि ये अस्पष्ट, सत्यापित न किए जा सकने वाले तथा उपभोक्ताओं को भ्रमित करने वाले हैं।
- It said **Dabur Himalayan Organic Apple Cider Vinegar** and **Dabur Organic Honey** were found displaying the **Jaivik Bharat Logo** without valid **FSSAI organic endorsement**, in contravention of the **FSS (Organic Foods) Regulations, 2017**.
- एफएसएसआई ने कहा कि डाबर हिमालयन ऑर्गेनिक एप्पल साइडर विनेगर और डाबर ऑर्गेनिक हनी पर वैध एफएसएसआई ऑर्गेनिक अनुमोदन के बिना जैविक भारत (Jaivik Bharat) लोगो प्रदर्शित किया गया, जो खाद्य सुरक्षा एवं मानक (जैविक खाद्य) विनियम, 2017 का उल्लंघन है।
- "**Dabur Hommade Coconut Milk** was marketed with the claim '**100% Purity**'. Such a claim is not permissible for **compound foods** under the **FSS (Advertising & Claims) Regulations, 2018**," FSSAI said.
- एफएसएसआई ने कहा कि डाबर होममेड कोकोनट मिल्क का विपणन '100% Purity' के दावे के साथ किया गया, जबकि संयुक्त खाद्य उत्पादों (Compound Foods) के लिए ऐसा दावा खाद्य सुरक्षा एवं मानक (विज्ञापन एवं दावे) विनियम, 2018 के अंतर्गत अनुमेल्य नहीं है।
- Despite an earlier notice directing discontinuation of misleading '**100%**' claims, no satisfactory **corrective action** was taken by the company, the **FSSAI** stated.
- एफएसएसआई ने कहा कि भ्रामक '100%' दावों को बंद करने के पूर्व निर्देश के बावजूद कंपनी द्वारा कोई संतोषजनक सुधारात्मक कार्रवाई नहीं की गई।

- The regulator directed **Dabur India** to immediately halt sale of the food products identified in the notice and all other food products carrying misleading '**100%**' claims, and to submit an **Action Taken Report (ATR)** within **15 days**.
नियामक ने **डाबर इंडिया** को नोटिस में उल्लिखित तथा अन्य सभी भ्रामक '**100%**' दावों वाले खाद्य उत्पादों की बिक्री तत्काल रोकने और **15 दिनों** के भीतर **कार्रवाई प्रतिवेदन (Action Taken Report - ATR)** प्रस्तुत करने का निर्देश दिया।
- Following reports of the action, the company's **shares** fell by about **4%** to **₹408.25** on the **BSE**.
इस कार्रवाई की खबर आने के बाद **बीएसई** में कंपनी के **शेयर** लगभग **4%** गिरकर **₹408.25** पर आ गए।
- In a filing with **stock exchanges**, **Dabur India** said, "The company believes that the declaration on our product labels comply with the prevailing **legal** and **regulatory framework** and are consistent with long-standing **industry practices**."
शेयर बाजारों को दी गई सूचना में **डाबर इंडिया** ने कहा, "कंपनी का मानना है कि उसके उत्पादों के लेबल पर दिए गए विवरण वर्तमान **कानूनी** एवं **नियामकीय ढाँचे** के अनुरूप हैं तथा लंबे समय से प्रचलित **औद्योगिक प्रथाओं** के अनुरूप हैं।"
- "**Dabur** stands by the **purity** and **quality** of its products and has never made any misleading claims," it stated.
कंपनी ने कहा, "**डाबर** अपने उत्पादों की **शुद्धता** और **गुणवत्ता** पर दृढ़ है तथा उसने कभी कोई भ्रामक दावा नहीं किया है।"
- The company said it was exploring options in relation to the **prohibitory order**.
कंपनी ने कहा कि वह इस **प्रतिबंधात्मक आदेश** के संबंध में उपलब्ध विकल्पों पर विचार कर रही है।
- "However, as a good **corporate citizen**, **Dabur** had already initiated transitioning of the product labels as mentioned in the **FSSAI** letter to new labels/advertisements without the **100% claim**," it said.
कंपनी ने कहा, "एक जिम्मेदार **कॉर्पोरेट नागरिक** के रूप में **डाबर** ने **एफएसएसआई** के पत्र में उल्लिखित उत्पाद लेबलों को '**100%**' दावे के बिना नए लेबलों/विज्ञापनों में परिवर्तित करने की प्रक्रिया पहले ही शुरू कर दी थी।"

'In transition'

'परिवर्तन की प्रक्रिया में'

- "Most product **labels**, **advertisements**, and the **website** as mentioned in the aforesaid order, have either already transitioned or are in the process of transition."
कंपनी ने कहा, "उपरोक्त आदेश में उल्लिखित अधिकांश उत्पाद **लेबल**, **विज्ञापन** और **वेबसाइट** या तो पहले ही परिवर्तित किए जा चुके हैं या परिवर्तन की प्रक्रिया में हैं।"
- "The company is responding accordingly to **FSSAI** and will continue to engage constructively with them to resolve the matter," it added.
कंपनी ने आगे कहा कि वह **एफएसएसआई** को उसी के अनुरूप उत्तर दे रही है और इस मामले के समाधान के लिए उसके साथ रचनात्मक रूप से सहयोग करती रहेगी।
- "We reiterate that **Dabur** stands by the **purity** and **highest standards of quality** of its products and does not make any **misleading claims**," it emphasised.
कंपनी ने पुनः दोहराया कि **डाबर** अपने उत्पादों की **शुद्धता** और **उच्चतम गुणवत्ता मानकों** के प्रति प्रतिबद्ध है तथा कोई **भ्रामक दावा** नहीं करती।
- The company said the order would have **limited impact** on its **business operations**, **financial position** or **performance** and be confined to the food products under objection.
कंपनी ने कहा कि इस आदेश का उसके **व्यावसायिक संचालन**, **वित्तीय स्थिति** अथवा **प्रदर्शन** पर **सीमित प्रभाव** पड़ेगा और इसका दायरा केवल उन खाद्य उत्पादों तक सीमित रहेगा जिन पर आपत्ति उठाई गई है।



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NATO enters a new strategic era of transformation

GS II: IR

For the first time since the creation of the North Atlantic Treaty Organization (NATO) in 1949, Washington is asking Europe not merely to spend more on defence but also to assume primary responsibility for its own security. This marks a fundamental shift in the transatlantic compact and signals the emergence of a new phase in the Alliance's evolution. The question is no longer whether NATO will endure, but how it is adapting to a changing strategic landscape.

America's shift

The National Security Strategy of the United States of America (November 2025) maintained NATO as America's principal transatlantic alliance while signalling a significant shift in Washington's expectations of European allies, particularly regarding burden-sharing and collective defence responsibilities. It argued that the era of the U.S. serving as Europe's primary security guarantor was drawing to a close and that prosperous European allies must shoulder greater responsibility for defending their own continent. While endorsing NATO's commitment to increase defence spending to 5% of GDP as the new benchmark for burden sharing, the strategy envisaged the U.S. remaining the Alliance's strategic enabler, nuclear guarantor and political convener rather than its sole military backbone. The objective is a stronger, more self-reliant Europe that allows Washington to devote greater strategic attention to the Indo-Pacific.

This rebalancing is already evident. Following Russia's invasion of Ukraine in 2022, U.S. troop strength in Europe rose to around 1,00,000 personnel. Since then, Washington has gradually reversed that surge. During 2025-26, it withdrew around 5,000 troops from Germany, cancelled the planned deployment of 4,000 troops to Poland, and reduced Brigade Combat Teams in Europe from four to three, bringing the U.S. military presence in Europe down to approximately 75,000-80,000 troops – close to pre-Ukraine war levels. The 36th NATO Summit in Ankara in July 2026 reinforced this transition. While reaffirming the Alliance's commitment to Article 5, members pledged €70 billion in military assistance for Ukraine in 2026, committed to sustaining comparable support in 2027, endorsed European-led development of long-range



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NATO's European shift offers India new strategic and defence opportunities

precision strike capabilities and accelerated efforts to strengthen NATO's defence industrial base. The underlying message was unmistakable: Europe must assume greater responsibility for its conventional defence as the U.S. increasingly prioritises the Indo-Pacific.

Lord Ismay, NATO's first Secretary General, famously described the Alliance's original purpose as "to keep the Russians out, the Americans in, and the Germans down". While that dictum captured the strategic logic of the Cold War, NATO today has entered a distinctly different phase that may be summed up as keeping Russia deterred, America engaged and Europe prepared.

NATO's evolution over time

The Alliance's evolution can be viewed in three phases. NATO 1.0 (1949-1991) relied overwhelmingly on American military and nuclear power to deter Soviet aggression and preserve transatlantic unity. NATO 2.0 (1991-2022) followed the collapse of the Soviet Union, expanding eastwards, incorporating former Warsaw Pact members and undertaking operations in the Balkans and Afghanistan. Yet, this period also witnessed declining European defence expenditure and growing dependence on the U.S. for intelligence, logistics, strategic mobility and high-end military capabilities, making burden sharing an increasingly contentious issue.

The Russian invasion of Ukraine has ushered in NATO's third phase, a more balanced transatlantic partnership in which Europe assumes primary responsibility for conventional defence while the U.S. continues to provide strategic enablers such as nuclear deterrence, intelligence, long-range precision strike capabilities and global power projection. This is less a story of American disengagement than one of strategic redistribution.

The scale of Europe's response was evident at the 2025 Hague Summit, where NATO members committed to increasing core defence spending to at least 3.5% of GDP by 2035, with progress to be reviewed in 2029. Germany has doubled defence expenditure since 2023 and aims to reach the same target by 2029 while rebuilding military capability to deter Russia. Moscow, meanwhile, has reorganised its western military

posture with new headquarters, formations and bases facing NATO.

The more difficult challenge, however, is not spending but replacing the American military ecosystem. Even as European armies become stronger, they continue to depend heavily on the U.S. for intelligence, surveillance, satellite support, command and control systems, strategic airlift, missile defence, long-range precision strike capabilities and, above all, the nuclear umbrella. Washington's reduction of rapid reaction assets, including bombers, fighter aircraft, air-refuelling tankers, warships, aircraft carriers and attack submarines, together with the deferred deployment of Tomahawk cruise missiles to Germany, illustrates the extent of that dependence. Europe's central dilemma is therefore not simply building larger armed forces but developing the integrated capabilities that have long underpinned NATO's effectiveness. As Poland's Foreign Minister recently observed, Europe does not need to match American military power; it simply needs to be stronger than Russia.

New Delhi and the rebalance

For India, NATO's transformation is less about Europe than about the redistribution of American strategic attention. A Europe capable of assuming greater responsibility for its own security would enable Washington to devote more diplomatic attention, military resources and strategic investments to the Indo-Pacific, reinforcing the regional balance amid China's growing assertiveness. At the same time, a more capable Europe could emerge as an important partner for India in defence manufacturing, advanced technologies, artificial intelligence, cybersecurity, semiconductors and space.

New Delhi should therefore view these changes through the prism of strategic opportunity rather than alliance politics. Closer cooperation with both the U.S. and Europe can complement, not compromise, India's long-standing commitment to strategic autonomy. If navigated prudently, NATO's new strategic model can expand India's defence industrial partnerships, accelerate technological modernisation and strengthen its position as a leading power in an increasingly multipolar world.

05A8. NATO enters a new strategic era of transformation

नाटो रणनीतिक परिवर्तन के एक नए युग में प्रवेश कर रहा है

- For the first time since the **creation of the North Atlantic Treaty Organization (NATO) in 1949, Washington** is asking **Europe** not merely to spend more on defence but also to assume primary responsibility for its own security.
1949 में उत्तर अटलांटिक संधि संगठन (नाटो) की स्थापना के बाद पहली बार **वॉशिंगटन यूरोप** से केवल रक्षा पर अधिक व्यय करने के लिए ही नहीं, बल्कि अपनी सुरक्षा की प्राथमिक जिम्मेदारी स्वयं संभालने के लिए भी कह रहा है।

- The **National Security Strategy of the United States of America (November 2025)** maintained **NATO** as **America's** principal transatlantic alliance while signalling a significant shift in **Washington's** expectations of **European** allies, particularly regarding burden-sharing and collective defence responsibilities.
संयुक्त राज्य अमेरिका की राष्ट्रीय सुरक्षा रणनीति (नवंबर 2025) ने नाटो को अमेरिका का प्रमुख ट्रांस-अटलांटिक गठबंधन बनाए रखा, साथ ही **वॉशिंगटन** की **यूरोपीय** सहयोगियों से अपेक्षाओं में महत्वपूर्ण परिवर्तन का संकेत दिया, विशेषकर बोझ-साझेदारी तथा सामूहिक रक्षा संबंधी जिम्मेदारियों के संदर्भ में।
- The objective is a stronger, more self-reliant **Europe** that allows **Washington** to devote greater strategic attention to the **Indo-Pacific**.
इसका उद्देश्य अधिक सशक्त और आत्मनिर्भर **यूरोप** का निर्माण करना है, जिससे **वॉशिंगटन** **हिंद-प्रशांत** क्षेत्र पर अधिक रणनीतिक ध्यान केंद्रित कर सके।
- Following **Russia's** invasion of **Ukraine** in 2022, **U.S.** troop strength in **Europe** rose to around **1,00,000** personnel.
2022 में **रूस** द्वारा **यूक्रेन** पर आक्रमण के बाद **यूरोप** में **अमेरिकी** सैनिकों की संख्या लगभग **1,00,000** तक पहुँच गई थी।
- During **2025-26**, it withdrew around **5,000** troops from **Germany**, cancelled the planned deployment of **4,000** troops to **Poland**, and reduced **Brigade Combat Teams** in **Europe** from four to three, bringing the **U.S.** military presence in **Europe** down to approximately **75,000-80,000** troops — close to pre-**Ukraine** war levels.
2025-26 के दौरान उसने **जर्मनी** से लगभग **5,000** सैनिक वापस बुला लिए, **पोलैंड** में **4,000** सैनिकों की प्रस्तावित तैनाती रद्द कर दी तथा **यूरोप** में **ब्रिगेड कॉम्बैट टीमों** की संख्या चार से घटाकर तीन कर दी, जिससे **यूरोप** में **अमेरिकी** सैन्य उपस्थिति लगभग **75,000-80,000** सैनिकों तक रह गई, जो **यूक्रेन** युद्ध से पूर्व के स्तर के लगभग समान है।
- The **36th NATO Summit in Ankara in July 2026** reinforced this transition.
जुलाई 2026 में **अंकारा** में आयोजित **36वें नाटो शिखर सम्मेलन** ने इस परिवर्तन को और अधिक सुदृढ़ किया।
- While reaffirming the **Alliance's** commitment to **Article 5**, members pledged **€70 billion** in military assistance for **Ukraine** in **2026**, committed to sustaining comparable support in **2027**, endorsed **European-led** development of long-range precision strike capabilities and accelerated efforts to strengthen **NATO's** defence industrial base.
अनुच्छेद 5 के प्रति गठबंधन की प्रतिबद्धता दोहराते हुए, सदस्य देशों ने **2026** में **यूक्रेन** के लिए **70 अरब यूरो** की सैन्य सहायता देने का वचन दिया, **2027** में भी इसी प्रकार का समर्थन जारी रखने की प्रतिबद्धता व्यक्त की, **यूरोप-नेतृत्व** वाले लंबी दूरी की सटीक प्रहार क्षमता के विकास का समर्थन किया तथा **नाटो** के रक्षा औद्योगिक आधार को मजबूत करने के प्रयासों में तेजी लाने पर सहमति व्यक्त की।
- Lord Ismay, NATO's first Secretary General**, famously described the **Alliance's** original purpose as "to keep the **Russians** out, the **Americans** in, and the **Germans** down".
नाटो के प्रथम महासचिव **लॉर्ड इस्मे** ने प्रसिद्ध रूप से गठबंधन के मूल उद्देश्य को इस प्रकार व्यक्त किया था— "रूसियों को बाहर रखना, अमेरिकियों को भीतर बनाए रखना और जर्मनों को नियंत्रित रखना।"
- While that dictum captured the strategic logic of the **Cold War**, **NATO** today has entered a distinctly different phase that may be summed up as keeping **Russia** deterred, **America** engaged and **Europe** prepared.
यद्यपि यह कथन **शीत युद्ध** की रणनीतिक सोच को अभिव्यक्त करता था, आज **नाटो** एक बिल्कुल नए चरण में प्रवेश कर चुका है, जिसे इस प्रकार संक्षेपित किया जा सकता है— **रूस** को निरुत्साहित रखना, **अमेरिका** को सक्रिय बनाए रखना और **यूरोप** को तैयार रखना।

NATO's evolution over time

समय के साथ नाटो का विकास

- NATO 1.0 (1949-1991)** relied overwhelmingly on **American military** and **nuclear power** to deter **Soviet aggression** and preserve **transatlantic unity**.



नाटो 1.0 (1949-1991) ने सोवियत आक्रामकता को रोकने तथा अटलांटिक-पार एकता बनाए रखने के लिए मुख्य रूप से अमेरिकी सैन्य शक्ति और परमाणु शक्ति पर निर्भरता रखी।

- **NATO 2.0 (1991-2022)** followed the collapse of the **Soviet Union**, expanding eastwards, incorporating former **Warsaw Pact** members and undertaking operations in the **Balkans** and **Afghanistan**.

नाटो 2.0 (1991-2022) का आरंभ सोवियत संघ के विघटन के बाद हुआ, जिसमें पूर्व की ओर विस्तार करते हुए पूर्व वारसा संधि के सदस्य देशों को शामिल किया गया तथा बाल्कन और अफ़ग़ानिस्तान में अभियान संचालित किए गए।

- Yet, this period also witnessed declining **European defence expenditure** and growing dependence on the **U.S.** for **intelligence, logistics, strategic mobility** and **high-end military capabilities**, making **burden sharing** an increasingly contentious issue.

फिर भी, इस अवधि में यूरोपीय रक्षा व्यय में गिरावट आई तथा खुफिया जानकारी, रसद, रणनीतिक गतिशीलता और उन्नत सैन्य क्षमताओं के लिए अमेरिका पर निर्भरता बढ़ी, जिससे उत्तरदायित्व साझाकरण (Burden Sharing) का प्रश्न अधिक विवादास्पद बन गया।

- The **Russian invasion of Ukraine** has ushered in **NATO's third phase**, a more balanced **transatlantic partnership** in which **Europe** assumes primary responsibility for **conventional defence** while the **U.S.** continues to provide strategic enablers such as **nuclear deterrence, intelligence, long-range precision strike capabilities** and **global power projection**.

रूस द्वारा यूक्रेन पर आक्रमण ने नाटो के तीसरे चरण की शुरुआत की है, जो अधिक संतुलित अटलांटिक-पार साझेदारी पर आधारित है, जिसमें यूरोप पारंपरिक रक्षा की प्राथमिक जिम्मेदारी निभाता है, जबकि अमेरिका परमाणु प्रतिरोध, खुफिया सहायता, लंबी दूरी की सटीक प्रहार क्षमता तथा वैश्विक शक्ति प्रदर्शन जैसी रणनीतिक क्षमताएँ उपलब्ध कराता रहता है।

- This is less a story of **American disengagement** than one of **strategic redistribution**. यह अमेरिकी अलगव की तुलना में अधिक रणनीतिक पुनर्वितरण की कहानी है।
- The scale of **Europe's response** was evident at the **2025 Hague Summit**, where **NATO** members committed to increasing core **defence spending** to at least **3.5% of GDP** by **2035**, with progress to be reviewed in **2029**.

यूरोप की प्रतिक्रिया का व्यापक स्वरूप 2025 हेग शिखर सम्मेलन में स्पष्ट हुआ, जहाँ नाटो के सदस्य देशों ने 2035 तक मूल रक्षा व्यय को सकल घरेलू उत्पाद (GDP) के कम-से-कम 3.5% तक बढ़ाने का संकल्प लिया, जिसकी प्रगति की समीक्षा 2029 में की जाएगी।

- **Germany** has doubled **defence expenditure** since **2023** and aims to reach the same target by **2029** while rebuilding military capability to deter **Russia**.

जर्मनी ने 2023 से अपना रक्षा व्यय दोगुना कर दिया है और रूस को रोकने के लिए अपनी सैन्य क्षमता का पुनर्निर्माण करते हुए 2029 तक इसी लक्ष्य को प्राप्त करने का उद्देश्य रखा है।

- Even as **European armies** become stronger, they continue to depend heavily on the **U.S.** for **intelligence, surveillance, satellite support, command and control systems, strategic airlift, missile defence, long-range precision strike capabilities** and, above all, the **nuclear umbrella**.

यद्यपि यूरोपीय सेनाएँ अधिक सशक्त हो रही हैं, फिर भी वे खुफिया जानकारी, निगरानी, उपग्रह सहायता, कमांड एवं नियंत्रण प्रणाली, रणनीतिक हवाई परिवहन, मिसाइल रक्षा, लंबी दूरी की सटीक प्रहार क्षमता तथा सबसे बढ़कर परमाणु सुरक्षा छत्र के लिए अमेरिका पर अत्यधिक निर्भर हैं।

- **Europe's** central dilemma is therefore not simply building larger **armed forces** but developing the integrated capabilities that have long underpinned **NATO's effectiveness**.

अतः यूरोप की मुख्य चुनौती केवल बड़ी सशस्त्र सेनाओं का निर्माण करना नहीं, बल्कि उन एकीकृत क्षमताओं का विकास करना है जिन्होंने लंबे समय से नाटो की प्रभावशीलता को आधार प्रदान किया है।

- As **Poland's Foreign Minister** recently observed, **Europe** does not need to match **American military power**; it simply needs to be stronger than **Russia**.

जैसा कि हाल ही में पोलैंड के विदेश मंत्री ने कहा, यूरोप को अमेरिकी सैन्य शक्ति की बराबरी करने की आवश्यकता नहीं है; उसे केवल रूस से अधिक सशक्त होना चाहिए।

New Delhi and the rebalance नई दिल्ली और रणनीतिक पुनर्संतुलन

- For India, NATO's transformation is less about Europe than about the redistribution of American strategic attention.
भारत के लिए नाटो का परिवर्तन मुख्यतः यूरोप के बारे में नहीं, बल्कि अमेरिकी रणनीतिक ध्यान के पुनर्वितरण के बारे में है।
- A Europe capable of assuming greater responsibility for its own security would enable Washington to devote more diplomatic attention, military resources and strategic investments to the Indo-Pacific, reinforcing the regional balance amid China's growing assertiveness.
अपनी सुरक्षा की अधिक जिम्मेदारी निभाने में सक्षम यूरोप वॉशिंगटन को हिंद-प्रशांत क्षेत्र में अधिक कूटनीतिक ध्यान, सैन्य संसाधन और रणनीतिक निवेश लगाने में सक्षम बनाएगा, जिससे चीन की बढ़ती आक्रामकता के बीच क्षेत्रीय संतुलन मजबूत होगा।
- At the same time, a more capable Europe could emerge as an important partner for India in defence manufacturing, advanced technologies, artificial intelligence, cybersecurity, semiconductors and space.
साथ ही, अधिक सक्षम यूरोप भारत के लिए रक्षा विनिर्माण, उन्नत प्रौद्योगिकी, कृत्रिम बुद्धिमत्ता, साइबर सुरक्षा, अर्धचालक (सेमीकंडक्टर) तथा अंतरिक्ष जैसे क्षेत्रों में एक महत्वपूर्ण साझेदार बन सकता है।
- New Delhi should therefore view these changes through the prism of strategic opportunity rather than alliance politics.
अतः नई दिल्ली को इन परिवर्तनों को गठबंधन की राजनीति के बजाय रणनीतिक अवसर के दृष्टिकोण से देखना चाहिए।
- Closer cooperation with both the U.S. and Europe can complement, not compromise, India's long-standing commitment to strategic autonomy.
अमेरिका और यूरोप दोनों के साथ निकट सहयोग भारत की दीर्घकालिक रणनीतिक स्वायत्तता की प्रतिबद्धता को कमजोर नहीं करेगा, बल्कि उसे और सुदृढ़ करेगा।
- If navigated prudently, NATO's new strategic model can expand India's defence industrial partnerships, accelerate technological modernisation and strengthen its position as a leading power in an increasingly multipolar world.
यदि विवेकपूर्ण ढंग से आगे बढ़ा जाए, तो नाटो का नया रणनीतिक मॉडल भारत की रक्षा औद्योगिक साझेदारियों का विस्तार कर सकता है, प्रौद्योगिकीय आधुनिकीकरण को गति दे सकता है तथा उसे एक अधिकाधिक बहुध्रुवीय विश्व में अग्रणी शक्ति के रूप में सुदृढ़ कर सकता है।

GS Paper III: Economy		05 August 2026
TOPICS COVERED		
05A8	New vehicle third party insurance period raised नए वाहनों के लिए तृतीय-पक्ष बीमा अवधि बढ़ाई गई	
05A8	Out of work and outraged बेरोज़गार और आक्रोशित	
05A8	Transport, pharma and biotech become India's biggest research investors परिवहन, औषधि एवं जैव प्रौद्योगिकी भारत के सबसे बड़े अनुसंधान निवेशक बने	



05A8	Govt. introduces Bill to 'make it easier to do business in India' भारत में कारोबार करना आसान बनाने के लिए सरकार ने विधेयक प्रस्तुत किया
05A8	Essential stockpiling for a mineral-driven future खनिज-आधारित भविष्य के लिए आवश्यक भंडारण

New vehicle third party insurance period raised

SC increases cover for new cars to 4 years and for two-wheelers to 6 years 'in the interest of road safety'; it also proposes system wherein vehicles without insurance are denied fuel at petrol pumps

GS III: Economy

Aaratrika Bhaumik
NEW DELHI

The Supreme Court on Tuesday extended the mandatory third-party motor insurance coverage of new vehicles by a year. New cars will now have four years of coverage and two-wheelers of six years, it said. The court observed that despite the statutory mandate, a "shocking" number of vehicles continued to ply on Indian roads without third-party insurance, forcing accident victims and their families to "run from pillar to post" to secure compensation.

"While the Insurance Regulatory and Development Authority of India (IRDAI) and the General Insurance Council (GIC) have recommended that this period not be enhanced, we are of the view that it is in the interest of road safety that the period be enhanced by one year. Therefore, it is directed that henceforth, third-party insurance for four years for new cars and six years for new two-wheelers be required to be purchased. IR-



The court said that despite the statutory mandate, a "shocking" number of vehicles continued to ply without insurance. FILE PHOTO

DA to immediately issue necessary directions," a Bench of Justices Sanjay Karol and Prashant Kumar Mishra said.

In its 2018 judgment in the *S. Rajasekaran v. Union of India* case, the apex court had required purchasers of new vehicles to obtain three-year third-party insurance for cars and five-year cover for two-wheelers at the time of purchase or registration.

Data integration

The Bench also directed that Automatic Number Plate Recognition cameras,

deployed on highways and roads to detect traffic violations, be integrated with insurance data maintained by the Insurance Information Bureau of India (IIB) and vehicle registration data available on the VAHAN portal. It further directed that State police personnel be equipped with mobile applications linked to the IIB and VAHAN databases, enabling them to verify the insurance status of vehicles in real time and issue challans for violations.

The directions were issued while the apex court was hearing an appeal by

an insurance company against a 2024 Telangana High Court ruling directing it to pay ₹10 lakh in compensation to the family of a road accident victim, who was the sole breadwinner of the household. The insurer had disputed its liability to pay the compensation, contending that no additional premium had been paid to cover the personal risk of the vehicle owner.

The top court, however, dismissed the appeal and directed the insurer to pay the compensation awarded to the victim's family, observing that courts dealing with motor accident claims should not adopt a "hyper-technical approach". It flagged the high number of uninsured vehicles on Indian roads, observing that the lack of third-party coverage often leaves accident victims and their families embroiled in prolonged litigation over liability and the quantum of compensation.

The court proposed a system in which vehicles without valid insurance can be denied fuel at petrol pumps.

05A8. New vehicle third party insurance period raised

नए वाहनों के लिए तृतीय-पक्ष बीमा अवधि बढ़ाई गई

- The **Supreme Court** on **Tuesday** extended the mandatory **third-party motor insurance** coverage of new **vehicles** by **one year**.

सर्वोच्च न्यायालय ने मंगलवार को नए वाहनों के लिए अनिवार्य तृतीय-पक्ष मोटर बीमा की अवधि एक वर्ष बढ़ा दी।

- New cars will now have **four years** of coverage and **two-wheelers** of **six years**, it said.
न्यायालय ने कहा कि अब नई कारों के लिए चार वर्ष तथा दोपहिया वाहनों के लिए छह वर्ष का बीमा कवरेज अनिवार्य होगा।
- The court observed that despite the statutory mandate, a “**shocking**” number of vehicles continued to ply on Indian roads without **third-party insurance**, forcing **accident victims** and their families to “**run from pillar to post**” to secure compensation.
न्यायालय ने कहा कि वैधानिक प्रावधान होने के बावजूद भारतीय सड़कों पर “चौंकाने वाली” संख्या में वाहन बिना तृतीय-पक्ष बीमा के चल रहे हैं, जिससे सड़क दुर्घटना पीड़ितों और उनके परिवारों को मुआवज़ा प्राप्त करने के लिए अत्यधिक कठिनाइयों का सामना करना पड़ता है।
- “While the **Insurance Regulatory and Development Authority of India (IRDAI)** and the **General Insurance Council (GIC)** have recommended that this period not be enhanced, we are of the view that it is in the interest of **road safety** that the period be enhanced by one year.
“यद्यपि भारतीय बीमा विनियामक एवं विकास प्राधिकरण (IRDAI) तथा जनरल इंश्योरेंस काउंसिल (GIC) ने इस अवधि को न बढ़ाने की सिफारिश की है, फिर भी हमारा मत है कि सड़क सुरक्षा के हित में इसे एक वर्ष बढ़ाया जाना चाहिए।
- Therefore, it is directed that henceforth, **third-party insurance** for **four years** for new cars and **six years** for new **two-wheelers** be required to be purchased.
अतः यह निर्देश दिया जाता है कि अब से नई कारों के लिए चार वर्ष तथा नए दोपहिया वाहनों के लिए छह वर्ष का तृतीय-पक्ष बीमा अनिवार्य रूप से खरीदा जाएगा।
- IRDAI to immediately issue necessary directions,” a Bench of Justices Sanjay Karol and Prashant Kumar Mishra said.
न्यायमूर्ति संजय करोल और प्रशांत कुमार मिश्रा की पीठ ने कहा कि IRDAI इस संबंध में तत्काल आवश्यक निर्देश जारी करे।
- In its 2018 judgment in the **S. Rajasekaran v. Union of India** case, the apex court had required purchasers of new vehicles to obtain **three-year third-party insurance** for cars and **five-year** cover for **two-wheelers** at the time of purchase or registration.
2018 में एस. राजशेखरन बनाम भारत संघ मामले में सर्वोच्च न्यायालय ने नए वाहनों के खरीदारों के लिए खरीद या पंजीकरण के समय कारों हेतु तीन वर्ष तथा दोपहिया वाहनों हेतु पाँच वर्ष का तृतीय-पक्ष बीमा अनिवार्य किया था।

Data integration

डेटा एकीकरण

- The Bench also directed that **Automatic Number Plate Recognition (ANPR)** cameras, deployed on highways and roads to detect **traffic violations**, be integrated with **insurance data** maintained by the **Insurance Information Bureau of India (IIB)** and **vehicle registration data** available on the **VAHAN** portal.
पीठ ने यह भी निर्देश दिया कि यातायात नियमों के उल्लंघन का पता लगाने के लिए राजमार्गों और सड़कों पर लगाए गए ऑटोमैटिक नंबर प्लेट रिकग्निशन (ANPR) कैमरों को भारतीय बीमा सूचना ब्यूरो (IIB) द्वारा संरक्षित बीमा डेटा तथा वाहन पोर्टल (VAHAN) पर उपलब्ध वाहन पंजीकरण डेटा से जोड़ा जाए।
- It further directed that **State Police** personnel be equipped with **mobile applications** linked to the **IIB** and **VAHAN** databases, enabling them to verify the **insurance status** of vehicles in real time and issue **challans** for violations.
न्यायालय ने यह भी निर्देश दिया कि राज्य पुलिस के कर्मियों को IIB और VAHAN डेटाबेस से जुड़े मोबाइल अनुप्रयोग उपलब्ध कराए जाएँ, जिससे वे वास्तविक समय में वाहनों की बीमा स्थिति की जाँच कर सकें और उल्लंघन की स्थिति में चालान जारी कर सकें।
- The directions were issued while the apex court was hearing an appeal by an **insurance company** against a **2024 Telangana High Court** ruling directing it to pay **₹10 lakh** in



compensation to the family of a **road accident victim**, who was the sole breadwinner of the household.

ये निर्देश उस समय दिए गए जब सर्वोच्च न्यायालय 2024 के तेलंगाना उच्च न्यायालय के उस निर्णय के विरुद्ध एक बीमा कंपनी की अपील पर सुनवाई कर रहा था, जिसमें उसे सड़क दुर्घटना पीड़ित के परिवार को ₹10 लाख का मुआवजा देने का निर्देश दिया गया था। वह पीड़ित अपने परिवार का एकमात्र कमाने वाला सदस्य था।

- The insurer had disputed its liability to pay the compensation, contending that no additional premium had been paid to cover the **personal risk** of the **vehicle owner**.

बीमा कंपनी ने यह तर्क देते हुए मुआवजा देने की अपनी जिम्मेदारी से इनकार किया कि वाहन स्वामी के व्यक्तिगत जोखिम को कवर करने के लिए कोई अतिरिक्त प्रीमियम नहीं दिया गया था।

- The top court, however, dismissed the appeal and directed the insurer to pay the compensation awarded to the victim's family, observing that courts dealing with **motor accident claims** should not adopt a “**hyper-technical approach**”.

हालाँकि, सर्वोच्च न्यायालय ने अपील खारिज करते हुए बीमा कंपनी को पीड़ित के परिवार को निर्धारित मुआवजा देने का निर्देश दिया और कहा कि मोटर दुर्घटना दावों से संबंधित मामलों में न्यायालयों को “अत्यधिक तकनीकी दृष्टिकोण” नहीं अपनाना चाहिए।

- It flagged the high number of **uninsured vehicles** on Indian roads, observing that the lack of **third-party coverage** often leaves **accident victims** and their families embroiled in

Out of work and outraged

While the immediate trigger for the students' protest at Jantar Mantar was the repeated paper leaks, disillusionment among the youth runs much deeper. India has a significant youth population; however, unemployment remains high. Additionally, access to quality education has become limited due to a number of factors

ECONOMIC NOTES

Rohit Azad
Indranil Chowdhury

I won't be an exaggeration to say that the Jantar Mantar protest led by the Cockerroach Janita Party (CJP) is by far the most formidable challenge this government has faced in its 12 years of rule. While it was the issue of repeated paper leaks which pushed the people over the brink, the disillusionment runs far deeper among young Indians. And there is a material basis for this disillusionment. Unfortunately, neither the defiant resignation letter of the Minister nor the rousing welcome he got in the Parliament after the resignation gives the impression that the government has heard the voice of its own youth with any humility. The question, then, is: why did the agitation catch the imagination of the youth?

A lost demographic advantage
Let us start with what is called a demographic dividend. India currently has the youngest population in the world. Chart 1 shows a rising share of people in the working age bracket (15-64 years old) of the total population – a potential demographic dividend. We are calling it potential because its mere presence does not guarantee its realisation. If the unemployment rates, especially among those entering the labour market, remain high, we are essentially frittering the youth dividend away.

Chart 2, which compares the unemployment rate among the youth (15-29 years) in contrast to the overall workers, shows that India is indeed turning its face away from its youth. Youth unemployment is three times higher than the overall rate. Among women, it is almost four times higher. Urban women are the worst affected. Nearly one in five women looking for work is unable to find a job. It is therefore no surprise that a significantly large section of those protesting were women students.

And the frustration runs deep because even education is not enough to find a job in the Indian markets. Chart 3 shows that unemployment rises with education. The more educated you are, the less likely you are to land yourself a job. So, lack of jobs for the youth is not a supply but a demand side problem. Youth in India are unemployed not because they are not educated but because the economy is not generating enough jobs for them.

The crisis in education
It is not just a lack of jobs; access to quality education is also becoming increasingly limited. This is due to both quantitative and qualitative reasons.

On the quantitative side, it is perhaps for the first time in India's history that spending on education as a percentage of GDP has declined consistently for over a decade. While the government's own National Education Policy (NEP) 2020 recommended a significant increase in spending on education, the reality is the opposite. Spending on education as a share of the total budget has been declining consistently under the current government (Chart 4). This is a significant point that cannot be stressed enough.

Strictly speaking, spending as a proportion of GDP could decline purely because other components (investments, exports, consumption) of GDP can potentially grow faster. In contrast, the share of its own budget that a government allocates to education is entirely at its discretion and reflects the importance it



Protesters demonstrate against the NTA and the alleged irregularities in the NEET-UG and NET exams in New Delhi, on July 4, 2026. SUSHIL KUMAR VERMA

National, centralised admission tests such as the CUET result in considerable shrinking of admissions, not just across institutions but across the country
attaches to the sector. Chart 4 clearly shows that education has been slipping from the radar of this government over its tenure so far.

This was yet another case of a failed prodder which the students responded with their feet on Jantar Mantar (and elsewhere in the country). The low priority accorded to education by this government becomes even clearer when one looks at what it did in the last Budget. They spent way below what they promised in their budget with a shortfall amounting to ₹6,701 crores (Chart 5).

Starving education of funds creates a serious supply bottleneck as far as access to education is concerned. While the number of applicants rises with the growing youth dividend, the number of seats does not. The odds of securing a seat even in an average institution, let alone a premier one, keeps declining every year. Added to this are the changing of goalsposts by the government. One year, CBSE results are used for college admissions; the next, they are not. One year there is one entrance examination; the next, another.

Let us take the example of the Common University Entrance Test (CUET). If you want to join a college for an undergraduate (UG) degree, what you scored in your CBSE/RSE/State board examinations no longer matters as much; what matters is how you perform in the Computer-Based

Test (CBT) with multiple-choice questions (MCQs) under CUET (UG). If you want to do post-graduation (PG), what you did in your UG college for three or four years comes to naught, instead what matters again is what you did in the MCQ of CBT under CUET (PG). As a result, teaching and learning in schools and colleges have been affected. Students are being forced to prepare only for their CUET exams instead of pursuing a holistic teaching and learning process. It is therefore no surprise that, instead of quality educational institutions, coaching centres that help students crack these MCQs are mushrooming across the country.

As if this were not enough, the logistical nightmare that CUET brings to the table at the time of admission is mind boggling. The National Testing Agency (NTA) conducts the CUET, and there have been glitches since its inception. Academic sessions do not begin on time in many of the institutions that depend on these examinations. National, centralised admission tests also result in considerable shifting of admissions, not just across institutions but across the country. As a result, you have students joining the programme almost half way through the first semester. CUET has disrupted the admissions process in higher education. One could understand if these were teaching troubles but this is the fifth year of CUET, and there is still no respite from this chore.

Another bizarre example was introducing the scanning of CBSE answer scripts for evaluation in the name of objectivity. Given the massive scale of the CBSE examinations in the country, expecting such a policy to work smoothly was unrealistic from the outset.

THE GIST

India currently has a large youth population. If unemployment rates, especially among those entering the labour market, remain high, the country risks frittering away its demographic dividend.

While the National Education Policy (NEP) 2020 recommended a significant increase in spending on education, government expenditure on education as a share of the total budget has been declining consistently. The lack of funding creates a serious supply bottleneck for educational opportunities.

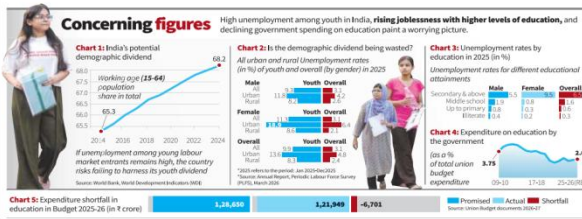
The logistical uncertainties associated with CUET in undergraduate admissions, along with reported excessive political interference in the appointment of teachers at public universities, have also adversely affected the education sector.

Interestingly, there was nothing fundamentally wrong with the previous systems of entrance examinations or CBSE evaluations. The government seems to have followed the maxim, “fix what isn't broken.” All this shows that not only is there an uncertainty of passing an exam, there is an uncertainty surrounding the exam itself. If the readers put themselves in the shoes of a student today, they would know what these students must be going through. One may argue that we are being a tad unfair to this government. After all, it has established new IITs and AIIMS. While this is true, merely increasing the number of institutions, with an overall fund squeeze, may not mean much. Buildings do not make institutions.

As for the quality of education, it is not infrastructure alone that matters, the quality of teaching does too. If the reports in the media were to be believed (and there is incontrovertible evidence to do so), there has been excessive political interference in the appointment of teachers at public universities. As a result, the quality of teaching has been sacrificed at the altar of politics under this regime. None of this is, or can be, hidden from students.

The Chief Justice of India gave an outlet to this simmering anger by calling those questioning the system “cockroaches”. Much like the cockroaches that possess incredible biological resilience, allowing them to survive for weeks without a head, the youth of this country braved the batons, tear gas, pellet guns and whatever the government threw at them.

(The authors are a part of DevMac (Development Macroeconomics) network, which seeks pluralism in Economics.)



05A8. Out of work and outraged बेरोज़गार और आक्रोशित

- Let us start with what is called a **demographic dividend**.
आइए शुरुआत उस अवधारणा से करें जिसे **जनसांख्यिकीय लाभांश (Demographic Dividend)** कहा जाता है।
- India** currently has the youngest population in the world.
वर्तमान में **भारत** विश्व की सबसे युवा आबादी वाला देश है।
- Chart 1** shows a rising share of people in the **working age bracket (15-64 years)** out of the **total population** — a potential **demographic dividend**.
चार्ट 1 दर्शाता है कि कुल जनसंख्या में **15-64 वर्ष** आयु वर्ग के लोगों का अनुपात बढ़ रहा है, जो संभावित **जनसांख्यिकीय लाभांश** का संकेत है।
- We are calling it potential because its mere existence does not guarantee its realisation.
इसे संभावित इसलिए कहा जा रहा है क्योंकि इसका केवल अस्तित्व ही इसके वास्तविक लाभ की गारंटी नहीं देता।
- If the **unemployment rates**, especially among those entering the labour market, remain high, we are essentially frittering the youth dividend away.
यदि **बेरोज़गारी दर**, विशेषकर श्रम बाज़ार में प्रवेश करने वाले युवाओं के बीच, ऊँची बनी रहती है, तो हम वस्तुतः इस युवा लाभांश को व्यर्थ गंवा रहे हैं।
- Chart 2**, which compares the **unemployment rate** among the youth (**15-29 years**) in contrast to the overall workers, shows that **India** is indeed turning its face away from its youth.
चार्ट 2, जिसमें **15-29 वर्ष** आयु वर्ग के युवाओं की बेरोज़गारी दर की तुलना समग्र श्रमिकों से की गई है, यह दर्शाता है कि **भारत** वास्तव में अपने युवाओं की उपेक्षा कर रहा है।
- Youth unemployment is **three times** higher than the overall rate.
युवाओं की बेरोज़गारी समग्र बेरोज़गारी दर से **तीन गुना** अधिक है।
- Among women, it is almost **four times** higher.
महिलाओं के बीच यह लगभग **चार गुना** अधिक है।
- Urban women are the worst affected.
शहरी महिलाएँ सबसे अधिक प्रभावित हैं।
- Nearly **one in five women** looking for work is unable to find a job.
रोज़गार की तलाश कर रही लगभग **हर पाँच में से एक महिला** को नौकरी नहीं मिल पा रही है।
- It is therefore no surprise that a significantly large section of those protesting were women students.
इसलिए यह आश्चर्य की बात नहीं है कि प्रदर्शनकारियों में बड़ी संख्या **महिला छात्राओं** की थी।
- And the frustration runs deep because even **education** is not enough to find a job in the Indian markets.
निराशा इसलिए और गहरी है क्योंकि भारतीय श्रम बाज़ार में केवल **शिक्षा** प्राप्त कर लेना भी नौकरी मिलने की गारंटी नहीं है।
- Chart 3** shows that unemployment rises with education.
चार्ट 3 दर्शाता है कि शिक्षा के स्तर के साथ बेरोज़गारी भी बढ़ती है।
- The more educated you are, the less likely you are to land yourself a job.
आप जितने अधिक शिक्षित होते हैं, आपके लिए नौकरी प्राप्त करने की संभावना उतनी ही कम हो जाती है।
- So, lack of jobs for the youth is not a supply but a demand side problem.
अतः युवाओं के लिए रोजगार का अभाव आपूर्ति पक्ष की नहीं, बल्कि **मांग पक्ष** की समस्या है।
- Youth in **India** are unemployed not because they are not educated but because the economy is not generating enough jobs for them.

भारत के युवा इसलिए बेरोज़गार नहीं हैं कि वे शिक्षित नहीं हैं, बल्कि इसलिए कि अर्थव्यवस्था उनके लिए पर्याप्त रोजगार उत्पन्न नहीं कर रही है।

The crisis in education

शिक्षा का संकट

- It is not just a lack of jobs; access to quality **education** is also becoming increasingly limited. समस्या केवल रोजगार की कमी तक सीमित नहीं है; गुणवत्तापूर्ण शिक्षा तक पहुँच भी लगातार सीमित होती जा रही है।
- This is due to both quantitative and qualitative reasons. इसके पीछे मात्रात्मक तथा गुणात्मक दोनों प्रकार के कारण हैं।
- On the quantitative side, it is perhaps for the first time in **India's** history that spending on **education** as a percentage of **GDP** has declined consistently for over a decade. मात्रात्मक दृष्टि से संभवतः भारत के इतिहास में पहली बार सकल घरेलू उत्पाद (GDP) के प्रतिशत के रूप में शिक्षा पर व्यय एक दशक से अधिक समय तक लगातार घटा है।
- While the government's own **National Education Policy (NEP) 2020** recommended a significant increase in spending on education, the reality is the opposite. यद्यपि सरकार की अपनी राष्ट्रीय शिक्षा नीति (एनईपी) 2020 ने शिक्षा पर व्यय में उल्लेखनीय वृद्धि की अनुशंसा की थी, वास्तविक स्थिति इसके विपरीत है।
- Spending on **education** as a share of the total budget has been declining consistently under the current government (**Chart 4**). वर्तमान सरकार के कार्यकाल में कुल बजट में शिक्षा पर व्यय का हिस्सा लगातार घटता गया है (चार्ट 4)।
- This is a significant point that cannot be stressed enough. यह अत्यंत महत्वपूर्ण तथ्य है, जिस पर जितना बल दिया जाए, उतना कम है।
- Strictly speaking, spending as a proportion of **GDP** could decline purely because other components (**investments, exports, consumption**) of **GDP** can potentially grow faster. तकनीकी दृष्टि से GDP के अनुपात में व्यय इसलिए भी घट सकता है क्योंकि निवेश, निर्यात तथा उपभोग जैसे अन्य घटक अधिक तेज़ी से बढ़ सकते हैं।
- In contrast, the share of its own budget that a government allocates to **education** is entirely at its discretion and reflects the importance it attaches to the sector. इसके विपरीत, सरकार अपने कुल बजट का कितना भाग शिक्षा को आवंटित करती है, यह पूरी तरह उसके विवेक पर निर्भर करता है और इस क्षेत्र को दिए गए महत्व को दर्शाता है।
- Chart 4** clearly shows that **education** has been slipping from the radar of this government over its tenure so far. चार्ट 4 स्पष्ट रूप से दर्शाता है कि इस सरकार के कार्यकाल में शिक्षा उसकी प्राथमिकताओं से लगातार बाहर होती गई है।
- This was yet another case of a failed promise, to which the students responded with their feet on **Jantar Mantar** (and elsewhere in the country). यह भी एक और अधूरा वादा सिद्ध हुआ, जिसके विरोध में छात्रों ने जंतर मंतर (तथा देश के अन्य भागों) में उतरकर अपनी प्रतिक्रिया व्यक्त की।
- The low priority accorded to **education** by this government becomes even clearer when one looks at what it did in the last **Budget**. इस सरकार द्वारा शिक्षा को दी गई कम प्राथमिकता पिछले बजट के विश्लेषण से और अधिक स्पष्ट हो जाती है।
- They spent way below what they promised in their budget with a shortfall amounting to **₹6,701 crores (Chart 5)**. सरकार ने अपने बजट में किए गए वादे की तुलना में कहीं कम व्यय किया, जिससे ₹6,701 करोड़ (चार्ट 5) की कमी रह गई।

- Starving **education** of funds creates a serious supply bottleneck as far as access to education is concerned.
शिक्षा के लिए पर्याप्त वित्त उपलब्ध न कराना शिक्षा तक पहुँच के संदर्भ में गंभीर आपूर्ति संबंधी बाधा उत्पन्न करता है।
- While the number of applicants rises with the growing youth dividend, the number of seats does not.
जहाँ बढ़ती युवा आबादी के साथ आवेदकों की संख्या बढ़ रही है, वहीं उपलब्ध सीटों की संख्या उसी अनुपात में नहीं बढ़ रही है।
- The odds of securing a seat even in an average institution, let alone a premier one, keeps declining every year.
यहाँ तक कि एक सामान्य संस्थान में भी प्रवेश प्राप्त करने की संभावना, उत्कृष्ट संस्थानों की तो बात ही छोड़ दीजिए, प्रत्येक वर्ष कम होती जा रही है।
- Added to this are the changing of goalposts by the government.
इसके अतिरिक्त सरकार द्वारा बार-बार नियमों और मानकों में परिवर्तन भी एक बड़ी समस्या है।
- One year, **CBSE** results are used for college admissions; the next, they are not.
एक वर्ष **सीबीएसई** के परिणामों का उपयोग महाविद्यालय प्रवेश के लिए किया जाता है, जबकि अगले वर्ष ऐसा नहीं किया जाता।
- One year there is one entrance examination; the next, another.
एक वर्ष एक प्रकार की प्रवेश परीक्षा होती है, तो अगले वर्ष दूसरी प्रकार की परीक्षा लागू कर दी जाती है।
- If you want to join a college for an **undergraduate (UG)** degree, what you scored in your **CBSE/ICSE/State Board examinations** no longer matters as much; what matters is how you perform in the **Computer-Based Test (CBT)** with **multiple-choice questions (MCQs)** under **CUET (UG)**.
यदि आप **स्नातक (UG)** पाठ्यक्रम में प्रवेश लेना चाहते हैं, तो **CBSE/ICSE/राज्य बोर्ड परीक्षाओं** में प्राप्त आपके अंक अब उतने महत्वपूर्ण नहीं रह गए हैं; अब महत्व इस बात का है कि आप **CUET (UG)** के अंतर्गत **कंप्यूटर-आधारित परीक्षा (CBT)** में **बहुविकल्पीय प्रश्नों (MCQs)** में कैसा प्रदर्शन करते हैं।
- If you want to do **post-graduation (PG)**, what you did in your **UG college** for three or four years comes to naught, instead what matters again is what you did in the **MCQ of CBT under CUET (PG)**.
यदि आप **स्नातकोत्तर (PG)** करना चाहते हैं, तो **स्नातक महाविद्यालय** में तीन या चार वर्षों का आपका प्रदर्शन गौण हो जाता है; पुनः महत्व इस बात का होता है कि आप **CUET (PG)** के अंतर्गत **CBT** के **MCQs** में कैसा प्रदर्शन करते हैं।
- As a result, **teaching and learning** in **schools** and **colleges** have been affected.
इसके परिणामस्वरूप **विद्यालयों** और **महाविद्यालयों** में **शिक्षण एवं अधिगम** प्रभावित हुए हैं।
- Students are being forced to prepare only for their **CUET** exams instead of focussing on a **holistic teaching and learning process**.
विद्यार्थियों को **समय शिक्षण-अधिगम प्रक्रिया** पर ध्यान देने के बजाय केवल **CUET** परीक्षा की तैयारी करने के लिए विवश किया जा रहा है।
- It is therefore no surprise that, instead of quality **educational institutions**, **coaching centres** that help students crack these **MCQs** are mushrooming across the country.
इसलिए यह आश्चर्य की बात नहीं है कि गुणवत्तापूर्ण **शैक्षणिक संस्थानों** के स्थान पर इन **MCQs** में सफलता दिलाने वाले **कोचिंग केंद्र** पूरे देश में तेज़ी से बढ़ रहे हैं।
- As if this were not enough, the logistical nightmare that **CUET** brings to the table at the time of **admissions** is mind boggling.
मानो यह पर्याप्त न हो, **प्रवेश प्रक्रिया** के समय **CUET** द्वारा उत्पन्न की जाने वाली व्यवस्थागत जटिलताएँ अत्यंत गंभीर हैं।
- The **National Testing Agency (NTA)** conducts the **CUET**, and there have been glitches since its inception.

राष्ट्रीय परीक्षण एजेंसी (NTA) CUET आयोजित करती है, और इसकी शुरुआत से ही इसमें अनेक तकनीकी एवं प्रशासनिक समस्याएँ रही हैं।

- Academic sessions do not begin on time in many of the institutions that depend on these examinations.
इन परीक्षाओं पर निर्भर अनेक संस्थानों में शैक्षणिक सत्र समय पर प्रारंभ नहीं हो पाते।
- National, centralised **admission tests** also result in considerable shifting of admissions, not just across institutions but across the country.
राष्ट्रीय स्तर की केंद्रीकृत प्रवेश परीक्षाएँ केवल संस्थानों के बीच ही नहीं, बल्कि पूरे देश में प्रवेशों के व्यापक स्थानांतरण का कारण बनती हैं।
- As a result, you have students joining the programme almost half way through the **first semester**.
इसके परिणामस्वरूप अनेक विद्यार्थी प्रथम सेमेस्टर के लगभग आधे समय के बाद पाठ्यक्रम में प्रवेश लेते हैं।
- **CUET** has disrupted the **admissions process** in **higher education**.
CUET ने उच्च शिक्षा की प्रवेश प्रक्रिया को बाधित कर दिया है।
- One could understand if these were **teething troubles** but this is the **fifth year** of **CUET**, and there is still no respite from this chaos.
यदि ये केवल प्रारंभिक समस्याएँ होतीं तो उन्हें समझा जा सकता था, किन्तु यह **CUET** का पाँचवाँ वर्ष है और अभी भी इस अव्यवस्था से कोई राहत नहीं मिली है।
- Another bizarre example was introducing the **scanning of CBSE answer scripts** for evaluation in the name of **objectivity**.
एक अन्य विचित्र उदाहरण वस्तुनिष्ठता के नाम पर मूल्यांकन हेतु **CBSE** उत्तर पुस्तिकाओं की स्कैनिंग की व्यवस्था लागू करना था।
- Given the massive scale of the **CBSE examinations** in the country, expecting such a policy to work smoothly was unrealistic from the outset.
देश में **CBSE परीक्षाओं** के विशाल स्तर को देखते हुए, ऐसी व्यवस्था के सुचारु रूप से कार्य करने की अपेक्षा प्रारंभ से ही अव्यावहारिक थी।
- Interestingly, there was nothing fundamentally wrong with the previous systems of either **entrance examinations** or **CBSE evaluations**.
रोचक बात यह है कि प्रवेश परीक्षाओं अथवा **CBSE मूल्यांकन प्रणाली** की पूर्व व्यवस्था में कोई मूलभूत त्रुटि नहीं थी।
- The government seems to have followed the maxim, “**fix what isn’t broken.**”
ऐसा प्रतीत होता है कि सरकार ने “जो टूटा नहीं है, उसे भी ठीक करने” के सिद्धांत का अनुसरण किया।
- All this shows that not only is there an uncertainty of passing an exam, there is an uncertainty surrounding the **exam** itself.
यह सब दर्शाता है कि केवल परीक्षा उत्तीर्ण करने की ही अनिश्चितता नहीं है, बल्कि स्वयं परीक्षा के आयोजन और स्वरूप को लेकर भी अनिश्चितता है।
- If the readers put themselves in the shoes of a **student** today, they would know what these students must be going through.
यदि पाठक स्वयं को आज के किसी विद्यार्थी की स्थिति में रखकर देखें, तो वे समझ सकेंगे कि ये विद्यार्थी किन परिस्थितियों से गुजर रहे हैं।
- One may argue that we are being a tad unfair to this **government**.
कोई यह तर्क दे सकता है कि हम इस सरकार के प्रति कुछ कठोर हो रहे हैं।
- After all, it has established new **IITs** and **AIIMS**.
आखिरकार, इसने नए आईआईटी और एम्स संस्थानों की स्थापना की है।
- While this is true, merely increasing the number of institutions, with an overall **fund squeeze**, may not mean much.
यद्यपि यह सत्य है, किन्तु समग्र वित्तीय संसाधनों में कमी के बीच केवल संस्थानों की संख्या बढ़ा देने का विशेष महत्व नहीं है।

- **Buildings** do not make **institutions**.
केवल भवन किसी संस्थान का निर्माण नहीं करते।
- As for the quality of **education**, it is not **infrastructure** alone that matters, the quality of **teaching** does too.
शिक्षा की गुणवत्ता के संदर्भ में केवल अवसंरचना ही महत्वपूर्ण नहीं होती, बल्कि शिक्षण की गुणवत्ता भी उतनी ही आवश्यक है।
- If the reports in the **media** were to be believed (and there is incontrovertible evidence to do so), there has been excessive **political interference** in the appointment of **teachers** at **public universities**.
यदि मीडिया की रिपोर्टों पर विश्वास किया जाए (और ऐसा करने के लिए पर्याप्त निर्विवाद प्रमाण उपलब्ध हैं), तो सार्वजनिक विश्वविद्यालयों में शिक्षकों की नियुक्तियों में अत्यधिक राजनीतिक हस्तक्षेप हुआ है।
- As a result, the quality of **teaching** has been sacrificed at the altar of **politics** under this regime.
इसके परिणामस्वरूप इस शासनकाल में राजनीति के कारण शिक्षण की गुणवत्ता से समझौता किया गया है।
- None of this is, or can be, hidden from **students**.
इनमें से कोई भी बात विद्यार्थियों से छिपी नहीं है और न ही छिपाई जा सकती है।
- The **Chief Justice of India** gave an outlet to this simmering anger by calling those questioning the system '**cockroaches**'.
भारत के मुख्य न्यायाधीश ने व्यवस्था पर प्रश्न उठाने वालों को 'कॉकरोच' कहकर इस सुलगते हुए आक्रोश को एक नया आयाम दे दिया।
- Much like the **cockroaches** that possess incredible biological resilience, allowing them to survive for weeks without a head, the **youth** of this country braved the **batons**, **tear gas**, **pellet guns** and whatever the **government** threw at them.
जिस प्रकार कॉकरोच अपनी अद्भुत जैविक सहनशीलता के कारण बिना सिर के भी कई सप्ताह तक जीवित रह सकते हैं, उसी प्रकार इस देश के युवाओं ने लाठीचार्ज, आँसू गैस, पैलेट गन तथा सरकार द्वारा उन पर किए गए अन्य सभी उपायों का साहसपूर्वक सामना किया।

Demographic Dividend

Although there is **no statutory definition** in an Act of Parliament, Government of India policy documents and NITI Aayog use the following concept:

Demographic dividend refers to the potential economic growth that results from changes in the age structure of the population, particularly when the proportion of the working-age population becomes larger than the dependent population, creating an opportunity for higher productivity, savings, investment, and economic growth.

Simple Explanation

Suppose there are **100 people** in a country.

Earlier:

- 35 children
- 10 elderly
- 55 working-age persons



Now, due to lower fertility:

- 22 children
- 12 elderly
- 66 working-age persons

Now more people are available to work and fewer depend on them.

If these 66 people receive:

- education,
- skills,
- healthcare,
- employment,

the economy can grow rapidly.

This is called the **demographic dividend**.

Important: It is only a **potential opportunity**, not a guarantee. Without jobs and skill development, the dividend can become a demographic burden.

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Transport, pharma and biotech become India's biggest research investors

JACOB K. KOSHY
NEW DELHI

India's private-sector research effort is now being driven overwhelmingly by the transportation, pharmaceutical, biotechnology and information technology (IT) industries, with transport companies emerging as the country's largest corporate R&D investors, according to the Department of Science and Technology's (DST) Research and Development Statistics 2025-26.

The report also shows that industry now employs more researchers than the public sector in core R&D

activities, underscoring a broader shift in the country's innovation landscape.

The report follows a disclosure by the DST in the Lok Sabha last week that showed India's spending on research and development (R&D) surged to 0.83% of GDP in 2021-22, the first time that the country crossed the 0.8% threshold since 2009-10.

The report estimates that India's R&D expenditure will approach 0.9% of GDP in 2025-26.

The figures also reveal a structural shift in India's innovation landscape: private industry accounted for 45.5% of national R&D

spending in 2021-22, rising further to 51.8% in 2023-24, the first time businesses have contributed more than all levels of government combined.

Transportation companies spent ₹39,137 crore on R&D in 2023-24, making them the single largest industrial R&D contributor, followed by drugs and pharmaceuticals (₹25,847 crore), biotechnology (₹10,321 crore), IT (₹9,587 crore) and electrical and electronics (₹6,779 crore).

Together, these sectors accounted for the bulk of private industrial research expenditure.



Transportation companies spent ₹39,137 crore on R&D in 2023-24.

The latest figures represent a marked departure from the pattern seen in the last publicly available DST statistical compendium released in 2020, which contained data up to

2018-19. At that time, pharma and transportation were already among the country's leading industrial research sectors, but transportation R&D was only about ₹4,000 crore while biotechnology and IT accounted for a much smaller share of industrial research spending.

Since then, the transport-sector R&D has almost tripled, biotechnology has emerged as one of India's largest research-intensive industries, and IT has joined the country's leading corporate R&D spenders.

An official, who declined to be identified but

familiar with the data compendium, attributed the sharp rise in private sector spending to "post COVID."

The "realisation" that investments in R&D were "critical" to companies' future prompted greater investments, he told *The Hindu*. Though nearly 8,000-odd companies populated the DST database, 90% of the R&D investments came from 500-odd companies.

He underlined that the DST had not made any methodological changes to how it sourced this data from industries, which is done through self-reported questionnaires. Stricter re-

quirements by RBI on transparently disclosing R&D spends may also have played a role, he added.

The expansion in spending has been accompanied by a shift in India's research workforce. The latest survey estimates that private industry employed more full-time equivalent (FTE) R&D personnel than government institutions in 2023-24, with business enterprises accounting for the largest pool of researchers and technical staff engaged in core research activities. In contrast, the 2020 edition of the report, based on 2017-18 data, showed govern-

ment institutions, including central agencies, state organisations and higher educational institutions, as the dominant employers of India's R&D workforce. The report attributes the increase in private research primarily to business enterprises rather than private universities or research organisations. Of the ₹1.27 lakh crore spent by the private sector in 2023-24, private industry accounted for ₹1.11 lakh crore, while Scientific and Industrial Research Organisations contributed ₹7,798 crore and private higher educational institutions ₹9,164 crore.

05A8. Transport, pharma and biotech become India's biggest research investors

परिवहन, औषधि एवं जैव प्रौद्योगिकी भारत के सबसे बड़े अनुसंधान निवेशक बने

- India's private-sector research effort is now being driven overwhelmingly by the **transportation, pharmaceutical, biotechnology and information technology (IT)** industries, with transport companies emerging as the country's largest corporate R&D investors, according to the **Department of Science and Technology (DST)**'s **Research and Development Statistics 2025-26**.

विज्ञान एवं प्रौद्योगिकी विभाग (डीएसटी) की अनुसंधान एवं विकास सांख्यिकी 2025-26 रिपोर्ट के अनुसार,

भारत का निजी क्षेत्रीय अनुसंधान प्रयास अब मुख्यतः परिवहन, औषधि, जैव प्रौद्योगिकी तथा सूचना

प्रौद्योगिकी (आईटी) उद्योगों द्वारा संचालित हो रहा है, जिसमें परिवहन कंपनियाँ देश की सबसे बड़ी कॉर्पोरेट अनुसंधान एवं विकास (R&D) निवेशक बनकर उभरी हैं।

- The report also shows that industry now employs more researchers than the public sector in core R&D activities, underscoring a broader shift in the country's innovation landscape. रिपोर्ट यह भी दर्शाती है कि अब मूल **अनुसंधान एवं विकास (R&D)** गतिविधियों में उद्योग क्षेत्र सार्वजनिक क्षेत्र की तुलना में अधिक शोधकर्ताओं को रोजगार दे रहा है, जो देश के नवाचार परिदृश्य में व्यापक परिवर्तन को रेखांकित करता है।

- The report follows a disclosure by the **DST** in the **Lok Sabha** last week that showed **India's** spending on **research and development (R&D)** surged to **0.83% of GDP** in **2021-22**, the first time that the country crossed the **0.8% threshold** since **2009-10**.
यह रिपोर्ट डीएसटी द्वारा पिछले सप्ताह लोकसभा में दी गई जानकारी के बाद आई है, जिसमें बताया गया था कि भारत का अनुसंधान एवं विकास (R&D) पर व्यय 2021-22 में बढ़कर सकल घरेलू उत्पाद (GDP) का 0.83% हो गया, जो 2009-10 के बाद पहली बार 0.8% की सीमा से अधिक है।
- The report estimates that **India's R&D expenditure** will approach **0.9% of GDP** in **2025-26**. रिपोर्ट का अनुमान है कि 2025-26 में भारत का अनुसंधान एवं विकास व्यय GDP के 0.9% के निकट पहुँच जाएगा।
- The figures also reveal a structural shift in **India's** innovation landscape: private industry accounted for **45.5%** of national **R&D** spending in **2021-22**, rising further to **51.8%** in **2023-24**, the first time businesses have contributed more to **India's** research effort than all levels of government combined.
ये आँकड़े भारत के नवाचार परिदृश्य में एक संरचनात्मक परिवर्तन भी दर्शाते हैं। 2021-22 में राष्ट्रीय अनुसंधान एवं विकास (R&D) व्यय में निजी उद्योग की हिस्सेदारी 45.5% थी, जो 2023-24 में बढ़कर 51.8% हो गई। यह पहली बार है जब व्यवसायों ने भारत के अनुसंधान प्रयास में सभी स्तरों की सरकारों के संयुक्त योगदान से अधिक योगदान दिया है।
- Transportation** companies spent **₹39,137 crore** on **R&D** in **2023-24**, making them the single largest industrial **R&D** contributor, followed by **drugs and pharmaceuticals (₹25,847 crore)**, **biotechnology (₹10,321 crore)**, **IT (₹9,587 crore)** and **electrical and electronics (₹6,779 crore)**.
2023-24 में परिवहन कंपनियों ने अनुसंधान एवं विकास (R&D) पर ₹39,137 करोड़ व्यय किए, जिससे वे औद्योगिक R&D की सबसे बड़ी योगदानकर्ता बन गईं। इसके बाद औषधि एवं फार्मास्यूटिकल्स (₹25,847 करोड़), जैव प्रौद्योगिकी (₹10,321 करोड़), सूचना प्रौद्योगिकी (₹9,587 करोड़) तथा विद्युत एवं इलेक्ट्रॉनिक्स (₹6,779 करोड़) का स्थान रहा।
- Together, these sectors accounted for the bulk of private industrial research expenditure. सामूहिक रूप से इन क्षेत्रों ने निजी औद्योगिक अनुसंधान व्यय का अधिकांश हिस्सा वहन किया।
- The latest figures represent a marked departure from the pattern seen in the last publicly available **DST** statistical compendium released in **2020**, which contained data up to **2018-19**. नवीनतम आँकड़े 2020 में जारी डीएसटी के अंतिम सार्वजनिक सांख्यिकीय संकलन से स्पष्ट रूप से भिन्न हैं, जिसमें 2018-19 तक के आँकड़े शामिल थे।
- At that time, **pharma** and **transportation** were already among the country's leading industrial research sectors, but transportation **R&D** was only about **₹14,000 crore** while **biotechnology** and **IT** accounted for a much smaller share of industrial research spending.
उस समय औषधि और परिवहन पहले से ही देश के प्रमुख औद्योगिक अनुसंधान क्षेत्रों में शामिल थे, किन्तु परिवहन क्षेत्र का R&D व्यय केवल लगभग ₹14,000 करोड़ था, जबकि जैव प्रौद्योगिकी और आईटी का औद्योगिक अनुसंधान व्यय में योगदान अपेक्षाकृत बहुत कम था।
- Since then, the **transport-sector R&D** has almost tripled, **biotechnology** has emerged as one of **India's** largest research-intensive industries, and **IT** has joined the country's leading corporate **R&D** spenders.
तब से परिवहन क्षेत्र का R&D व्यय लगभग तीन गुना हो गया है, जैव प्रौद्योगिकी भारत के सबसे अधिक अनुसंधान-प्रधान उद्योगों में से एक बन गई है, तथा आईटी भी देश के प्रमुख कॉर्पोरेट R&D निवेशकों में शामिल हो गया है।
- An official, who declined to be identified but familiar with the data compendium, attributed the sharp rise in private sector spending to "**post COVID.**"
एक अधिकारी, जिन्होंने अपनी पहचान सार्वजनिक नहीं की, परंतु आँकड़ों से परिचित थे, ने निजी क्षेत्र के व्यय में तीव्र वृद्धि का कारण "कोविड के बाद की परिस्थितियों" को बताया।
- The "realisation" that investments in **R&D** were "critical" to companies' future prompted greater investments, he told **The Hindu**.



उन्होंने द हिंदू से कहा कि कंपनियों को यह “अहसास” हुआ कि **अनुसंधान एवं विकास (R&D)** में निवेश उनके भविष्य के लिए “अत्यंत महत्वपूर्ण” है, जिसके परिणामस्वरूप निवेश में वृद्धि हुई।

- Though nearly **8,000-odd companies** populated the **DST** database, **90%** of the **R&D** investments came from **500-odd companies**.
यद्यपि डीएसटी के डेटाबेस में लगभग **8,000 कंपनियाँ** शामिल थीं, फिर भी **R&D** निवेश का **90%** हिस्सा लगभग **500 कंपनियों** से प्राप्त हुआ।
- He underlined that the **DST** had not made any methodological changes to how it sourced this data from industries, which is done through self-reported questionnaires.
उन्होंने यह भी स्पष्ट किया कि **डीएसटी** ने उद्योगों से आँकड़े एकत्र करने की पद्धति में कोई परिवर्तन नहीं किया है, और यह जानकारी स्वयं-रिपोर्टित प्रश्नावलियों के माध्यम से प्राप्त की जाती है।
- Stricter requirements by **RBI** on transparently disclosing **R&D** spends may also have played a role, he added.
उन्होंने यह भी कहा कि **भारतीय रिज़र्व बैंक (आरबीआई)** द्वारा **R&D** व्यय के पारदर्शी प्रकटीकरण संबंधी कठोर आवश्यकताओं ने भी इसमें भूमिका निभाई हो सकती है।
- The expansion in spending has been accompanied by a shift in **India's** research workforce.
व्यय में इस वृद्धि के साथ **भारत** के अनुसंधान कार्यबल की संरचना में भी परिवर्तन आया है।
- The latest survey estimates that private industry employed more **full-time equivalent (FTE) R&D** personnel than government institutions in **2023-24**, with business enterprises accounting for the largest pool of researchers and technical staff engaged in core research activities.
नवीनतम सर्वेक्षण के अनुसार, **2023-24** में निजी उद्योगों ने सरकारी संस्थानों की तुलना में अधिक **पूर्णकालिक समकक्ष (एफटीई) अनुसंधान एवं विकास** कर्मियों को रोजगार दिया, और मूल अनुसंधान गतिविधियों में लगे शोधकर्ताओं तथा तकनीकी कर्मचारियों का सबसे बड़ा समूह व्यावसायिक उद्यमों में कार्यरत था।

Govt. introduces Bill to 'make it easier to do business in India'

GS III Economy
T.C.A. Sharad Raghavan
NEW DELHI

Finance Minister Nirmala Sitharaman on Tuesday introduced the Taxation and Other Laws (Amendment) Bill, 2026 in the Lok Sabha, seeking to amend several existing Acts in a bid to attract more foreign capital, make it easier to do business in India, and to push the Make in India mission.

The Taxation and Other Laws (Amendment) Bill, 2026 will amend the Payment and Settlement Systems Act, 2007, Income-Tax Act, 2025, and the Finance Act, 2026.

The Bill proposes a key tax exemption for data centres in India.

“Foreign cloud companies that use Indian data centres were earlier promised a tax exemption, but with conditions of clearing several layers of government notification and approval,” a Finance Ministry official explained.

The proposed Bill seeks to remove these approval requirements. In addition, it will allow Indian data centres to be run on a leased basis rather than only under direct ownership. “Global investment funds are typically run by skilled fund managers, and

The Taxation and Other Laws (Amendment) Bill, 2026 seeks to amend several existing Acts

India has deep talent in this field,” the official further explained. “Until now, a long and demanding list of conditions discouraged those managers from basing themselves in India, for fear that doing so might make the entire foreign fund taxable here.”

The proposed Bill seeks to slash this list of conditions, retaining only those that are expressly aimed at preventing misuse and round-tripping of money by Indians. Under the proposed rules, fund managers will be allowed to relocate to India without the foreign fund being treated as doing business in India.

Dividends paid by REITs and InvITs to their investors were tax free only if the operating company stayed in the old tax regime. However, as companies increasingly move to the new tax regime, investors risked losing this benefit.

The Bill introduced on Tuesday seeks to restore this exemption.

- In contrast, the **2020** edition of the report, based on **2017-18** data, showed government institutions, including central agencies, state organisations and higher educational institutions, as the dominant employers of **India's R&D** workforce.

इसके विपरीत, **2017-18** के आँकड़ों पर आधारित **2020** संस्करण में केंद्रीय एजेंसियों, राज्य संगठनों तथा उच्च शिक्षण संस्थानों सहित सरकारी संस्थानों को **भारत** के **R&D** कार्यबल का प्रमुख नियोजक बताया गया था।

- The report attributes the increase in private research primarily to business enterprises rather than private universities or research organisations.

रिपोर्ट के अनुसार निजी अनुसंधान में हुई वृद्धि का प्रमुख कारण निजी विश्वविद्यालय या अनुसंधान संस्थान नहीं, बल्कि व्यावसायिक उद्यम हैं।

- Of the **₹1.27 lakh crore** spent by the private sector in **2023-24**, private industry accounted for **₹1.11 lakh crore**, while **Scientific and Industrial Research Organisations** contributed **₹7,798 crore** and private higher educational institutions **₹9,164 crore**.

2023-24 में निजी क्षेत्र द्वारा किए गए **₹1.27 लाख करोड़** के अनुसंधान व्यय में से निजी उद्योग का योगदान **₹1.11 लाख करोड़** रहा, जबकि वैज्ञानिक एवं औद्योगिक अनुसंधान संगठन ने **₹7,798 करोड़** तथा निजी उच्च शिक्षण संस्थानों ने **₹9,164 करोड़** का योगदान दिया।

05A8. Govt. introduces Bill to 'make it easier to do business in India'

भारत में कारोबार करना आसान बनाने के लिए सरकार ने विधेयक प्रस्तुत

किया

- **Finance Minister Nirmala Sitharaman** on Tuesday introduced the **Taxation and Other Laws (Amendment) Bill, 2026** in the **Lok Sabha**, seeking to amend several existing Acts in a bid to attract more foreign capital, make it easier to do business in **India**, and to push the **Make in India** mission.
वित्त मंत्री निर्मला सीतारमण ने मंगलवार को **लोकसभा** में **कराधान एवं अन्य विधि (संशोधन) विधेयक, 2026** प्रस्तुत किया। इसका उद्देश्य अधिक विदेशी पूंजी आकर्षित करना, **भारत** में कारोबार करना आसान बनाना तथा **मेक इन इंडिया** मिशन को आगे बढ़ाने के लिए विभिन्न प्रचलित अधिनियमों में संशोधन करना है।
- The **Taxation and Other Laws (Amendment) Bill, 2026** will amend the **Payment and Settlement Systems Act, 2007**, **Income Tax Act, 2025**, and the **Finance Act, 2026**.
कराधान एवं अन्य विधि (संशोधन) विधेयक, 2026 के माध्यम से **भुगतान एवं निपटान प्रणाली अधिनियम, 2007**, **आयकर अधिनियम, 2025**, तथा **वित्त अधिनियम, 2026** में संशोधन किया जाएगा।
- The Bill proposes a key **tax exemption** for **data centres** in **India**.
यह विधेयक **भारत** में **डेटा केंद्रों** के लिए एक महत्वपूर्ण **कर छूट** का प्रस्ताव करता है।
- “Foreign **cloud companies** that use Indian **data centres** were earlier promised a tax exemption, but with conditions of clearing several layers of government notification and approval,” a **Finance Ministry** official explained.
वित्त मंत्रालय के एक अधिकारी ने बताया, “**भारतीय डेटा केंद्रों** का उपयोग करने वाली विदेशी **क्लाउड कंपनियों** को पहले कर छूट का आश्वासन दिया गया था, किंतु इसके साथ सरकारी अधिसूचनाओं और अनुमोदनों की अनेक प्रक्रियाएँ पूरी करने की शर्तें जुड़ी हुई थीं।”
- The proposed Bill seeks to remove these approval requirements.
प्रस्तावित विधेयक इन अनुमोदन संबंधी आवश्यकताओं को समाप्त करने का प्रयास करता है।
- In addition, it will allow Indian **data centres** to be run on a **leased basis** rather than only under direct ownership.
इसके अतिरिक्त, यह भारतीय **डेटा केंद्रों** को केवल प्रत्यक्ष स्वामित्व के बजाय **पट्टे (लीज) के आधार** पर संचालित करने की अनुमति देगा।
- “Global **investment funds** are typically run by skilled **fund managers**, and **India** has deep talent in this field,” the official further explained.
अधिकारी ने आगे कहा, “**वैश्विक निवेश कोष** सामान्यतः कुशल **फंड प्रबंधकों** द्वारा संचालित किए जाते हैं, और **भारत** के पास इस क्षेत्र में पर्याप्त प्रतिभा उपलब्ध है।”
- “Until now, a long and demanding list of conditions discouraged those managers from basing themselves in **India**, for fear that doing so might make the entire foreign fund taxable here.”
“अब तक लंबी और जटिल शर्तों की सूची के कारण वे प्रबंधक **भारत** में अपना आधार स्थापित करने से बचते थे, क्योंकि उन्हें आशंका रहती थी कि ऐसा करने पर पूरा विदेशी कोष **भारत** में कराधान के दायरे में आ सकता है।”
- The proposed Bill seeks to slash this list of conditions, retaining only those that are expressly aimed at preventing misuse and **round-tripping** of money by Indians.
प्रस्तावित विधेयक इन शर्तों की सूची को काफी कम करने का प्रयास करता है और केवल उन्हीं प्रावधानों को बनाए रखता है, जिनका उद्देश्य भारतीयों द्वारा धन के दुरुपयोग तथा **राउंड-ट्रिपिंग** को रोकना है।
- Under the proposed rules, **fund managers** will be allowed to relocate to **India** without the foreign fund being treated as doing business in **India**.
प्रस्तावित नियमों के अनुसार, **फंड प्रबंधकों** को **भारत** में स्थानांतरित होने की अनुमति होगी, बिना इस आशंका के कि विदेशी निवेश कोष को **भारत** में कारोबार करने वाला माना जाएगा।
- Dividends paid by **REITs** and **InvITs** to their investors were tax free only if the operating company stayed in the old tax regime.
आरईआईटी (REITs) और **इनविट (InvITs)** द्वारा अपने निवेशकों को दिया जाने वाला लाभांश तभी कर-मुक्त था, जब परिचालन करने वाली कंपनी पुरानी कर व्यवस्था में बनी रहती थी।
- However, as companies increasingly move to the **new tax regime**, investors risked losing this benefit.

हालाँकि, जैसे-जैसे कंपनियाँ नई कर व्यवस्था को अपनाने लगीं, निवेशकों के सामने इस लाभ को खोने का जोखिम उत्पन्न हो गया।

- The Bill introduced on Tuesday seeks to restore this exemption.
मंगलवार को प्रस्तुत विधेयक इस कर छूट को पुनः बहाल करने का प्रयास करता है।

Essential stockpiling for a mineral-driven future

GS III: Economy

OPINION

Meheli Roy Choudhury

Humans have been stockpiling since the dawn of time – it is etched into the fabric of our very being. What began with fruits and vegetables, proceeded towards grain and salt and eventually to strategic oil reserves that defined the geopolitics of the 20th century. Societies and ethnic communities across India, China, West Asia and North Africa even stockpile gold for a rainy day, apart from a religious and cultural underpinning. In the energy and hydrocarbon sector, stockpiles of copper, natural gas and coal is routine, especially in this multi-crisis laden Anthropocene. Today, this fundamental instinct for preservation has strongly shifted towards critical materials needed to power our digital and green energy transitions. The geopolitical headwinds have escalated the urgency of the matter and the world is taking note with conversations on energy transition taking an entirely new form.

Critical initiative

In 2025, the Quadrilateral Security Dialogue (Quad) launched a \$20 billion Critical Minerals Initiative Framework to fortify regional supply chains. The Group of Seven (G7) summit in Evian in 2026 took forward the discussions, reiterating the commitment in establishing a standards-based market.

Prescient to this, in 2025, India had already seeded ₹500 crore towards stockpiling initiatives through the National Critical Mineral Mission (NCMM). While India's current domestic demand



Precious goods: A sample of rare earth materials at Australian mining company Viridis Mining. REUTERS



Dynamic price bands are an effective safety hatch ensuring balance. For this reason, multilateral stockpiling must be made with trusted partners which will help pool storage costs

quantum for minerals like lithium, cobalt and heavy rare-earth elements is lower than that of highly industrialised nations, modelling studies report a burgeoning demand calculus, nonetheless, which will eventually create a supply mismatch. As India explores and develops its own mines and builds a mine-to-manufacturing ecosystem to address the lacunae of the midstream layer, parallel overseas acquisition of assets has already begun to satiate interim demand. However, both domestic capacity creation and overseas resource development are inherently long-gestation processes. In this context, stockpiling has been touted as a complementary and lateral strategy: pro-

viding a buffer against immediate supply disruptions and demand shocks while longer-term supply chains and processing capabilities are being established.

Why stockpiling is essential is not a question as much as how and in what form it will unfold. Stockpiling raw ores or intermediate concentrates is not of immediate use.

Tackling supply shock

In the event of an external supply shock, the onshore industrial capacity will be required to convert raw ores into usable manufacturing inputs, which has a long lead time. To ensure genuine supply security, any Indian reserve, either housed locally or tapped into from friendly shores, must be strictly composed of processed minerals, refined rare earth oxides and finished components (such as permanent magnets). Given India's embryonic midstream refining capabilities, agreements must be in the shape of intermediate goods rather than raw materials.

Complementary concerns appear when we dive

deeper into practical operations of storage and rotational mechanisms. Advanced minerals and refined oxides are highly susceptible to material degradation. Moisture-sensitive rare earth elements and oxidation-prone reactive metals require stringent contamination prevention protocols, including climate-controlled warehousing and nitrogen-atmosphere storage. Furthermore, to prevent technological obsolescence and material decay, these reserves cannot remain static. A continuous rotational cycle is required, meaning the government must constantly release older stock into the domestic market while procuring fresh supplies into the stockpile. Maintaining this highly specialised infrastructure demands immense ongoing capital expenditure, commercial expertise and multi-stakeholder involvement, further complicating the viability of a solitary national stockpiling strategy for India.

Pricing of these stockpiles must be deliberated with much caution and

without abandon. An uncoordinated stockpiling attempt risks heightening price volatility which it is supposed to hedge against. It inflates global demand, worsening the very shortages it aims to solve. Economic modelling indicates that if seven major economies simultaneously built six-month reserves, the aggregate demand could consume up to 34% of the global annual cobalt supply and 10% of the lithium supply, triggering massive market shocks and artificial price spikes.

Price floors

Price floors are often considered a safe option by guaranteeing a minimum purchase price which only solves a problem during underinvestment but rarely addresses scarcity which is more rampant; dynamic price bands are a much better and effective safety hatch by ensuring balance. For this reason, multilateral stockpiling arrangements must be made with trusted partners which will help pool storage costs, improve resilience, and reduce market distortions, provided they include access safeguards for all stakeholders during crises.

To understand price bands, take floor price at \$12,000, ceiling trigger at \$30,000. When price falls below floor price, nations must buy aggressively in a coordinated manner, based on current need, not future want: this supports producers through injecting liquidity and nations by building reserves. If price stays comfortably in between, gradually stocks can be bought and if it goes above ceiling price, then stocks must be released in the market to ease shortages, prevent excessive price escalation and cool an overheated market. Thus,

they provide dual protection against both market gluts and supply shocks, ensuring stability for producers, consumers, and governments alike.

Optimal strategy

India's optimal strategy involves participating in a coordinated stockpiling platform, potentially housed within the G7, which also encompasses Quad members, tapping into an already mature stockpiling ecosystem without having to shoulder the financial and logistical burden of maintaining large-scale strategic reserves independently. However, collaborating with deeply industrialised powers requires India to establish robust hedging mechanisms to ensure equitable access, relative to the size of contribution.

To protect its interests in friend-shoring scenarios, India must advocate for strict operational parameters. These should include staggered procurement timelines to avoid demand shocks during the stockpile accumulation phase, pre-agreed market, supply-chain, or geopolitical triggers that automatically activate reserve releases without being subject to vetoes or delays, and minimum guaranteed allocation baselines that ensure emerging economies such as India are not sidelined by the significantly larger consumption requirements of advanced industrial powers, thus helping balance the benefits of collective resource pooling with the preservation of sovereign interests and supply security.

(Meheli Roy Choudhury is a Research Associate at Centre for Climate Change and Energy Transition, Chintan Research Foundation. Views are personal.)

05A8. Essential stockpiling for a mineral-driven future
खनिज-आधारित भविष्य के लिए आवश्यक भंडारण

- Humans have been **stockpiling** since the dawn of time — it is etched into the fabric of our very being.
मनुष्य आदिकाल से ही **भंडारण (Stockpiling)** करता आया है — यह हमारी मूल प्रवृत्ति का अभिन्न अंग है।
- What began with **fruits** and **vegetables**, proceeded towards **grain** and **salt** and eventually to **strategic oil reserves** that defined the geopolitics of the **20th century**.
जो प्रक्रिया **फलों** और **सब्जियों** से आरंभ हुई, वह **अनाज** और **नमक** तक पहुँची तथा अंततः **रणनीतिक तेल भंडारों** तक विकसित हुई, जिन्होंने **20वीं शताब्दी** की भू-राजनीति को परिभाषित किया।
- Societies and ethnic communities across **India**, **China**, **West Asia** and **North Africa** even stockpile **gold** for a rainy day, apart from a religious and cultural underpinning.
भारत, **चीन**, **पश्चिम एशिया** और **उत्तरी अफ्रीका** के समाज तथा जातीय समुदाय धार्मिक एवं सांस्कृतिक आधारों के अतिरिक्त कठिन समय के लिए **सोने** का भी भंडारण करते हैं।
- In the **energy** and **hydrocarbon** sector, stockpiles of **copper**, **natural gas** and **coal** is routine, especially in this multi-crisis laden **Anthropocene**.
ऊर्जा और **हाइड्रोकार्बन** क्षेत्र में **ताँबा**, **प्राकृतिक गैस** और **कोयले** का भंडारण सामान्य बात है, विशेषकर इस बहु-संकटग्रस्त **एंथ्रोपोसीन युग** में।
- Today, this fundamental instinct for preservation has strongly shifted towards **critical materials** needed to power our **digital** and **green energy transitions**.
आज संरक्षण की यह मूल प्रवृत्ति हमारे **डिजिटल** और **हरित ऊर्जा संक्रमण** के लिए आवश्यक **महत्वपूर्ण खनिजों (Critical Materials)** की ओर केंद्रित हो गई है।
- The **geopolitical headwinds** have escalated the urgency of the matter and the world is taking note with conversations on **energy transition** taking an entirely new form.
भू-राजनीतिक चुनौतियों ने इस विषय की तात्कालिकता बढ़ा दी है और **ऊर्जा संक्रमण** पर वैश्विक चर्चा अब एक नए स्वरूप में सामने आ रही है।

Critical initiative

महत्वपूर्ण पहल

- In 2025, the **Quadrilateral Security Dialogue (Quad)** launched a **\$20 billion Critical Minerals Initiative Framework** to fortify regional **supply chains**.
2025 में क्वाड (Quadrilateral Security Dialogue) ने क्षेत्रीय **आपूर्ति श्रृंखलाओं** को सुदृढ़ करने के लिए **20 अरब डॉलर का क्रिटिकल मिनेरल्स इनिशिएटिव फ्रेमवर्क** प्रारंभ किया।
- The **Group of Seven (G7)** summit in **Evian** in **2026** took forward the discussions, reiterating the commitment to establishing a **standards-based market**.
2026 में एवियन में आयोजित **जी-7 शिखर सम्मेलन** ने इस चर्चा को आगे बढ़ाते हुए **मानक-आधारित बाजार** स्थापित करने की प्रतिबद्धता दोहराई।
- Prescient to this, in **2025**, **India** had already seeded **₹500 crore** towards stockpiling initiatives through the **National Critical Mineral Mission (NCMM)**.
इससे पूर्व ही **2025 में भारत** ने **राष्ट्रीय महत्वपूर्ण खनिज मिशन (NCMM)** के माध्यम से भंडारण पहलों के लिए **₹500 करोड़** का प्रारंभिक आवंटन कर दिया था।
- While **India's** current domestic demand for minerals like **lithium**, **cobalt** and **heavy rare-earth elements** is lower than that of highly industrialised nations, modelling studies report a burgeoning demand which will eventually create a **supply mismatch**.
यद्यपि **भारत** में **लिथियम**, **कोबाल्ट** तथा **भारी दुर्लभ मृदा तत्वों** की वर्तमान घरेलू मांग अत्यधिक औद्योगिक देशों की तुलना में कम है, फिर भी विभिन्न मॉडल अध्ययन भविष्य में तीव्र मांग वृद्धि तथा **आपूर्ति असंतुलन** की संभावना दर्शाते हैं।
- As **India** explores and develops its own mines and builds a **mine-to-manufacturing ecosystem** to address the lacunae of the **midstream layer**, parallel **overseas acquisition** of assets has already begun to satiate interim demand.
जैसे-जैसे **भारत** अपनी खानों का अन्वेषण एवं विकास कर रहा है तथा **माइन-टू-मैनुफैक्चरिंग पारिस्थितिकी**



तंत्र विकसित कर मिडस्ट्रीम क्षेत्र की कमियों को दूर करने का प्रयास कर रहा है, उसी के समानांतर अंतरिम मांग को पूरा करने हेतु विदेशों में खनिज परिसंपत्तियों का अधिग्रहण भी प्रारंभ हो चुका है।

- However, both **domestic capacity creation** and **overseas resource development** are inherently **long-gestation** processes.
हालाँकि, घरेलू क्षमता निर्माण और विदेशी संसाधन विकास दोनों ही स्वाभाविक रूप से दीर्घकालिक प्रक्रियाएँ हैं।
- In this context, **stockpiling** has been touted as a complementary and lateral strategy, providing a **buffer** against immediate **supply disruptions** and **demand shocks** while longer-term supply chains and processing capabilities are being established.
इस संदर्भ में भंडारण को एक पूरक रणनीति के रूप में देखा गया है, जो दीर्घकालिक आपूर्ति श्रृंखलाओं और प्रसंस्करण क्षमताओं के विकास के दौरान तत्काल आपूर्ति व्यवधानों तथा मांग संबंधी झटकों के विरुद्ध सुरक्षा कवच प्रदान कर सकता है।
- Why **stockpiling** is essential is not a question as much as how and in what form it will unfold.
प्रश्न यह नहीं है कि भंडारण आवश्यक क्यों है, बल्कि यह है कि इसे किस प्रकार और किस स्वरूप में लागू किया जाएगा।
- Stockpiling **raw ores** or **intermediate concentrates** is not of immediate use.
कच्चे अयस्कों या मध्यवर्ती सांद्रित पदार्थों का भंडारण तत्काल उपयोगी नहीं होता।

Tackling supply shock आपूर्ति झटकों से निपटना

- In the event of an external **supply shock**, the onshore industrial capacity will be required to convert **raw ores** into usable manufacturing inputs, which has a long lead time.
यदि बाहरी आपूर्ति झटका उत्पन्न होता है, तो कच्चे अयस्कों को उपयोगी विनिर्माण सामग्री में परिवर्तित करने के लिए घरेलू औद्योगिक क्षमता की आवश्यकता होगी, जिसमें लंबा समय लगता है।
- To ensure genuine **supply security**, any Indian reserve, either housed locally or tapped into from friendly shores, must be strictly composed of **processed minerals**, **refined rare earth oxides** and **finished components** such as **permanent magnets**.
वास्तविक आपूर्ति सुरक्षा सुनिश्चित करने के लिए भारत का कोई भी भंडार, चाहे वह देश में रखा गया हो या मित्र देशों से प्राप्त किया गया हो, उसमें केवल प्रसंस्कृत खनिज, परिष्कृत दुर्लभ मृदा ऑक्साइड तथा स्थायी चुंबकों (Permanent Magnets) जैसे तैयार घटक ही होने चाहिए।
- Given **India's** embryonic **midstream refining** capabilities, agreements must be in the shape of **intermediate goods** rather than **raw materials**.
भारत की अभी प्रारंभिक अवस्था में मौजूद मिडस्ट्रीम परिशोधन क्षमता को देखते हुए, समझौते कच्चे माल के बजाय मध्यवर्ती उत्पादों के रूप में होने चाहिए।
- Complementary concerns appear when we dive deeper into practical operations of **storage** and **rotational mechanisms**.
जब भंडारण और रोटेशन तंत्र के व्यावहारिक संचालन पर विचार किया जाता है, तो अनेक अतिरिक्त चुनौतियाँ सामने आती हैं।
- Advanced minerals and **refined oxides** are highly susceptible to **material degradation**.
उन्नत खनिज तथा परिष्कृत ऑक्साइड सामग्री के क्षरण के प्रति अत्यधिक संवेदनशील होते हैं।
- Moisture-sensitive **rare earth elements** and oxidation-prone **reactive metals** require stringent contamination prevention protocols, including **climate-controlled warehousing** and **nitrogen-atmosphere storage**.
नमी-संवेदनशील दुर्लभ मृदा तत्वों तथा ऑक्सीकरण-प्रवण प्रतिक्रियाशील धातुओं के लिए जलवायु-नियंत्रित गोदामों और नाइट्रोजन वातावरण में भंडारण सहित कठोर संरक्षण उपाय आवश्यक हैं।
- Furthermore, to prevent **technological obsolescence** and **material decay**, these reserves cannot remain static.
इसके अतिरिक्त, प्रौद्योगिकीय अप्रचलन और सामग्री क्षरण से बचने के लिए ये भंडार स्थिर नहीं रह सकते।



- A continuous **rotational cycle** is required, meaning the government must constantly release older stock into the domestic market while procuring fresh supplies into the stockpile.
एक निरंतर **रोटेशन चक्र** आवश्यक है, जिसके अंतर्गत सरकार को पुराने भंडार को लगातार घरेलू बाजार में जारी करना होगा और उसके स्थान पर नई सामग्री का अधिग्रहण करना होगा।
- Maintaining this highly specialised infrastructure demands immense ongoing **capital expenditure, commercial expertise** and **multi-stakeholder involvement**, further complicating the viability of a solitary national stockpiling strategy for **India**.
इस अत्यधिक विशिष्ट अवसंरचना को बनाए रखने के लिए निरंतर **पूंजीगत व्यय, व्यावसायिक विशेषज्ञता** तथा **बहु-हितधारक सहभागिता** की आवश्यकता होती है, जिससे **भारत** के लिए अकेली राष्ट्रीय भंडारण रणनीति का संचालन और अधिक जटिल हो जाता है।
- Pricing of these **stockpiles** must be deliberated with much caution and without abandon.
इन **भंडारों** के मूल्य निर्धारण पर अत्यंत सावधानीपूर्वक विचार किया जाना चाहिए।
- An uncoordinated **stockpiling** attempt risks heightening **price volatility**, which it is supposed to hedge against.
असमन्वित **भंडारण** का प्रयास **मूल्य अस्थिरता** को बढ़ा सकता है, जबकि इसका उद्देश्य उसी से सुरक्षा प्रदान करना है।
- It inflates **global demand**, worsening the very shortages it aims to solve.
यह **वैश्विक मांग** को बढ़ा देता है और उन्हीं कमी की परिस्थितियों को और गंभीर बना देता है जिन्हें दूर करने का प्रयास किया जा रहा होता है।
- Economic modelling indicates that if **seven major economies** simultaneously built **six-month reserves**, the aggregate demand could consume up to **34%** of the global annual **cobalt** supply and **10%** of the **lithium** supply, triggering massive **market shocks** and artificial **price spikes**.
आर्थिक मॉडलिंग से संकेत मिलता है कि यदि **सात प्रमुख अर्थव्यवस्थाएँ** एक साथ **छह माह के भंडार** तैयार करें, तो कुल मांग वैश्विक वार्षिक **कोबाल्ट** आपूर्ति का लगभग **34%** तथा **लिथियम** आपूर्ति का लगभग **10%** उपभोग कर सकती है, जिससे बड़े **बाजार झटके** और **कृत्रिम मूल्य वृद्धि** उत्पन्न हो सकती है।

Price floors

मूल्य न्यूनतम सीमा (प्राइस फ्लोर)

- Price floors** are often considered a safe option by guaranteeing a minimum purchase price, which only solves a problem during **underinvestment** but rarely addresses **scarcity**, which is more rampant; **dynamic price bands** are a much better and effective safety hatch by ensuring balance.
मूल्य न्यूनतम सीमा (प्राइस फ्लोर) को प्रायः सुरक्षित विकल्प माना जाता है क्योंकि यह न्यूनतम खरीद मूल्य की गारंटी देती है। किंतु यह केवल **अल्प निवेश (Underinvestment)** की स्थिति में समस्या का समाधान करती है, जबकि अधिक व्यापक **कमी (Scarcity)** की समस्या का शायद ही समाधान कर पाती है। इसके विपरीत, **गतिशील मूल्य बैंड (Dynamic Price Bands)** संतुलन बनाए रखते हुए कहीं अधिक प्रभावी सुरक्षा तंत्र सिद्ध होते हैं।
- For this reason, **multilateral stockpiling arrangements** must be made with trusted partners, which will help pool storage costs, improve resilience, and reduce market distortions, provided they include access safeguards for all stakeholders during crises.
इसी कारण **बहुपक्षीय भंडारण व्यवस्थाएँ (Multilateral Stockpiling Arrangements)** विश्वसनीय साझेदारों के साथ स्थापित की जानी चाहिए, जिससे भंडारण लागत साझा होगी, लचीलापन बढ़ेगा तथा बाजार विकृतियाँ कम होंगी, बशर्ते कि संकट के समय सभी हितधारकों के लिए समान पहुँच सुनिश्चित करने वाले सुरक्षा प्रावधान भी शामिल हों।

- To understand **price bands**, take **floor price** at \$12,000, **ceiling trigger** at \$30,000.
मूल्य बैंड (Price Bands) को समझने के लिए मान लीजिए कि **न्यूनतम मूल्य (Floor Price)** 12,000 डॉलर है तथा **अधिकतम सीमा सक्रिय होने का स्तर (Ceiling Trigger)** 30,000 डॉलर है।
- When price falls below **floor price**, nations must buy aggressively in a coordinated manner, based on current need, not future want; this supports producers through injecting liquidity and nations by building reserves.
जब मूल्य **न्यूनतम मूल्य** से नीचे चला जाए, तब देशों को वर्तमान आवश्यकता के आधार पर, भविष्य की संभावित मांग के आधार पर नहीं, समन्वित रूप से बड़े पैमाने पर खरीद करनी चाहिए। इससे उत्पादकों को तरलता प्राप्त होती है तथा देश अपने भंडार का निर्माण कर पाते हैं।
- If price stays comfortably in between, gradually stocks can be bought, and if it goes above **ceiling price**, then stocks must be released in the market to ease shortages, prevent excessive price escalation and cool an overheated market.
यदि मूल्य दोनों सीमाओं के बीच बना रहता है, तो धीरे-धीरे भंडार खरीदा जा सकता है। यदि मूल्य **अधिकतम सीमा** से ऊपर चला जाए, तो भंडार को बाज़ार में जारी किया जाना चाहिए ताकि कमी दूर हो, अत्यधिक मूल्य वृद्धि रोकी जा सके तथा अत्यधिक गर्म हो चुके बाज़ार को संतुलित किया जा सके।
- Thus, they provide dual protection against both market gluts and **supply shocks**, ensuring stability for producers, consumers, and governments alike.
इस प्रकार, यह व्यवस्था बाज़ार में अधिक आपूर्ति तथा **आपूर्ति झटकों (Supply Shocks)** दोनों के विरुद्ध दोहरी सुरक्षा प्रदान करती है और उत्पादकों, उपभोक्ताओं तथा सरकारों के लिए समान रूप से स्थिरता सुनिश्चित करती है।

Optimal strategy

सर्वोत्तम रणनीति

- India's** optimal strategy involves participating in a coordinated **stockpiling platform**, potentially housed within the **G7**, which also encompasses **Quad** members, tapping into an already mature stockpiling ecosystem without having to shoulder the financial and logistical burden of maintaining large-scale strategic reserves independently.
भारत की सर्वोत्तम रणनीति एक समन्वित **भंडारण मंच (Stockpiling Platform)** में भागीदारी करना है, जिसे संभावित रूप से **जी-7 (G7)** के अंतर्गत स्थापित किया जा सकता है और जिसमें **क्वाड (Quad)** के सदस्य भी शामिल हैं। इससे भारत बिना बड़े पैमाने पर रणनीतिक भंडारों को स्वतंत्र रूप से बनाए रखने के वित्तीय एवं लॉजिस्टिक बोझ को उठाए, पहले से विकसित भंडारण तंत्र का लाभ प्राप्त कर सकता है।
- However, collaborating with deeply industrialised powers requires **India** to establish robust **hedging mechanisms** to ensure equitable access, relative to the size of contribution.
किन्तु अत्यधिक औद्योगीकृत देशों के साथ सहयोग करने के लिए **भारत** को मजबूत **हेजिंग तंत्र (Hedging Mechanisms)** स्थापित करने होंगे, ताकि प्रत्येक सदस्य को उसके योगदान के अनुपात में न्यायसंगत पहुँच सुनिश्चित की जा सके।
- To protect its interests in **friend-shoring** scenarios, **India** must advocate for strict operational parameters.
फ्रेंड-शोरिंग (Friend-shoring) की परिस्थितियों में अपने हितों की रक्षा के लिए **भारत** को कठोर परिचालन मानकों का समर्थन करना चाहिए।
- These should include **staggered procurement timelines** to avoid demand shocks during the stockpile accumulation phase, pre-agreed market, supply-chain, or geopolitical triggers that automatically activate reserve releases without being subject to vetoes or delays, and minimum guaranteed allocation baselines that ensure emerging economies such as **India** are not sidelined by the significantly larger consumption requirements of advanced industrial powers, thus helping balance the benefits of collective resource pooling with the preservation of sovereign interests and **supply security**.



इन प्रावधानों में चरणबद्ध खरीद समय-सीमा (Staggered Procurement Timelines) शामिल होनी चाहिए ताकि भंडार निर्माण के दौरान मांग संबंधी झटकों से बचा जा सके। साथ ही, पूर्व-निर्धारित बाज़ार, आपूर्ति शृंखला, अथवा भूराजनीतिक संकेतक होने चाहिए, जो बिना किसी वीटो या विलंब के स्वतः भंडार जारी करने की प्रक्रिया प्रारंभ कर दें। इसके अतिरिक्त, न्यूनतम गारंटीकृत आवंटन मानक भी होने चाहिए, जिससे भारत जैसे उभरते हुए देशों को विकसित औद्योगिक शक्तियों की कहीं अधिक उपभोग आवश्यकताओं के कारण उपेक्षित न किया जाए। इससे सामूहिक संसाधन-साझाकरण के लाभों तथा राष्ट्रीय हितों एवं आपूर्ति सुरक्षा के संरक्षण के बीच संतुलन बनाए रखने में सहायता मिलेगी।

GS Paper III: Science and Technology		05 August 2026
TOPICS COVERED		
05A8	'Six-in-one vaccine may boost immunisation programme' 'छह-इन-वन टीका टीकाकरण कार्यक्रम को सुदृढ़ बना सकता है'	
05A8	3 widely used medicines classified as carcinogenic by WHO research agency डब्ल्यूएचओ की अनुसंधान एजेंसी द्वारा व्यापक रूप से उपयोग की जाने वाली 3 दवाओं को कैंसरजनक वर्गीकृत किया गया	
05A8	SpaceX rocket stage hurtles toward moon, astronomers hot on its trail चंद्रमा की ओर बढ़ रहा स्पेसएक्स रॉकेट का चरण, खगोलविद उसकी गतिविधियों पर निकटता से नज़र रख रहे हैं।	



GS III: S&T

'Six-in-one vaccine may boost immunisation programme'

Introducing the hexavalent (six-in-one) vaccine into India's Universal Immunisation Programme could improve the efficiency of childhood immunisation programme, according to a study conducted by the Union Health Ministry along with the George Institute for Global Health India; the Gates Foundation; Gavi, the Vaccine Alliance; and John Snow India Private Limited. A hexavalent vaccine is a combination that protects infants against diphtheria, tetanus, pertussis (whooping cough), Hepatitis B, polio, and Haemophilus influenzae type b (Hib) in a single injection. It eases the workload of frontline health workers, lowers cold-chain requirements, and saves caregivers' time.

05A8. 'Six-in-one vaccine may boost immunisation programme'

'छह-इन-वन टीका टीकाकरण कार्यक्रम को सुदृढ़ बना सकता है'

- Introducing the **hexavalent (six-in-one) vaccine** into India's **Universal Immunisation Programme** could improve the efficiency of the **childhood immunisation programme**, according to a study conducted by the **Union Health Ministry** along with the **George Institute for Global Health India**; the **Gates Foundation**; **Gavi, the Vaccine Alliance**; and **John Snow India Private Limited**.

हेक्सावैलेंट (छह-इन-वन) टीके को भारत के सार्वभौमिक टीकाकरण कार्यक्रम (Universal Immunisation Programme) में शामिल करने से बाल टीकाकरण कार्यक्रम की दक्षता में सुधार हो सकता है। यह निष्कर्ष केंद्रीय स्वास्थ्य मंत्रालय, जॉर्ज इंस्टीट्यूट फॉर ग्लोबल हेल्थ इंडिया, गेट्स फाउंडेशन, गावी (वैक्सिन एलायंस) तथा जॉन स्नो इंडिया प्राइवेट लिमिटेड द्वारा संयुक्त रूप से किए गए एक अध्ययन में सामने आया है।

- A **hexavalent vaccine** is a combination that protects infants against **diphtheria, tetanus, pertussis (whooping cough), Hepatitis B, polio, and Haemophilus influenzae type b (Hib)** in a single injection.

हेक्सावैलेंट टीका एक संयोजित टीका है, जो शिशुओं को एक ही इंजेक्शन के माध्यम से डिफ्थीरिया, टिटनेस, पर्तुसिस (काली खाँसी), हेपेटाइटिस-बी,

पोलियो तथा हीमोफिलस इन्फ्लुएंज़ा टाइप-बी (हिब) से सुरक्षा प्रदान करता है।



- It eases the workload of **frontline health workers**, lowers **cold-chain** requirements, and saves caregivers' time.

यह अग्रिम पंक्ति के स्वास्थ्य कर्मियों के कार्यभार को कम करता है, कोल्ड-चेन की आवश्यकताओं को घटाता है तथा देखभाल करने वालों के समय की भी बचत करता है।

3 widely used medicines classified as carcinogenic by WHO research agency

GS III: S&T

Bindu Shajan Perappadan
NEW DELHI

Three widely prescribed medicines used to treat high blood pressure, fungal infections, and organ transplant rejection have been classified as "carcinogenic to humans" (Group 1) by the International Agency for Research on Cancer (IARC), the World Health Organization (WHO)'s cancer research agency.

Experts said the classification is a hazard identification and should not prompt patients to discontinue treatment without consulting their doctors.

The three medicines – hydrochlorothiazide (hypertension), voriconazole (fungal infections), and tacrolimus (an immunosuppressant preventing transplant rejection) – are on the WHO Model List of Es-

sential Medicines, prescribed to millions worldwide. The assessment, published as Volume 137 of the IARC Monographs, expands on conclusions first released in *The Lancet Oncology* in November 2024.

There is sufficient evidence that hydrochlorothiazide causes squamous cell skin carcinoma and lip cancer, IARC said.

Voriconazole was similarly linked to squamous cell skin carcinoma in transplant recipients on prolonged therapy, through the same phototoxic mechanism. Tacrolimus was linked to non-Hodgkin lymphoma and post-transplant lymphoproliferative disorder, with limited evidence for leukaemia and skin carcinoma.

Kabir Sardana, Director, Professor and Head of the Department, Department

of Dermatology, at Atal Bihari Vajpayee Institute of Medical Sciences and Dr. Ram Manohar Lohia Hospital, said: "Hydrochlorothiazide has long been recognised as carrying a risk, especially in rural areas, the Northeast, hilly and coastal regions, and among outdoor workers.

Voriconazole is another concern, not only because of its known association with skin cancer risk, but also because it is frequently prescribed without labelled indications, including for fungal infections caused by *Trichophyton indotineae*. We cannot ignore these warnings in a country where irrational prescribing, over-the-counter availability, and poor adherence to ethical prescribing and dispensing practices remain significant challenges."

05A8. 3 widely used medicines classified as carcinogenic by WHO research agency

डब्ल्यूएचओ की अनुसंधान एजेंसी द्वारा व्यापक रूप से उपयोग की जाने वाली 3 दवाओं को कैंसरजनक वर्गीकृत किया गया

- Three widely prescribed **medicines** used to treat **high blood pressure**, **fungal infections**, and **organ transplant rejection** have been classified as "carcinogenic to humans" (Group 1) by the **International Agency for Research on Cancer (IARC)**, the **World Health Organization (WHO)**'s cancer research agency.

उच्च रक्तचाप, फंगल संक्रमण तथा अंग प्रत्यारोपण अस्वीकृति के उपचार में व्यापक रूप से प्रयुक्त तीन दवाओं को विश्व स्वास्थ्य संगठन (WHO) की कैंसर अनुसंधान एजेंसी इंटरनेशनल एजेंसी फॉर रिसर्च ऑन कैंसर (IARC) ने "मनुष्यों के लिए कैंसरजनक (समूह-1)" के रूप में वर्गीकृत किया है।

- Experts said the classification is a **hazard identification** and should not prompt patients to discontinue treatment without consulting their **doctors**.
विशेषज्ञों ने कहा कि यह वर्गीकरण **जोखिम की पहचान (Hazard Identification)** है और इसके आधार पर रोगियों को अपने **चिकित्सक** से परामर्श किए बिना उपचार बंद नहीं करना चाहिए।
- The three medicines — **hydrochlorothiazide (hypertension)**, **voriconazole (fungal infections)**, and **tacrolimus (an immunosuppressant preventing transplant rejection)** — are on the **WHO Model List of Essential Medicines**, prescribed to millions worldwide.
ये तीन दवाएँ — **हाइड्रोक्लोरोथियाज़ाइड (उच्च रक्तचाप)**, **वोरिकोनाज़ोल (फंगल संक्रमण)** तथा **टैक्रोलिमस (प्रतिरक्षा-दमनकारी दवा, जो प्रत्यारोपण अस्वीकृति को रोकती है)** — **डब्ल्यूएचओ की आवश्यक औषधियों की मॉडल सूची** में शामिल हैं और विश्वभर में लाखों रोगियों को दी जाती हैं।
- The assessment, published as **Volume 137** of the **IARC Monographs**, expands on conclusions first released in **The Lancet Oncology** in **November 2024**.
यह मूल्यांकन **IARC मोनोग्राफ के खंड 137** के रूप में प्रकाशित किया गया है और **नवंबर 2024 में द लैंसेट ऑन्कोलॉजी** में प्रकाशित निष्कर्षों का विस्तार करता है।
- There is sufficient evidence that **hydrochlorothiazide** causes **squamous cell skin carcinoma** and **lip cancer**, IARC said.
IARC ने कहा कि पर्याप्त प्रमाण उपलब्ध हैं कि **हाइड्रोक्लोरोथियाज़ाइड** **स्क्वैमस सेल त्वचा कार्सिनोमा** तथा **होंठ के कैंसर** का कारण बन सकती है।
- Voriconazole** was similarly linked to **squamous cell skin carcinoma** in **transplant recipients** on prolonged therapy, through the same **phototoxic mechanism**.
इसी प्रकार **वोरिकोनाज़ोल** को दीर्घकालिक उपचार प्राप्त कर रहे **प्रत्यारोपण प्राप्त रोगियों** में उसी **प्रकाश-विषाक्त (फोटोटॉक्सिक) तंत्र** के माध्यम से **स्क्वैमस सेल त्वचा कार्सिनोमा** से जोड़ा गया है।
- Tacrolimus** was linked to **non-Hodgkin lymphoma** and **post-transplant lymphoproliferative disorder**, with limited evidence for **leukaemia** and **skin carcinoma**.
टैक्रोलिमस को **नॉन-हॉजकिन लिम्फोमा** तथा **प्रत्यारोपण-उपरांत लिम्फोप्रोलिफेरेटिव विकार** से जोड़ा गया है, जबकि **ल्यूकेमिया** तथा **त्वचा कार्सिनोमा** के संबंध में सीमित प्रमाण उपलब्ध हैं।
- Kabir Sardana, Director, Professor and Head of the Department of Dermatology at Atal Bihari Vajpayee Institute of Medical Sciences and Dr. Ram Manohar Lohia Hospital**, said: “**Hydrochlorothiazide** has long been recognised as carrying a risk, especially in **rural areas, the Northeast, hilly and coastal regions, and among outdoor workers**.”
अटल बिहारी वाजपेयी आयुर्विज्ञान संस्थान एवं डॉ. राम मनोहर लोहिया अस्पताल के त्वचा रोग विभाग के निदेशक, प्रोफेसर एवं विभागाध्यक्ष **कबीर सरदाना** ने कहा, “**हाइड्रोक्लोरोथियाज़ाइड** से जुड़े जोखिम को लंबे समय से स्वीकार किया गया है, विशेषकर **ग्रामीण क्षेत्रों, पूर्वोत्तर भारत, पर्वतीय एवं तटीय क्षेत्रों तथा खुले वातावरण में कार्य करने वाले श्रमिकों** के बीच।”
- “**Voriconazole** is another concern, not only because of its known association with **skin cancer** risk, but also because it is frequently prescribed without labelled indications, including for **fungal infections** caused by **Trichophyton indotineae**.
“**वोरिकोनाज़ोल** भी चिंता का विषय है, क्योंकि यह केवल **त्वचा कैंसर** के जोखिम से ही नहीं जुड़ी है, बल्कि इसे अक्सर निर्धारित चिकित्सीय संकेतों के बिना भी लिखा जाता है, जिसमें **Trichophyton indotineae** से होने वाले **फंगल संक्रमण** भी शामिल हैं।

- We cannot ignore these warnings in a country where **irrational prescribing, over-the-counter availability**, and poor adherence to **ethical prescribing** and **dispensing practices** remain significant challenges.”

SpaceX rocket stage hurtles toward moon, astronomers hot on its trail

This Falcon 9 rocket had launched two satellites towards the moon in January 2025, then SpaceX abandoned the rocket's spent upper stage in an unstable orbit as it lacked enough fuel to return to the earth or head into deep space; it is now expected to hit the moon at 12:05 p.m. IST on August 5

GS III: S&T

Shreejaya Karantha

Astronomers are closely monitoring a SpaceX rocket stage that is on the way to striking the moon. This Falcon 9 rocket had launched two satellites towards the moon in January 2025. Then SpaceX abandoned the rocket's spent upper stage in an unstable orbit as it lacked enough fuel to return to the earth or head into deep space. It is now expected to hit the moon at 12:05 p.m. IST on August 5.

The independent astronomer Bill Gray's calculations showed that the rocket stage is en route to the Einstein Crater on the moon. Mr. Gray said that over the course of a year, any small changes could add up and cause the object to fly close to the moon instead of impacting it. So he gathered more data, with which by January 2026 he was 100% sure that the stage was on a collision course.

"By April, I was confident enough to announce that it would hit near the Einstein crater," he said, giving scientists roughly 3.5 months to plan observations. All details regarding this event are posted on his website, 'Project Pluto'.

Since he had tracked the rocket within days of its launch, identifying the debris was easy: "We were somewhat fortunate in this case. If an object isn't spotted until months or years after launch, identifying it can be quite challenging," Mr. Gray said.

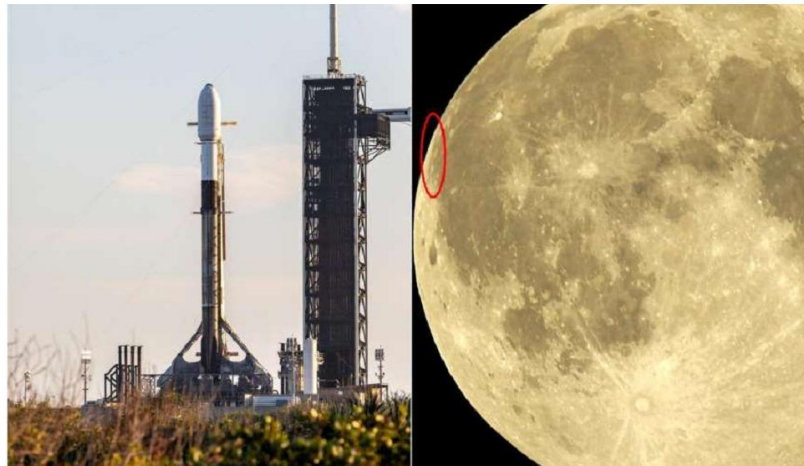
Accidental opportunity

Rather than threaten astronomy studies, experts said the collision will be an opportunity to study what happens in such events. Specifically, artificial impacts like this are rare. They are also valuable because scientists already know the impactor's mass, speed, and size in advance, unlike with natural meteoroid strikes, rendering the collision a so-called controlled source event.

The last time a similar event was observed was NASA's 2009 LCROSS mission, which deliberately crashed a rocket stage near the moon's south pole and confirmed water ice in the debris it kicked up.

What to expect

Mr. Gray has estimated the impact speed to be at 8,700 km/hr. During the time of the collision, astronomers are planning to investigate the behaviour of lunar dust, which can reveal more about the consequences of natural impacts and seismic activity. Since dust on the moon is not the same as dust anywhere on the earth, astronomers can also benefit from knowing how long dust will remain suspended or what kind of dust storms may be expected if humans want to start living on the moon.



The Falcon 9 rocket whose upper stage is going to crash on the moon (right) and the location of Einstein crater on the moon. NASA AND MAGERE HEIN (CC BY-SA)

According to a paper by U.S. Los Alamos National Laboratory planetary scientist Benjamin Fernando and colleagues (uploaded to the arXiv preprint server on July 16), three particular effects are expected from the impact.

First is a flash of light at the moment of impact, which may last less than a second. This is produced by material from the rocket stage vaporising on contact with the moon. Second, a cloud of debris or ejecta, possibly vapour, will be thrown up. Finally, a crater 20-30 m across, estimated based on past impacts and computer models.

The researchers wrote in their paper that "a double crater may be produced" if the object breaks apart, "which may occur depending on the stage's attitude at the time of impact".

However, catching the flash won't be easy because it will be on the moon's sunlit side, and any attempt will require a telescope.

Observers in India also won't get a chance to see it live as the impact will happen at noon, with the moon below the horizon then.

What if...?

According to Mr. Gray, current estimates of the impact time and location carry an uncertainty of about 5 seconds in impact time and roughly 20 km in location.

Einstein crater sits at 88° W, 15° N, close to the western edge of the near side. It is far from the equatorial and south-polar

With space agencies and private companies both targeting the moon for long-term lunar bases, mining, and satellites, accidental interference between missions may arise. Lunar scientific and cultural heritage are also at risk

regions, where most current and planned lunar landings are concentrated. So the chances of the rocket stage altering any sites that spacefaring nations consider significant are low.

Hypothetically, if this rocket stage or any other debris happened to strike any significant location on the moon – such as the Shiv Shakti point where Chandrayaan-3 landed – there currently is no legal instrument to protect them.

"There is no legal claim," Ranjana Kaul, partner at Dua Associates & Vice President, International Institute of Space Law, Paris, said. "Our outer space treaty does not recognise sovereignty in outer space." She added that just because a country happened to land at a site, it doesn't own that piece of the moon under current regulations.

Moon as a laboratory

Dr. Kaul also stressed the importance of studying artificial impacts like this one because of how quickly activity on the moon is expanding. With space agencies and private companies both targeting the

moon for long-term lunar bases, mining, and satellites, accidental interference between missions may arise. Lunar scientific and cultural heritage are also at risk. "Debris regulation is a serious problem," Dr. Kaul added.

At the United Nations, the Action Team on Lunar Activity Consultation (ATLAC) working group is trying to build consensus among spacefaring nations on issues from coordinating on landing sites to lunar dust mitigation and debris rules – which is a scenario the impending impact previews.

The UN discussions will nonetheless take time to come up with new rules

"In the United Nations, decisions are by consensus," Dr. Kaul said. This means all participating countries must agree before a proposal becomes binding international regulation, a process that can take years.

Mr. Gray also said space agencies handle leftover rocket stages differently. NASA and the European Space Agency, he said, have been careful. The upper stage that launched the Webb telescope, for instance, was placed in an orbit that will keep it away from the earth-moon system for roughly a century. China's recent stages have similarly been directed toward the Pacific Ocean or orbits around the Sun.

SpaceX has made no public statement on its disposal policy, however.
(Shreejaya Karantha is a freelance science writer.
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THE GIST

Astronomers are closely monitoring a SpaceX rocket stage that is on the way to striking the moon

Experts said the collision will be an opportunity to study what happens in such events. Specifically, artificial impacts like this are rare

Astronomers are planning to investigate the behaviour of lunar dust, which can reveal more about the consequences of natural impacts and seismic activity

हम ऐसे देश में इन चेतावनियों की उपेक्षा नहीं कर सकते, जहाँ अतार्किक दवा-निर्धारण, बिना चिकित्सकीय पर्य के दवाओं की उपलब्धता, तथा नैतिक दवा-निर्धारण एवं दवा वितरण प्रथाओं के पालन में कमी अब भी गंभीर चुनौतियाँ बनी हुई हैं।

05A8. SpaceX rocket stage hurtles toward moon, astronomers hot on its trail चंद्रमा की ओर बढ़ रहा स्पेसएक्स रॉकेट का चरण, खगोलविद उसकी गतिविधियों पर निकटता से नज़र रख रहे हैं।

- Astronomers are closely monitoring a **SpaceX** rocket stage that is on the way to striking the **moon**.
खगोलविद **स्पेसएक्स** के एक रॉकेट चरण की निकटता से निगरानी कर रहे हैं, जो **चंद्रमा** से टकराने की दिशा में अग्रसर है।
- This **Falcon 9** rocket had launched two satellites towards the moon in **January 2025**.
इस **फाल्कन 9** रॉकेट ने **जनवरी 2025** में चंद्रमा की ओर दो उपग्रह प्रक्षेपित किए थे।
- Then **SpaceX** abandoned the rocket's spent upper stage in an unstable orbit as it lacked enough fuel to return to the **earth** or head into deep space.
इसके बाद **स्पेसएक्स** ने रॉकेट के प्रयुक्त ऊपरी चरण को अस्थिर कक्षा में छोड़ दिया क्योंकि उसके पास पृथ्वी पर लौटने या गहरे अंतरिक्ष की ओर जाने के लिए पर्याप्त ईंधन नहीं था।
- It is now expected to hit the **moon** at **12:05 p.m. IST on August 5**.
अब इसके **5 अगस्त** को **भारतीय मानक समयानुसार दोपहर 12:05 बजे चंद्रमा** से टकराने की अपेक्षा है।
- The independent astronomer **Bill Gray's** calculations showed that the rocket stage is en route to the **Einstein Crater** on the **moon**.
स्वतंत्र खगोलविद **बिल ग्रे** की गणनाओं से पता चला कि रॉकेट का यह चरण **चंद्रमा** पर स्थित **आइंस्टीन क्रेटर** की ओर बढ़ रहा है।
- Mr. **Gray** said that over the course of a year, any small changes could add up and cause the object to fly close to the **moon** instead of impacting it.
श्री **ग्रे** ने कहा कि एक वर्ष के दौरान होने वाले छोटे-छोटे परिवर्तन मिलकर इस वस्तु को **चंद्रमा** से टकराने के बजाय उसके निकट से गुजरने का कारण बन सकते थे।
- So he gathered more data, with which by **January 2026** he was **100%** sure that the stage was on a collision course.
इसलिए उन्होंने अधिक आँकड़े एकत्र किए, जिनके आधार पर **जनवरी 2026** तक उन्हें **100%** विश्वास हो गया कि यह चरण टक्कर के मार्ग पर है।
- "By **April**, I was confident enough to announce that it would hit near the **Einstein crater**," he said, giving scientists roughly **3.5 months** to plan observations.
उन्होंने कहा, "**अप्रैल** तक मुझे इतना विश्वास हो गया था कि मैं यह घोषणा कर सकूँ कि यह **आइंस्टीन क्रेटर** के निकट टकराएगा," जिससे वैज्ञानिकों को अवलोकन की योजना बनाने के लिए लगभग **3.5 महीने** मिल गए।
- All details regarding this event are posted on his website, '**Project Pluto**'.
इस घटना से संबंधित सभी विवरण उनकी वेबसाइट '**प्रोजेक्ट प्लूटो**' पर प्रकाशित हैं।
- Since he had tracked the rocket within days of its launch, identifying the debris was easy:
"We were somewhat fortunate in this case. If an object isn't spotted until months or years after launch, identifying it can be quite challenging," Mr. **Gray** said.
चूँकि उन्होंने प्रक्षेपण के कुछ ही दिनों के भीतर रॉकेट का पता लगा लिया था, इसलिए मलबे की पहचान करना आसान था। श्री **ग्रे** ने कहा, "हम इस मामले में कुछ हद तक भाग्यशाली रहे। यदि किसी वस्तु का पता प्रक्षेपण के कई महीनों या वर्षों बाद चलता है, तो उसकी पहचान करना काफी चुनौतीपूर्ण हो सकता है।"

Accidental opportunity आकस्मिक अवसर

- Rather than threaten astronomy studies, experts said the collision will be an opportunity to study what happens in such events.
विशेषज्ञों ने कहा कि खगोल विज्ञान के अध्ययनों के लिए खतरा बनने के बजाय यह टक्कर ऐसे घटनाक्रमों में क्या होता है, इसका अध्ययन करने का अवसर होगी।

- Specifically, artificial impacts like this are rare.
विशेष रूप से, इस प्रकार की कृत्रिम टक्करें अत्यंत दुर्लभ होती हैं।
- They are also valuable because scientists already know the impactor's **mass**, **speed**, and **size** in advance, unlike with natural meteoroid strikes, rendering the collision a so-called **controlled source event**.
ये इसलिए भी मूल्यवान हैं क्योंकि वैज्ञानिकों को प्राकृतिक उल्कापिंडीय टक्करों के विपरीत पहले से ही प्रभावकारी वस्तु के **द्रव्यमान**, **वेग**, और **आकार** की जानकारी होती है, जिससे यह टक्कर तथाकथित **नियंत्रित स्रोत घटना** बन जाती है।
- The last time a similar event was observed was **NASA's 2009 LCROSS mission**, which deliberately crashed a rocket stage near the **moon's south pole** and confirmed **water ice** in the debris it kicked up.
इस प्रकार की घटना पिछली बार **नासा के 2009 एलक्रॉस मिशन** में देखी गई थी, जिसमें जानबूझकर रॉकेट के एक चरण को **चंद्रमा के दक्षिणी ध्रुव** के निकट टकराया गया था और उससे उड़े मलबे में **जल-बर्फ** की पुष्टि हुई थी।

What to expect क्या अपेक्षित है

- Mr. **Gray** has estimated the impact speed to be at **8,700 km/hr**.
श्री ग्रे ने टक्कर की गति **8,700 किमी/घंटा** होने का अनुमान लगाया है।
- During the time of the collision, astronomers are planning to investigate the behaviour of **lunar dust**, which can reveal more about the consequences of natural impacts and **seismic activity**.
टक्कर के समय खगोलविद **चंद्र धूल** के व्यवहार का अध्ययन करने की योजना बना रहे हैं, जिससे प्राकृतिक टक्करों के प्रभावों और **भूकंपीय गतिविधि** के बारे में अधिक जानकारी मिल सकती है।
- Since dust on the **moon** is not the same as dust anywhere on the **earth**, astronomers can also benefit from knowing how long dust will remain suspended or what kind of dust storms may be expected if humans want to start living on the **moon**.
चूँकि **चंद्रमा** की धूल **पृथ्वी** पर पाई जाने वाली धूल जैसी नहीं है, इसलिए खगोलविद यह जानकर भी लाभान्वित हो सकते हैं कि धूल कितनी देर तक हवा में बनी रहेगी या यदि मनुष्य **चंद्रमा** पर रहना प्रारंभ करें तो किस प्रकार के धूल-तूफानों की अपेक्षा की जा सकती है।
- According to a paper by **U.S. Los Alamos National Laboratory** planetary scientist **Benjamin Fernando** and colleagues (uploaded to the **arXiv preprint server** on **July 16**), three particular effects are expected from the impact.
अमेरिका की लॉस एलामोस नेशनल लेबोरेटरी के ग्रह वैज्ञानिक **बेंजामिन फर्नांडो** और उनके सहयोगियों के एक शोधपत्र (जिसे **16 जुलाई** को **arXiv प्रीप्रिंट सर्वर** पर अपलोड किया गया) के अनुसार, इस टक्कर से तीन विशेष प्रभावों की अपेक्षा है।
- First is a **flash of light** at the moment of impact, which may last less than a second.
पहला प्रभाव टक्कर के क्षण उत्पन्न होने वाली **प्रकाश की चमक** है, जो एक सेकंड से भी कम समय तक रह सकती है।
- This is produced by material from the rocket stage vaporising on contact with the **moon**.
यह रॉकेट चरण की सामग्री के **चंद्रमा** के संपर्क में आते ही वाष्पित होने से उत्पन्न होगी।
- Second, a cloud of **debris** or **ejecta**, possibly vapour, will be thrown up.
दूसरा, **मलबे** या **उत्सर्जित पदार्थ** का एक बादल, जो संभवतः वाष्प भी हो सकता है, ऊपर की ओर उछलेगा।
- Finally, a **crater 20-30 m** across, estimated based on past impacts and computer models.
अंततः, पूर्ववर्ती टक्करों और कंप्यूटर मॉडलों के आधार पर अनुमानित **20-30 मीटर** चौड़ा एक **क्रेटर** बनेगा।
- The researchers wrote in their paper that "a **double crater** may be produced" if the object breaks apart, "which may occur depending on the stage's attitude at the time of impact".

शोधकर्ताओं ने अपने शोधपत्र में लिखा कि यदि यह वस्तु टूट जाती है, तो “एक द्वि-क्रेटर बन सकता है,” “जो टक्कर के समय चरण की स्थिति पर निर्भर करेगा।”

- However, catching the **flash** won't be easy because it will be on the **moon's sunlit side**, and any attempt will require a **telescope**.
हालाँकि, इस **प्रकाश-चमक** को देख पाना आसान नहीं होगा क्योंकि यह **चंद्रमा के सूर्यप्रकाशित भाग** पर होगी, और इसके लिए **दूरबीन** की आवश्यकता होगी।
- Observers in **India** also won't get a chance to see it live as the impact will happen at **noon**, with the **moon** below the horizon then.
भारत में पर्यवेक्षकों को भी इसे प्रत्यक्ष देखने का अवसर नहीं मिलेगा क्योंकि टक्कर **दोपहर** में होगी, जब **चंद्रमा** क्षितिज के नीचे होगा।

What if...?

यदि ऐसा हो तो...?

- According to **Mr. Gray**, current estimates of the **impact time** and **location** carry an uncertainty of about **5 seconds** in impact time and roughly **20 km** in location.
श्री ग्रे के अनुसार, **टक्कर के समय और स्थान** के वर्तमान अनुमान में टक्कर के समय लगभग **5 सेकंड** तथा स्थान के संबंध में लगभग **20 किमी** की अनिश्चितता है।
- **Einstein crater** sits at **88° W, 15° N**, close to the western edge of the **near side**.
आइंस्टीन क्रेटर **88° पश्चिम, 15° उत्तर** पर स्थित है, जो **चंद्रमा के पृथ्वी की ओर वाले भाग (नियर साइड)** के पश्चिमी किनारे के निकट है।
- It is far from the **equatorial** and **south-polar regions**, where most current and planned **lunar landings** are concentrated.
यह **भूमध्यरेखीय** तथा **दक्षिणी ध्रुवीय क्षेत्रों** से काफी दूर है, जहाँ वर्तमान और प्रस्तावित अधिकांश **चंद्र अवतरण मिशन** केंद्रित हैं।
- So the chances of the **rocket stage** altering any sites that **spacefaring nations** consider significant are low.
अतः **रॉकेट चरण (रॉकेट स्टेज)** द्वारा उन स्थलों को प्रभावित करने की संभावना कम है जिन्हें **अंतरिक्ष अभियानों में संलग्न राष्ट्र** महत्वपूर्ण मानते हैं।
- Hypothetically, if this **rocket stage** or any other **debris** happened to strike any significant location on the **moon** — such as the **Shiv Shakti point** where **Chandrayaan-3** landed — there currently is no legal instrument to protect them.
काल्पनिक रूप से, यदि यह **रॉकेट चरण** या कोई अन्य **मलबा चंद्रमा** पर किसी महत्वपूर्ण स्थान — जैसे **शिव शक्ति बिंदु**, जहाँ **चंद्रयान-3** उतरा था — से टकरा जाए, तो वर्तमान में उनकी सुरक्षा के लिए कोई कानूनी व्यवस्था उपलब्ध नहीं है।
- “There is no legal claim,” **Ranjana Kaul**, partner at **Dua Associates & Vice President, International Institute of Space Law, Paris**, said.
दुआ एसोसिएट्स की भागीदार एवं **इंटरनेशनल इंस्टिट्यूट ऑफ स्पेस लॉ, पेरिस** की उपाध्यक्ष **रंजना कौल** ने कहा, “इस पर कोई कानूनी दावा नहीं है।”
- “Our **Outer Space Treaty** does not recognise **sovereignty** in **outer space**.”
उन्होंने कहा, “हमारी **बाह्य अंतरिक्ष संधि (Outer Space Treaty)** बाह्य अंतरिक्ष में किसी संप्रभुता को मान्यता नहीं देती।”
- She added that just because a country happened to land at a site, it doesn't own that piece of the **moon** under current regulations.
उन्होंने यह भी जोड़ा कि केवल किसी देश के किसी स्थान पर उतर जाने से वर्तमान नियमों के अनुसार वह **चंद्रमा** का वह भाग उसका स्वामित्व नहीं बन जाता।

Moon as a laboratory प्रयोगशाला के रूप में चंद्रमा

- **Dr. Kaul** also stressed the importance of studying **artificial impacts** like this one because of how quickly activity on the **moon** is expanding.
डॉ. कौल ने इस प्रकार की **कृत्रिम टक्करों** के अध्ययन के महत्व पर भी बल दिया, क्योंकि **चंद्रमा** पर गतिविधियाँ अत्यंत तीव्र गति से बढ़ रही हैं।
- With **space agencies** and **private companies** both targeting the **moon** for long-term **lunar bases**, **mining**, and **satellites**, accidental interference between missions may arise.
चूँकि अंतरिक्ष एजेंसियाँ और निजी कंपनियाँ दोनों ही चंद्रमा पर दीर्घकालिक चंद्र अड्डों, खनन तथा उपग्रहों के लिए कार्य कर रही हैं, इसलिए मिशनों के बीच आकस्मिक हस्तक्षेप की संभावना उत्पन्न हो सकती है।
- **Lunar scientific and cultural heritage** are also at risk.
चंद्र वैज्ञानिक विरासत तथा सांस्कृतिक विरासत भी जोखिम में हैं।
- “**Debris regulation** is a serious problem,” **Dr. Kaul** added.
डॉ. कौल ने कहा, “**मलबा विनियमन** एक गंभीर समस्या है।”
- At the **United Nations**, the **Action Team on Lunar Activity Consultation (ATLAC)** working group is trying to build consensus among **spacefaring nations** on issues from coordinating on **landing sites** to **lunar dust mitigation** and **debris rules** — which is a scenario the impending impact previews.
संयुक्त राष्ट्र में एक्शन टीम ऑन लूनर एक्टिविटी कंसल्टेशन (ATLAC) कार्य समूह अंतरिक्ष अभियानों में संलग्न राष्ट्रों के बीच अवतरण स्थलों के समन्वय से लेकर चंद्र धूल शमन और मलबा नियमों तक विभिन्न विषयों पर सहमति बनाने का प्रयास कर रहा है — और आसन्न टक्कर इसी प्रकार की स्थिति का पूर्वाभास कराती है।
- The **UN** discussions will nonetheless take time to come up with new rules.
फिर भी, संयुक्त राष्ट्र में नए नियम बनाने की प्रक्रिया में समय लगेगा।
- “In the **United Nations**, decisions are by **consensus**,” **Dr. Kaul** said.
डॉ. कौल ने कहा, “संयुक्त राष्ट्र में निर्णय सर्वसम्मति से लिए जाते हैं।”
- This means all participating countries must agree before a proposal becomes binding **international regulation**, a process that can take years.
इसका अर्थ है कि किसी प्रस्ताव के बाध्यकारी अंतरराष्ट्रीय विनियमन बनने से पहले सभी सहभागी देशों की सहमति आवश्यक होती है, और इस प्रक्रिया में वर्षों लग सकते हैं।
- **Mr. Gray** also said **space agencies** handle leftover **rocket stages** differently.
श्री ग्रे ने यह भी कहा कि अंतरिक्ष एजेंसियाँ बची हुई रॉकेट चरणों का अलग-अलग तरीके से प्रबंधन करती हैं।
- **NASA** and the **European Space Agency**, he said, have been careful.
उन्होंने कहा कि नासा (NASA) और यूरोपीय अंतरिक्ष एजेंसी इस विषय में सावधानी बरतती रही हैं।
- The **upper stage** that launched the **Webb telescope**, for instance, was placed in an orbit that will keep it away from the **earth-moon system** for roughly a century.
उदाहरण के लिए, वेब टेलीस्कोप को प्रक्षेपित करने वाले ऊपरी चरण को ऐसी कक्षा में स्थापित किया गया था जो उसे लगभग एक शताब्दी तक पृथ्वी-चंद्रमा प्रणाली से दूर रखेगी।
- **China's** recent stages have similarly been directed toward the **Pacific Ocean** or orbits around the **Sun**.
इसी प्रकार चीन के हालिया रॉकेट चरणों को प्रशांत महासागर अथवा सूर्य के चारों ओर की कक्षाओं की ओर निर्देशित किया गया है।

GS Paper III: Environment		05 August 2026
TOPICS COVERED		
05A8	10-km mining buffer applies to all wetland reserves: top court उच्चतम न्यायालय: 10 किमी का खनन बफर सभी आर्द्रभूमि संरक्षण क्षेत्रों पर लागू होगा	



05A8 Global warming: picking speed
वैश्विक ऊष्मीकरण: गति पकड़ता हुआ

10-km mining buffer applies to all wetland reserves: top court

GS III: Environment

Krishnadas Rajagopal
NEW DELHI

The Supreme Court orally clarified on Tuesday that a direction banning mining activities within a 10-km radius of the Asan wetland conservation reserve, a Ramsar site in Uttarakhand, would apply to other wetland conservation reserves across the country for the sake of parity.

"Wherever it is a community or a wetland conservation reserve, Asan [directions] will be applied. Wetlands are in a different category... We are conscious of the extent to which we are laying down parity. It is not that it [directions] would apply to Madhya Pradesh or would apply to West Bengal only..." Justice Joydip Bagchi, part of the Bench headed by Chief Justice of India Surya Kant, observed.

The court was hearing a petition filed by Himachal Pradesh arguing that the 10 km radius restriction imposed in Uttarakhand should not apply to it.

Himachal Pradesh said the Asan reserve did not come within its territory. Its counsel said there was no need for a buffer zone



The ruling on the Asan wetland reserve to apply to all wetland reserves across the country.

outside the reserve area, unlike in the case of national parks and sanctuaries.

The trigger for the Himachal Pradesh plea was a pending petition in the State High Court arguing that since Uttarakhand and Himachal Pradesh were adjoining States, the February 14, 2024 direction of the apex court would extend to the latter also.

On February 14, 2024, the apex court passed an interim order that "no mining activities would be carried out within 10 km radius of the Asan wetland conservation reserve without the project proponent obtaining permission from the Standing Committee of the National Board of Wildlife and/or MoEF&CC".

05A8. 10-km mining buffer applies to all wetland reserves: top court

उच्चतम न्यायालय: 10 किमी का खनन बफर सभी आर्द्रभूमि संरक्षण क्षेत्रों पर लागू होगा

The Supreme Court orally clarified on Tuesday that a direction banning mining activities within a 10-km radius of the Asan Wetland Conservation Reserve, a Ramsar Site in Uttarakhand, would apply to other wetland conservation reserves across the country for the sake of parity.

उच्चतम न्यायालय ने मंगलवार को मौखिक रूप से स्पष्ट किया कि उत्तराखंड स्थित आसन आर्द्रभूमि संरक्षण रिज़र्व, जो एक रामसर स्थल है, के 10 किलोमीटर के दायरे में खनन गतिविधियों पर प्रतिबंध संबंधी निर्देश समानता के सिद्धांत के आधार पर देश के अन्य आर्द्रभूमि संरक्षण क्षेत्रों पर भी लागू होंगे।

"Wherever it is a community or a wetland conservation reserve, Asan [directions] will be applied. Wetlands are in a different category... We are conscious of the extent to which we are laying down parity. It is not that it [directions] would apply to Madhya Pradesh or would apply to West Bengal only..." Justice Joydip Bagchi, part of the Bench headed by Chief Justice of India Surya Kant, observed.

भारत के मुख्य न्यायाधीश सूर्यकांत की अध्यक्षता वाली पीठ के सदस्य न्यायमूर्ति जॉयमल्या बागची ने कहा, "जहाँ कहीं भी सामुदायिक संरक्षण क्षेत्र अथवा आर्द्रभूमि संरक्षण रिज़र्व होगा, वहाँ आसन संबंधी निर्देश लागू होंगे। आर्द्रभूमियाँ एक अलग श्रेणी में आती हैं। हम इस बात के प्रति सजग हैं कि समानता का सिद्धांत किस सीमा तक लागू किया जा रहा है। ऐसा नहीं है कि ये निर्देश केवल मध्य प्रदेश या केवल पश्चिम बंगाल पर ही लागू होंगे।"

The court was hearing a petition filed by Himachal Pradesh arguing that the 10-km radius restriction imposed in Uttarakhand should not apply to it. न्यायालय हिमाचल प्रदेश द्वारा दायर उस याचिका पर सुनवाई कर रहा था, जिसमें यह तर्क दिया गया था कि उत्तराखंड में लगाया गया 10 किलोमीटर

का प्रतिबंध उस पर लागू नहीं होना चाहिए।

- Himachal Pradesh said the Asan Reserve did not come within its territory. हिमाचल प्रदेश ने कहा कि आसन संरक्षण रिज़र्व उसकी भौगोलिक सीमा में नहीं आता है।
- Its counsel said there was no need for a buffer zone outside the reserve area, unlike in the case of national parks and sanctuaries. राज्य के अधिवक्ता ने कहा कि राष्ट्रीय उद्यानों और वन्यजीव अभयारण्यों के विपरीत, संरक्षण क्षेत्र के बाहर बफर ज़ोन की आवश्यकता नहीं है।
- The trigger for the Himachal Pradesh plea was a pending petition in the State High Court arguing that since Uttarakhand and Himachal Pradesh were adjoining States, the February 14, 2024 direction of the apex court would extend to the latter also. हिमाचल प्रदेश की इस याचिका का कारण राज्य उच्च न्यायालय में लंबित एक याचिका थी, जिसमें तर्क दिया

गया था कि चूँकि उत्तराखंड और हिमाचल प्रदेश पड़ोसी राज्य हैं, इसलिए 14 फ़रवरी 2024 को उच्चतम न्यायालय द्वारा जारी निर्देश हिमाचल प्रदेश पर भी लागू होंगे।

- On February 14, 2024, the apex court passed an interim order that “no mining activities would be carried out within 10 km radius of the Asan Wetland Conservation Reserve without the project proponent obtaining permission from the Standing Committee of the National Board for Wildlife (NBWL) and/or the Ministry of Environment, Forest and Climate Change (MoEF&CC)”.

14 फ़रवरी 2024 को उच्चतम न्यायालय ने एक अंतरिम आदेश पारित किया था, जिसके अनुसार आसन आर्द्रभूमि संरक्षण रिज़र्व के 10 किलोमीटर के दायरे में कोई भी खनन गतिविधि तब तक नहीं की जाएगी, जब तक परियोजना प्रस्तावक राष्ट्रीय वन्यजीव बोर्ड (एनबीडब्ल्यूएल) की स्थायी समिति तथा/अथवा पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय (एमओईएफसीसी) से अनुमति प्राप्त नहीं कर लेता।

Global warming: picking speed

GS III: Environment
Vasudevan Mukunth

A new study published in *Geophysical Research Letters* has reported evidence that global warming is speeding up.

In the past, it was difficult for scientists to prove warming was accelerating because global temperatures are noisy, meaning they fluctuate year to year due to natural factors like volcanic eruptions and changes in solar activity.

Such events can also temporarily mask the underlying human-caused temperature trend.

To sidestep this issue, the study's authors analysed five major global temperature datasets and used statistical methods to subtract the influence of these factors.

Once this noise was removed, the authors found that the rate of warming had jumped. They also wrote that they were more than 98% certain that this jump was real rather than a random, short-lived fluctuation.

Specifically, they reported that the earth has warmed faster over the last decade than during any previous decade on record, with the change beginning around 2015.

Under the previous, slower warming rate, scientists had hoped that the world would have more time to keep global warming under 1.5 degrees Celsius. However, under the new accelerated pace, the earth will breach 1.5 degrees Celsius of warming by 2030.



A helicopter conducting night operations prepares to drop water on the Quilpituk Creek wildfire burning on the west side of Okanagan Lake near Fintry, British Columbia on August 3. THE CANADIAN PRESS

While greenhouse gas emissions are the primary cause, the study noted that a drop in air pollution may be a contributing factor.

Historically, certain pollutants called aerosols had a cooling effect as they reflected sunlight. As the air got cleaner, the cooling mask disappeared, allowing the full force of global warming to be felt.

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विधियों का उपयोग किया।

- Once this noise was removed, the authors found that the rate of warming had jumped. जब इस प्रकार के उतार-चढ़ाव को हटा दिया गया, तब लेखकों ने पाया कि ऊष्मीकरण की दर में उल्लेखनीय वृद्धि हुई है।
- They also wrote that they were more than 98% certain that this jump was real rather than a random, short-lived fluctuation. उन्होंने यह भी लिखा कि उन्हें 98% से अधिक विश्वास है कि यह वृद्धि वास्तविक है, न कि कोई आकस्मिक और अल्पकालिक उतार-चढ़ाव।
- Specifically, they reported that the earth has warmed faster over the last decade than during any previous decade on record, with the change beginning around 2015. विशेष रूप से उन्होंने बताया कि पृथ्वी पिछले दशक में किसी भी पूर्ववर्ती दर्ज दशक की तुलना में अधिक तेज़ी से गर्म हुई है, और यह परिवर्तन लगभग 2015 के आसपास प्रारंभ हुआ।

05A8. Global warming: picking speed वैश्विक ऊष्मीकरण: गति पकड़ता हुआ

- In the past, it was difficult for scientists to prove warming was accelerating because global temperatures are noisy, meaning they fluctuate year to year due to natural factors like volcanic eruptions and changes in solar activity.

पूर्व में वैज्ञानिकों के लिए यह सिद्ध करना कठिन था कि ऊष्मीकरण की गति बढ़ रही है, क्योंकि वैश्विक तापमान में स्वाभाविक उतार-चढ़ाव होता है, अर्थात् ज्वालामुखीय विस्फोटों तथा सौर गतिविधि में परिवर्तन जैसे प्राकृतिक कारणों से यह वर्ष-दर-वर्ष बदलता रहता है।

- Such events can also temporarily mask the underlying human-caused temperature trend. ऐसी घटनाएँ मानव-जनित तापमान वृद्धि की वास्तविक प्रवृत्ति को अस्थायी रूप से छिपा भी सकती हैं।

- To sidestep this issue, the study's authors analysed five major global temperature datasets and used statistical methods to subtract the influence of these factors.

इस समस्या से बचने के लिए अध्ययन के लेखकों ने वैश्विक तापमान के पाँच प्रमुख डेटासेट का विश्लेषण किया और इन कारकों के प्रभाव को हटाने के लिए सांख्यिकीय

- Under the previous, slower warming rate, scientists had hoped that the world would have more time to keep **global warming** under **1.5 degrees Celsius**.
ऊष्मीकरण की पूर्ववर्ती धीमी दर के आधार पर वैज्ञानिकों को आशा थी कि विश्व के पास वैश्विक ऊष्मीकरण को **1.5 डिग्री सेल्सियस** से नीचे बनाए रखने के लिए अधिक समय होगा।
- However, under the new accelerated pace, the **earth** will breach **1.5 degrees Celsius** of warming by **2030**.
किन्तु नई तीव्र गति के अनुसार पृथ्वी 2030 तक **1.5 डिग्री सेल्सियस** ऊष्मीकरण की सीमा को पार कर जाएगी।
- While **greenhouse gas emissions** are the primary cause, the study noted that a drop in **air pollution** may be a contributing factor.
यद्यपि ग्रीनहाउस गैसों का उत्सर्जन इसका प्रमुख कारण है, अध्ययन में यह भी उल्लेख किया गया है कि वायु प्रदूषण में कमी भी एक सहायक कारक हो सकती है।
- Historically, certain pollutants called **aerosols** had a cooling effect as they reflected sunlight.
ऐतिहासिक रूप से, एरोसोल कहलाने वाले कुछ प्रदूषकों का शीतलन प्रभाव होता था क्योंकि वे सूर्य के प्रकाश को परावर्तित करते थे।
- As the air got cleaner, the cooling mask disappeared, allowing the full force of **global warming** to be felt.
जैसे-जैसे वायु अधिक स्वच्छ होती गई, यह शीतलन आवरण समाप्त हो गया, जिससे वैश्विक ऊष्मीकरण का पूर्ण प्रभाव अनुभव किया जाने लगा।

GS Paper III: Internal Security		05 August 2026
TOPICS COVERED		
05A8	SC directs Centre to frame SOPs to curb 'digital arrest' scams उच्चतम न्यायालय ने 'डिजिटल अरेस्ट' धोखाधड़ी पर रोक लगाने हेतु केंद्र को एसओपी तैयार करने का निर्देश दिया	
05A8	SC seeks Centre's response to plea against CAPF Act उच्चतम न्यायालय ने सीएपीएफ अधिनियम के विरुद्ध याचिका पर केंद्र से जवाब माँगा	



SC directs Centre to frame SOPs to curb 'digital arrest' scams

GS III: Internal Security
The Hindu Bureau
NEW DELHI

The Supreme Court on Tuesday passed a detailed order directing the Centre, States, the Reserve Bank of India (RBI) and telecom authorities to prepare standard operating procedures (SOPs) to curb "digital arrest" scams.

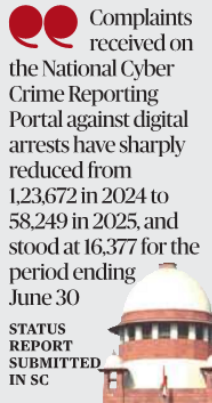
The court directed them to operationalise mechanisms to redress grievances of victims, initiate criminal action through Zero first information reports (FIRs) against cyber fraudsters, and restore the monetary losses of those defrauded in a time-bound manner.

The court referred to a status report submitted by the **Indian Cyber Crime Coordination Centre (I4C)**, which said the complaints received on the National Cyber Crime Reporting Portal against digital arrests sharply reduced from 1,23,672 in 2024 to 58,249 in 2025, and stood at 16,377 for the period ending June 30, 2026.

'Encouraging' statistics
However, the court said though the statistics were "certainly encouraging", it was still essential to monitor the situation.

"As per the fourth status report, a data-sharing MoU between the Reserve Bank Innovation Hub and I4C was executed on May 11, 2026. The grievance redressal mechanism portal now covers 1,23,590 branches of 69 banks. Additionally, the Money Restoration Mechanism Portal has 57 participating banks and covers all 36 States and Union Territories," the court noted.

The court said the e-Ze-



ro FIR mechanism was functional in 19 States, while only 14 States had notified their State Cyber Crime Coordination Centres. Similarly, the Telecommunications (Radio Equipment Possession Authorisation) Rules, 2025 had been notified, while the Telecommunications (User Identification) Rules, 2025 was at the final stage of notification.

In a series of interim directions, the court directed the RBI to prepare and circulate within four weeks an SOP for banks for placing temporary debit holds on mule accounts linked to money laundering activity and cyber-enabled fraud.

The States and Union Territories were directed to frame modules for grievance redressal and money restoration as per the Ministry of Home Affairs' SOP concerning the **National Cyber Crime Reporting Portal and Cyber RMS**.

States have been asked to notify Cyber Crime Coordination Centres and e-Zero FIRs within four weeks.

05A8. SC directs Centre to frame SOPs to curb 'digital arrest' scams

उच्चतम न्यायालय ने 'डिजिटल अरेस्ट' धोखाधड़ी पर रोक लगाने हेतु केंद्र को एसओपी तैयार करने का निर्देश दिया

- The **Supreme Court** on Tuesday passed a detailed order directing the **Centre**, **States**, the **Reserve Bank of India (RBI)** and telecom authorities to prepare **Standard Operating Procedures (SOPs)** to curb "**digital arrest**" scams.

उच्चतम न्यायालय ने मंगलवार को एक विस्तृत आदेश पारित करते हुए **केंद्र**, **राज्यों**, **भारतीय रिज़र्व बैंक (आरबीआई)** तथा दूरसंचार प्राधिकरणों को "**डिजिटल अरेस्ट**" धोखाधड़ी पर रोक लगाने के लिए **मानक संचालन प्रक्रियाएँ (एसओपी)** तैयार करने का निर्देश दिया।

- The court directed them to operationalise mechanisms to redress grievances of victims, initiate criminal action through **Zero First Information Reports (Zero FIRs)** against cyber fraudsters, and restore the monetary losses of those defrauded in a time-bound manner.

न्यायालय ने पीड़ितों की शिकायतों के निवारण हेतु तंत्र को क्रियान्वित करने,

साइबर धोखाधड़ी करने वालों के विरुद्ध ज़ीरो प्रथम सूचना रिपोर्ट (ज़ीरो

एफआईआर) के माध्यम से आपराधिक कार्रवाई प्रारंभ करने तथा ठगी के शिकार लोगों की आर्थिक हानि की समयबद्ध भरपाई सुनिश्चित करने का निर्देश दिया।

- The court referred to a status report submitted by the **Indian Cyber Crime Coordination Centre (I4C)**, which said the complaints received on the **National Cyber Crime Reporting Portal** against digital arrests sharply reduced from **1,23,672** in **2024** to **58,249** in **2025**, and stood at **16,377** for the period ending **June 30, 2026**.

न्यायालय ने **भारतीय साइबर अपराध समन्वय केंद्र (आई4सी)** द्वारा प्रस्तुत

स्थिति रिपोर्ट का उल्लेख किया, जिसमें कहा गया कि **राष्ट्रीय साइबर अपराध**

रिपोर्टिंग पोर्टल पर **डिजिटल अरेस्ट** से संबंधित शिकायतों की संख्या **2024** में

1,23,672 से घटकर **2025** में **58,249** रह गई तथा **30 जून 2026** तक की

अवधि में यह **16,377** रही।

'Encouraging' statistics

'उत्साहजनक' आँकड़े

- However, the court said though the statistics were "**certainly encouraging**", it was still essential to monitor the situation.

हालाँकि, न्यायालय ने कहा कि यद्यपि ये आँकड़े "**निश्चित रूप से उत्साहजनक**" हैं, फिर भी स्थिति पर निरंतर निगरानी बनाए रखना आवश्यक है।

- "As per the fourth status report, a **data-sharing MoU** between the **Reserve Bank Innovation Hub** and **I4C** was executed on **May 11, 2026**. The grievance redressal mechanism portal now covers **1,23,590** branches of **69** banks. Additionally, the **Money Restoration Mechanism Portal** has **57** participating banks and covers all **36** States and Union Territories," the court noted.

न्यायालय ने कहा, "चौथी स्थिति रिपोर्ट के अनुसार, **रिज़र्व बैंक इनोवेशन हब** और **आई4सी** के बीच डेटा

साझाकरण समझौता ज़ापन (एमओयू) **11 मई 2026** को संपन्न हुआ। शिकायत निवारण तंत्र पोर्टल अब **69**



बैंकों की 1,23,590 शाखाओं को कवर करता है। इसके अतिरिक्त, मनी रेस्टोरेशन मैकेनिज़म पोर्टल में 57 सहभागी बैंक शामिल हैं तथा यह सभी 36 राज्यों और केंद्र शासित प्रदेशों को आच्छादित करता है।”

- Similarly, the **Telecommunications (Radio Equipment Possession Authorisation) Rules, 2025** had been notified, while the **Telecommunications (User Identification) Rules, 2025** was at the final stage of notification.
- इसी प्रकार, दूरसंचार (रेडियो उपकरण स्वामित्व प्राधिकरण) नियम, 2025 अधिसूचित किए जा चुके हैं, जबकि दूरसंचार (उपयोगकर्ता पहचान) नियम, 2025 अधिसूचना के अंतिम चरण में हैं।
- In a series of interim directions, the court directed the **RBI** to prepare and circulate within **four weeks** an **SOP for banks for placing temporary debit holds on mule accounts linked to money laundering activity and cyber-enabled fraud**.

अंतरिम निर्देशों की एक श्रृंखला में न्यायालय ने आरबीआई को चार सप्ताह के भीतर बैंकों के लिए एक एसओपी तैयार कर प्रसारित करने का निर्देश दिया, जिसके अंतर्गत धन शोधन (मनी लॉन्ड्रिंग) तथा साइबर-सक्षम

धोखाधड़ी से जुड़े म्यूल खातों पर अस्थायी डेबिट रोक लगाई जा सके।

- The **States and Union Territories** were directed to frame modules for grievance redressal and money restoration as per the **Ministry of Home Affairs' SOP** concerning the **National Cyber Crime Reporting Portal and Cyber RMS**. राज्यों और केंद्र शासित प्रदेशों को गृह मंत्रालय की एसओपी के अनुरूप राष्ट्रीय साइबर अपराध रिपोर्टिंग पोर्टल तथा साइबर आरएमएस से संबंधित शिकायत निवारण एवं धन वापसी के लिए मॉड्यूल तैयार करने का निर्देश दिया गया।
- States have been asked to notify **Cyber Crime Coordination Centres and e-Zero FIRs** within **four weeks**. राज्यों को चार सप्ताह के भीतर साइबर अपराध समन्वय केंद्रों तथा ई-ज़ीरो एफआईआर व्यवस्था को अधिसूचित करने के लिए कहा गया।

05A8. SC seeks Centre's response to plea against CAPF Act

उच्चतम न्यायालय ने सीएपीएफ अधिनियम के विरुद्ध याचिका पर केंद्र से जवाब मांगा

- The **Supreme Court** on Tuesday issued notice to the **Union government** while hearing writ petitions filed by serving **Central Armed Police Force (CAPF)** officers who have challenged the recently enacted **Central Armed Police Force (General Administration) Act, 2026**.

उच्चतम न्यायालय ने मंगलवार को सेवा में कार्यरत केंद्रीय सशस्त्र पुलिस बल (सीएपीएफ) के अधिकारियों द्वारा हाल ही में पारित केंद्रीय सशस्त्र पुलिस बल (सामान्य प्रशासन) अधिनियम, 2026 को चुनौती देने वाली रिट याचिकाओं की सुनवाई करते हुए केंद्र सरकार को नोटिस जारी किया।

- The lead petitioner in the case is **Central Reserve Police Force (CRPF) Assistant Commandant Bibhor Kumar Singh, a Shaurya Chakra** awardee who lost both his legs in an anti-Maoist operation in Bihar in 2022.

इस मामले के प्रमुख याचिकाकर्ता केंद्रीय रिज़र्व पुलिस बल (सीआरपीएफ) के सहायक कमांडेंट बिभोर कुमार सिंह हैं, जो शौर्य चक्र से सम्मानित हैं तथा 2022 में बिहार में एक माओवादी विरोधी अभियान के दौरान अपने दोनों पैर खो चुके हैं।

SC seeks Centre's response to plea against CAPF Act

GS III: Internal Security
Vijaita Singh
NEW DELHI

The Supreme Court on Tuesday issued notice to the Union government while hearing writ petitions filed by serving Central Armed Police Force (CAPF) officers who have challenged the recently enacted Central Armed Police Force (General Administration) Act, 2026. The lead petitioner in the case is Central Reserve Police Force (CRPF) Assistant Commandant Bibhor Kumar Singh, a Shaurya Chakra awardee who lost both his legs in an anti-Maoist operation in Bihar in 2022.

The Bench issued notices to the Union Home Ministry and the Department of Personnel and Training.

The Act, passed by Parliament on April 2 and notified on April 9 this year, says that 50% of the total posts in the rank of Inspector-General (IG), at least 67% posts in the rank of Additional Director-General, and all posts in the rank of Special Director-General and Director-General shall be filled by Indian Police Service (IPS) officers on deputation.

The petitions in the top court seek to declare Section 3 and Section 4 of the



Bibhor Kumar Singh

CAPF Act as “as ultra vires the Constitution of India.”

While Section 3 pertains to “regulation of recruitment and conditions of service”, notwithstanding any judgment, decree or order of any court and specifies the percentage of posts reserved for IPS officers on deputation, Section 4 gives the Union government the power to amend the First and Second Schedules of the Act through a notification when it considers such action necessary or expedient in public interest.

The petitioners have sought a declaration that Higher Administrative Grade posts in all CAPFs be filled from among eligible executive cadre officers of the respective forces, rather than exclusively through deputation, along with any other relief.

- The Bench issued notices to the **Union Home Ministry** and the **Department of Personnel and Training**.
पीठ ने केंद्रीय गृह मंत्रालय तथा कार्मिक एवं प्रशिक्षण विभाग को नोटिस जारी किया।
- The **Act**, passed by **Parliament** on **April 2** and notified on **April 9** this year, says that **50%** of the total posts in the rank of **Inspector-General (IG)**, at least **67%** posts in the rank of **Additional Director-General**, and all posts in the rank of **Special Director-General** and **Director-General** shall be filled by **Indian Police Service (IPS)** officers on deputation.
यह अधिनियम, जिसे संसद ने इस वर्ष 2 अप्रैल को पारित किया और 9 अप्रैल को अधिसूचित किया, यह प्रावधान करता है कि महानिरीक्षक (आईजी) के कुल पदों में 50%, अतिरिक्त महानिदेशक के कम-से-कम 67% पद तथा विशेष महानिदेशक और महानिदेशक के सभी पद भारतीय पुलिस सेवा (आईपीएस) के प्रतिनियुक्ति पर आए अधिकारियों द्वारा भरे जाएंगे।
- The petitions in the top court seek to declare **Section 3** and **Section 4** of the **CAPF Act** as **"ultra vires the Constitution of India."**
उच्चतम न्यायालय में दायर याचिकाओं में सीएपीएफ अधिनियम की धारा 3 और धारा 4 को "भारत के संविधान के प्रतिकूल (अल्ट्रा वायर्स)" घोषित करने की मांग की गई है।
- While **Section 3** pertains to "regulation of recruitment and conditions of service", notwithstanding any judgment, decree or order of any court and specifies the percentage of posts reserved for **IPS** officers on deputation, **Section 4** gives the **Union government** the power to amend the **First** and **Second Schedules** of the Act through a notification when it considers such action necessary or expedient in public interest.
जहाँ धारा 3 "भर्ती और सेवा की शर्तों के विनियमन" से संबंधित है तथा किसी भी न्यायालय के निर्णय, डिक्री या आदेश के बावजूद प्रतिनियुक्ति पर आने वाले आईपीएस अधिकारियों के लिए आरक्षित पदों का प्रतिशत निर्धारित करती है, वहीं धारा 4 केंद्र सरकार को यह अधिकार देती है कि वह लोकहित में आवश्यक या उपयुक्त समझे जाने पर अधिसूचना के माध्यम से अधिनियम की प्रथम एवं द्वितीय अनुसूचियों में संशोधन कर सके।
- The petitioners have sought a declaration that **Higher Administrative Grade** posts in all **CAPFs** be filled from among eligible executive cadre officers of the respective forces, rather than exclusively through deputation, along with any other relief.
याचिकाकर्ताओं ने यह घोषणा करने का अनुरोध किया है कि सभी सीएपीएफ में उच्च प्रशासनिक ग्रेड के पद संबंधित बलों के पात्र कार्यकारी संवर्ग के अधिकारियों से भरे जाएँ, न कि केवल प्रतिनियुक्ति के माध्यम से, तथा इसके अतिरिक्त उपयुक्त अन्य राहत भी प्रदान की जाए।