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PCS Special:	04 August
04A8	TRAI strengthens call quality app; telcos, public get access to reports ट्राई ने कॉल गुणवत्ता ऐप को सशक्त बनाया; दूरसंचार कंपनियों और जनता को रिपोर्ट उपलब्ध होगी
04A8	Nauru, the world's third smallest country, changes name to Napier दुनिया के तीसरे सबसे छोटे देश नाउरु ने अपना नाम बदलकर नाओएरो रखा
04A8	'Bringing home a gold medal feels like a massive accomplishment' 'स्वर्ण पदक जीतकर देश लाना एक बहुत बड़ी उपलब्धि जैसा महसूस होता है'



TRAI strengthens call quality app; telcos, public get access to reports

PCS

The Hindu Bureau
NEW DELHI

The Telecom Regulatory Authority of India (TRAI) unveiled an application to report issues with call quality for Android devices. The MyCall app allows users to score any given call's quality out of five, and report specific issues such as echoes, low audio quality and inaudible calls.

The app's insights will be analysed by the regulator after collecting anonymised data on its own servers and low quality calls will also have signal strength, location and other data sent to telecom operators for them to improve systems, TRAI chairperson Anil Kumar



The app's insights will be analysed by the regulator.

Lahoti said.

Publicly available

The data will also eventually become publicly available in some form, Mr. Lahoti said. TRAI is not inclined to mandate the installation of this app on

smartphones via phone makers, Mr. Lahoti said responding to a question.

The MyCall app existed for years but most of the features unveiled on Monday were not available till the revamp. The app follows the footsteps of DND and MySpeed, TRAI's revamped apps focusing on spam call, SMS reporting and Internet speed test.

Call quality

TRAI has attempted multiple times to hold telcos responsible for call drops and call quality. A decade ago, it attempted to put in a micro-penalty framework to compensate customers for dropped calls. Telcos successfully argued in the Delhi High Court and the Su-

preme Court stating laws of physics made it impossible to guarantee a call wouldn't drop. In recent years, TRAI worked on financial disincentives under multiple regulations, including the 2024 Standards of Quality of Service of Access (Wireline and Wireless) and Broadband (Wireline And Wireless) Service Regulations to require frequent audits and meeting certain quality benchmarks. Not meeting such benchmarks leads to a disincentive.

Older technologies

Inter-telco call quality is limited due to older technologies used to interconnect such calls between different operators.

04A8. TRAI strengthens call quality app; telcos, public get access to reports

ट्राई ने कॉल गुणवत्ता ऐप को सशक्त बनाया; दूरसंचार कंपनियों और जनता को रिपोर्ट उपलब्ध होगी

- The **Telecom Regulatory Authority of India (TRAI)** unveiled an application to report issues with **call quality for Android devices**.

भारतीय दूरसंचार विनियामक प्राधिकरण (TRAI) ने एंड्रॉयड उपकरणों के लिए कॉल गुणवत्ता से संबंधित समस्याओं की रिपोर्ट करने हेतु एक नया अनुप्रयोग प्रस्तुत किया।

- The **MyCall app** allows users to score any given call's quality out of **five**, and report specific issues such as **echoes**, **low audio quality** and **inaudible calls**.

मायकॉल (MyCall) ऐप उपयोगकर्ताओं को किसी भी कॉल की गुणवत्ता को पाँच अंकों में अंक देने तथा प्रतिध्वनि (Echoes), कम ऑडियो गुणवत्ता और सुनाई न देने वाली कॉलों जैसी विशिष्ट समस्याओं की रिपोर्ट करने की सुविधा प्रदान करता है।

- The **app's insights** will be analysed by the **regulator** after collecting **anonymised data** on its own servers and low quality calls will also have **signal strength**, **location** and other data sent to **telecom operators** for them to improve systems, **TRAI Chairperson Anil Kumar Lahoti** said.

ट्राई के अध्यक्ष अनिल कुमार लाहोटी ने कहा कि यह ऐप अपने सर्वरों पर गोपनीय (Anonymised) आँकड़े एकत्र करेगा, जिनका विश्लेषण नियामक करेगा। निम्न गुणवत्ता वाली कॉलों से संबंधित सिग्नल शक्ति, स्थान (Location) तथा अन्य आँकड़े दूरसंचार सेवा प्रदाताओं को भी भेजे जाएँगे ताकि वे अपनी प्रणालियों में सुधार कर सकें।

- TRAI** is not inclined to mandate the installation of this app on **smartphones** via **phone makers**, **Mr. Lahoti** said responding to a question.

एक प्रश्न के उत्तर में श्री लाहोटी ने कहा कि ट्राई इस ऐप को स्मार्टफोन निर्माताओं के माध्यम से सभी स्मार्टफोनों में अनिवार्य रूप से स्थापित कराने के पक्ष में नहीं है।

- The **MyCall app** existed for years but most of the features unveiled on Monday were not available till the revamp.



मायकॉल ऐप कई वर्षों से उपलब्ध था, किन्तु सोमवार को प्रस्तुत की गई अधिकांश नई सुविधाएँ इसके अद्यतन संस्करण से पहले उपलब्ध नहीं थीं।

- The app follows the footsteps of **DND** and **MySpeed**, TRAI's revamped apps focusing on **spam calls, SMS reporting and Internet speed tests**.

यह ऐप ट्राई के संशोधित **DND** और **MySpeed** ऐप्स की श्रृंखला में शामिल है, जो स्पैम कॉल, एसएमएस रिपोर्टिंग तथा इंटरनेट गति परीक्षण पर केंद्रित हैं।

Call quality

कॉल गुणवत्ता

- A decade ago, it attempted to put in a **micro-penalty framework** to compensate customers for **dropped calls**.

लगभग एक दशक पहले इसने कॉल ड्रॉप से प्रभावित ग्राहकों को मुआवज़ा देने के लिए सूक्ष्म-दंड (Micro-penalty) व्यवस्था लागू करने का प्रयास किया था।

TRAI's New Digital Tools for Better Telecom Services

- The **Telecom Regulatory Authority of India (TRAI)** has introduced a set of upgraded mobile applications and regulatory measures to improve the quality of telecom services and protect consumers.
- These initiatives empower users to directly report problems, measure service quality, and help TRAI monitor telecom operators more effectively.

1. MyCall App – Rate the Quality of Your Phone Calls

- The **MyCall** app is designed for **Android smartphones** and enables users to provide instant feedback on the quality of every phone call they make or receive.

After completing a call, the app allows the user to:

- Give the call a **rating out of five stars**.
- Report specific issues such as:
 - Echo** (hearing your own voice repeatedly).
 - Low audio quality** (unclear or distorted voice).
 - Call drops** or interrupted conversations.
 - Inaudible calls**, where the other person's voice cannot be heard properly.

Example:

Suppose you are speaking to a customer care executive, but the voice repeatedly breaks and the call disconnects midway. Using the MyCall app, you can immediately rate the call and report the exact problem. TRAI can analyse this anonymous feedback to identify areas where telecom operators need to improve their network quality.

2. DND App – Report Spam Calls and SMS

The upgraded **DND (Do Not Disturb)** app helps consumers tackle unwanted promotional communications.

With this app, users can:

- Report **spam calls** and **unsolicited SMS messages**.
- Register or modify **Do Not Disturb (DND)** preferences.
- Help TRAI identify telemarketers who violate telecom regulations.

3. MySpeed App – Check Internet Performance

The **MySpeed** app measures the quality of mobile internet services.

It allows users to test:

- Download speed.
- Upload speed.
- Network latency (ping).
- Overall network performance.

4. Micro-Penalty Framework – Holding Telecom Operators Accountable

TRAI has also proposed a **micro-penalty framework**, under which telecom companies may face **small but frequent financial penalties** for repeated service deficiencies such as poor call quality, spam control failures, or non-compliance with quality standards.

Instead of imposing only large penalties after major violations, this approach encourages operators to correct problems quickly and maintain consistent service quality.

Why are these initiatives important?

- Together, the **MyCall**, **DND**, and **MySpeed** apps, along with the **micro-penalty framework**, create a consumer-centric telecom ecosystem.
- They enable citizens to actively participate in improving telecom services, while encouraging service providers to enhance **call quality, internet performance, and protection against spam communications**.
- Ultimately, these measures aim to ensure a more reliable, transparent, and accountable telecom sector in India.

Nauru, the world's third smallest country, changes name to Naoero



AFP

PCS
The Pacific Island country of Nauru has changed its name to the Republic of Naoero, its President said, matching the spelling and pronunciation in the national language. With 12,000 residents, Nauru is the world's third-smallest country by population size. The new name is spoken as Now-ero. AP

04A8. Nauru, the world's third smallest country, changes name to Napier

दुनिया के तीसरे सबसे छोटे देश नाउरु ने अपना नाम बदलकर नाओएरो रखा

- The **Pacific Island** country of **Nauru** has changed its name to the **Republic of Napier**, its **President** said, matching the **spelling** and **pronunciation** in the **national language**.

प्रशांत महासागर स्थित द्वीपीय देश नाउरु ने अपना नाम बदलकर



रिपब्लिक ऑफ नाओरो कर लिया है। इसके राष्ट्रपति ने कहा कि नया नाम राष्ट्रीय भाषा में प्रचलित वर्तनी और उच्चारण के अनुरूप रखा गया है।

- With **12,000 residents**, Nauru is the world's **third-smallest country by population size**. लगभग 12,000 निवासियों के साथ नाउरु जनसंख्या के आधार पर दुनिया का तीसरा सबसे छोटा देश है।
- The new name is spoken as **Now-ero**.
नए नाम का उच्चारण "नाउ-एरो (Now-ero)" किया जाता है।

Top 5 Smallest Countries by Area (with Population)

Rank	Country	Area (Approx.)	Population (Approx. 2025–26)	Capital
1	Vatican City	0.49 km ²	~800	Vatican City
2	Monaco	2.08 km ²	~39,000	Monaco
3	Nauru	21 km ²	~13,000	Yaren (de facto)
4	Tuvalu	26 km ²	~11,500–12,000	Funafuti
5	San Marino	61 km ²	~34,000	San Marino

Top 5 Smallest Countries/Territories by Population (with Area)

Rank	Country/Territory	Population (Approx. 2025–26)	Area	Capital
1	Vatican City	~800	0.49 km ²	Vatican City
2	Tokelau	~1,900	12 km ²	No official capital (administrative centre at Atafu)
3	Niue	~2,000	261 km ²	Alofi
4	Tuvalu	~11,500–12,000	26 km ²	Funafuti
5	Nauru	~13,000	21 km ²	Yaren (de facto)

'Bringing home a gold medal feels like a massive accomplishment'



04A8. 'Bringing home a gold medal feels like a massive accomplishment'

‘स्वर्ण पदक जीतकर देश लाना एक बहुत बड़ी उपलब्धि जैसा महसूस होता है’

- Competing in the **48kg category** is difficult, and managing the **weight** while **training** is a huge challenge.

48 किलोग्राम वर्ग में प्रतिस्पर्धा करना कठिन है, और **प्रशिक्षण** के दौरान **वजन** को नियंत्रित रखना एक बहुत बड़ी चुनौती है।

PCS

Competing in the 48kg category is difficult, and managing the weight while training is a huge challenge. But this is a part of our life, and I faced it. Having faced all that and to bring home a (CWG) gold medal feels like a massive accomplishment. I'll certainly put in my best effort for Asian Games — Mirabai Chanu, weightlifter.



- But this is a part of our **life**, and I faced it.
लेकिन यह हमारे **जीवन** का एक हिस्सा है, और मैंने इसका सामना किया।
- Having faced all that and to bring home a **(CWG) gold medal** feels like a massive **accomplishment**.
इन सभी चुनौतियों का सामना करने के बाद **(CWG) स्वर्ण पदक** जीतकर देश लाना एक बहुत बड़ी **उपलब्धि** जैसा महसूस होता है।
- I'll certainly put in my best **effort** for the **Asian Games** — **Mirabai Chanu, weightlifter**.
मैं निश्चित रूप से **एशियाई खेलों** के लिए अपना सर्वश्रेष्ठ प्रयास करूँगी — **मीराबाई चानू, भारोत्तोलक**।

GS Paper 1: History	04 August 2026
TOPICS COVERED	
04A8	Odisha seeks UNESCO tag for Puri Rath Yatra ओडिशा ने पुरी रथ यात्रा के लिए यूनेस्को मान्यता की मांग की

Odisha seeks UNESCO tag for Puri Rath Yatra

GS I: History

Satyashilpa Bank
BHUBANESWAR

Odisha Chief Minister Mohan Charan Majhi has sought the nomination of the Rath Yatra of Shree Jagannath, Puri, for inscription on UNESCO's list of intangible cultural heritage of humanity.

"The Rath Yatra of Lord Jagannath is not merely a religious festival but a timeless tradition that embodies India's rich cultural diversity, inclusivity, spirituality, craftsmanship, music, dance and community participation. Celebrated for centuries, it attracts millions of devotees and visitors from across the globe and stands as one of the most enduring symbols of India's living heritage," Mr. Majhi said in a letter addressed to Union Culture and Tourism Minister Gajendra Singh Shekhawat on Saturday.

dressed to Union Culture and Tourism Minister Gajendra Singh Shekhawat on Saturday.

The Chief Minister sought the intervention of Mr. Shekhawat to facilitate the examination of a proposal submitted by the Shree Jagannath Temple Administration seeking the nomination of the Rath Yatra of Shree Jagannath, Puri, for inscription on UNESCO's heritage List.

BJD criticises move

The Biju Janata Dal, however, said the Chief Minister's letter is "nothing more than a publicity-oriented exercise" aimed at diverting attention from the Bharatiya Janata Party government's alleged failure to conduct the past three Rath Yatras flawlessly.

one of the most enduring symbols of India's living heritage," Mr. Majhi said in a letter addressed to Union Culture and Tourism Minister Gajendra Singh Shekhawat on Saturday.

सदियों से मनाई जा रही यह परंपरा विश्वभर से लाखों श्रद्धालुओं और पर्यटकों को आकर्षित करती है तथा भारत की जीवंत सांस्कृतिक विरासत के सबसे स्थायी प्रतीकों में से एक है," श्री माझी ने शनिवार को केंद्रीय संस्कृति एवं पर्यटन मंत्री गजेंद्र सिंह शेखावत को लिखे पत्र में कहा।

04A8. Odisha seeks UNESCO tag for Puri Rath Yatra

ओडिशा ने पुरी रथ यात्रा के लिए यूनेस्को मान्यता की मांग की

- Odisha Chief Minister Mohan Charan Majhi has sought the nomination of the **Rath Yatra of Shree Jagannath, Puri**, for inscription on **UNESCO's List of the Intangible Cultural Heritage of Humanity**.

ओडिशा के मुख्यमंत्री मोहन चरण माझी ने श्री जगन्नाथ, पुरी की रथ यात्रा को यूनेस्को की मानवता की अमूर्त सांस्कृतिक धरोहर (Intangible Cultural Heritage of Humanity) सूची में शामिल किए जाने के लिए नामांकन की मांग की है।

- "The **Rath Yatra of Lord Jagannath** is not merely a religious festival but a timeless tradition that embodies India's rich cultural diversity, inclusivity, spirituality, craftsmanship, music, dance and community participation.

"भगवान जगन्नाथ की रथ यात्रा केवल एक धार्मिक उत्सव नहीं है, बल्कि एक कालातीत परंपरा है, जो भारत की समृद्ध सांस्कृतिक विविधता, समावेशिता, आध्यात्मिकता, शिल्पकला, संगीत, नृत्य तथा सामुदायिक सहभागिता का प्रतिनिधित्व करती है।

- Celebrated for centuries, it attracts millions of devotees and visitors from across the globe and stands as

As of 2026, India has 16 elements inscribed on UNESCO's Representative List of the Intangible Cultural Heritage of Humanity. India has no element on the *List of Intangible Cultural Heritage in Need of Urgent Safeguarding*.

S. No.	Intangible Cultural Heritage Element	State/Region	Year of Inscription	Category
1	Kutiyattam (Koodiyattam), Sanskrit Theatre	Kerala	2008	Performing Arts
2	Tradition of Vedic Chanting	Pan India	2008	Oral Traditions & Knowledge
3	Ramlila – Traditional Performance of the Ramayana	North India	2008	Performing Arts
4	Ramman – Religious Festival and Ritual Theatre of the Garhwal Himalayas	Uttarakhand	2009	Social Practices & Rituals
5	Chhau Dance	Odisha, Jharkhand & West Bengal	2010	Performing Arts
6	Kalbelia Folk Songs and Dances	Rajasthan	2010	Performing Arts
7	Mudiyettu – Ritual Theatre and Dance Drama	Kerala	2010	Performing Arts
8	Buddhist Chanting of Ladakh	Ladakh	2012	Oral Traditions
9	Sankirtana – Ritual Singing, Drumming and Dancing of Manipur	Manipur	2013	Performing Arts
10	Traditional Brass and Copper Craft of Utensil Making among the Thatheras of Jandiala Guru	Punjab	2014	Traditional Craftsmanship
11	Yoga	Pan India	2016	Knowledge & Practices concerning Nature and Well-being
12	Kumbh Mela	Prayagraj, Haridwar, Nashik & Ujjain	2017	Social Practices, Rituals & Festive Events
13	Durga Puja in Kolkata	West Bengal	2021	Social Practices & Festive Events
14	Garba of Gujarat	Gujarat	2023	Performing Arts / Social Practices
15	Nawrouz (Nowruz/Novruz) (Multinational Inscription including India)	India & several other countries	2024	Social Practices & Festive Events
16	Deepavali	Pan India	2025	Social Practices, Rituals & Festive Events

State-wise Distribution

State/Region	UNESCO Intangible Cultural Heritage
Kerala	Kutiyattam, Mudi yettu
Uttarakhand	Ramman
Rajasthan	Kalbelia
Punjab	Thatheras Craft
Ladakh	Buddhist Chanting
Manipur	Sankirtana
West Bengal	Durga Puja
Gujarat	Garba
Odisha	Chhau Dance (shared)
Jharkhand	Chhau Dance (shared)
Pan India	Vedic Chanting, Yoga, Deepavali
Multiple States	Kumbh Mela
Multinational	Nawrouz

GS Paper 1: Society		04 August 2026
TOPICS COVERED		
04A8	Domestic Cruelty Rules Cover Live-in Couples: SC घरेलू क्रूरता संबंधी प्रावधान लिव-इन संबंधों पर भी लागू: सर्वोच्च न्यायालय	
04A8	'New law can't take away rights given to transgender persons' 'नया कानून ट्रांसजेंडर व्यक्तियों को दिए गए अधिकार नहीं छीन सकता'	
04A8	Proof of life जीवन का प्रमाण	



Domestic cruelty rules cover live-in couples: SC

GS I: Society
The Hindu Bureau
NEW DELHI

The Supreme Court on Monday said the criminal offence of domestic cruelty would extend to live-in relationships between consenting adults that qualify as "relationships in the nature of marriage".

The judgment authored by a Bench headed by Justice Sanjay Karol said Section 498A (domestic cruelty) of the Indian Penal Code, now replaced by Sections 85 and 86 of the Bharatiya Nyaya Sanhita, should not be limited to married relationships alone. Live-in relationships were a reality in modern, urban life. The law must adapt.

The court reasoned that relationships in the nature of marriage and which show the requisite intent to marry were the "closest to marriage itself".

04A8. Domestic Cruelty Rules Cover Live-in Couples: SC

घरेलू क्रूरता संबंधी प्रावधान लिव-इन संबंधों पर भी लागू: सर्वोच्च न्यायालय

The judgment authored by a Bench headed by Justice Sanjay Karol said Section 498A (domestic cruelty) of the Indian Penal Code, now replaced by Sections 85 and 86 of the Bharatiya Nyaya Sanhita, should not be limited to married relationships alone.

न्यायमूर्ति संजय करोल की अध्यक्षता वाली पीठ द्वारा लिखे गए निर्णय में कहा गया कि भारतीय दंड संहिता (IPC) की धारा 498A (घरेलू क्रूरता), जिसे अब भारतीय न्याय संहिता (Bharatiya Nyaya Sanhita) की धारा 85 और 86 ने प्रतिस्थापित कर दिया है, केवल वैवाहिक संबंधों तक सीमित नहीं रहनी चाहिए।

04A8. 'New law can't take away rights given to transgender persons'

'नया कानून ट्रांसजेंडर व्यक्तियों को दिए गए अधिकार नहीं छीन सकता'

The Supreme Court on Monday orally clarified to the Union government that a new law, seen as dismantling the transgender community's right to self-identification, will not retrospectively, and by default, invalidate 'transgender cards' issued under a previous legislation.

उच्चतम न्यायालय ने सोमवार को केंद्र सरकार को

मौखिक रूप से स्पष्ट किया कि ट्रांसजेंडर समुदाय के स्व-पहचान (Self-identification) के अधिकार को कमजोर करने वाला माना जा रहा नया कानून, पूर्व कानून के अंतर्गत जारी किए गए 'ट्रांसजेंडर कार्ड' को पूर्वव्यापी प्रभाव से स्वतः अमान्य नहीं करेगा।

- The petitioners have argued that the 2026 Amendment Act, which came into force on March 30, is contrary to the NALSA judgment of the Supreme Court in 2014, which upheld transgender persons' right to self-determined gender identity and protected them from discrimination.

याचिकाकर्ताओं का तर्क है कि 30 मार्च से लागू 2026 का संशोधन अधिनियम, 2014 में उच्चतम न्यायालय द्वारा दिए गए NALSA निर्णय के विपरीत है, जिसमें ट्रांसजेंडर व्यक्तियों के स्व-निर्धारित लैंगिक पहचान के अधिकार को मान्यता दी गई थी तथा उन्हें भेदभाव से संरक्षण प्रदान किया गया था।

'New law can't take away rights given to transgender persons'

GS I: Society
Krisnakumar Rajagopal
NEW DELHI

The Supreme Court on Monday orally clarified to the Union government that a new law, seen as dismantling the transgender community's right to self-identification, will not retrospectively, and by default, invalidate 'transgender cards' issued under a previous legislation.

Petitioners, who include activists and community members, pointed out that the importance of the transgender identity cards cannot be trifled away by the Union government.

A lawyer, who identified as a member of the community, said the card was an essential part of her basic identity. "Every day I struggle. It is a struggle to even get a house to live in," she told a three-judge Bench headed by Chief Justice of India Surya Kant.

'Even if there is a change in legislation, the rights conferred or accrued must remain the same'

Justice Joymalya Bagchi, on the Bench, replied, "We assure you, we are concerned about your rights".

The petitioners have argued that the 2026 Amendment Act, which came into force on March 30, is contrary to a NALSA judgment of the Supreme Court in 2014 which upheld transgender persons' right to self-determined gender identity and protected them from discrimination.

"Even if there is a change in legislation, the rights conferred or accrued must remain the same," Justice Bagchi told the Centre, represented by Solicitor General Tushar Mehta.



GS I: Society

Proof of life

Bureaucratic paperwork must not result in exclusion

The Registration of Births and Deaths (Amendment) Bill 2026 passed in the Lok Sabha amends Section 13(3) of the 1969 Act. In the updated framework, registrations delayed for up to two years still require a district, a subdivisional or an authorised executive magistrate's order, but when the delay exceeds two years, a judicial magistrate is required to verify the event and pass an order. The 2023 amendment rendered birth certificates the principal, in fact near-conclusive, proof of date and place of birth for school admission, voter rolls and applications for passport, Aadhaar, driving licence and government jobs. It also allowed the Centre and States to create digital databases, and required them to share data with the Registrar General. As the certificate's gatekeeping power grew, so did the incentive to obtain one fraudulently, leading to the 2026 amendment. However, the Bill's passage lacked debate in the Lok Sabha as the Opposition was protesting the July 20 police crackdown on the CJP protests. Since identity documents have also become more politically sensitive, moving potentially more contentious cases into courts insulates the administration from accusations that it is arbitrarily granting or refusing documentation. But while judicial scrutiny places the decision at arm's length from the executive, erroneous decisions could prove more difficult for disadvantaged applicants to rectify.

The amendment also leaves the evidentiary rules unchanged. If the government believed executive magistrates were approving suspicious applications because the evidentiary standards were too lax, it could have prescribed more rigorous documentation, but it has not. Further, how the risk of fraudulent registrations rises after two years is unclear; the government has also not published evidence justifying a judicial magistrate's intervention at two years or whether it considered less burdensome alternatives. For now, it appears to be a compromise based possibly on shorter delays being common enough for administrative responses to resolve. Registrations are also not infrequently delayed for valid reasons, for example because they transpired in remote areas, or undocumented migrants realised a need for educational certificates. But when identity documents become indispensable to access state support, the government's policy instinct has been to raise the documents' level of assurance rather than render them more accessible. In the same vein, the amendment may further a broader philosophy that, in pursuit of bureaucratic certainty, treats the wrongful exclusion of legitimate citizens as an acceptable price to minimise the risk of wrongful inclusion. And the Rajya Sabha must debate the Bill to clarify whether this trade-off is backed by sufficient evidence.

04A8. Proof of life

जीवन का प्रमाण

- The **Registration of Births and Deaths (Amendment) Bill, 2026** passed in the **Lok Sabha** amends **Section 13(3)** of the **1969 Act**.

लोकसभा द्वारा पारित जन्म एवं मृत्यु पंजीकरण (संशोधन) विधेयक, 2026 1969 के अधिनियम की धारा 13(3) में संशोधन करता है।

- In the updated framework, **registrations delayed for up to two years still require a district, a sub-divisional or an authorised executive magistrate's order**, but when the delay exceeds **two years**, a **judicial magistrate** is required to verify the event and pass an order.

संशोधित व्यवस्था के अनुसार, दो वर्ष तक विलंबित पंजीकरण के लिए अब भी जिला, उप-मंडलीय अथवा अधिकृत कार्यपालक मजिस्ट्रेट के आदेश की आवश्यकता होगी, किंतु जब विलंब दो वर्ष से अधिक हो जाएगा, तब घटना का सत्यापन कर आदेश पारित करने के लिए न्यायिक मजिस्ट्रेट की आवश्यकता होगी।

- The **2023 amendment** rendered **birth certificates** the principal, in fact near-conclusive, proof of **date and place of birth** for **school admission, voter rolls** and applications for **passport, Aadhaar, driving licence and government jobs**.

2023 के संशोधन ने जन्म प्रमाण-पत्र को जन्म तिथि एवं जन्म स्थान का प्रमुख, बल्कि लगभग निर्णायक प्रमाण बना दिया, जिसका उपयोग विद्यालय में प्रवेश, मतदाता सूची, तथा पासपोर्ट, आधार, ड्राइविंग लाइसेंस और सरकारी नौकरियों के लिए आवेदन में किया जाता है।

- It also allowed the **Centre and States** to create **digital databases**, and required them to share data with the **Registrar General**.

इसने केंद्र और राज्यों को डिजिटल डेटाबेस बनाने की अनुमति भी दी तथा उन्हें महापंजीयक (Registrar General) के साथ आँकड़े साझा करना अनिवार्य किया।

GS Paper II: Polity

04 August 2026

TOPICS COVERED

04A8 Top Court Asks Govt. to Ensure Safe Footpaths

सर्वोच्च न्यायालय ने सरकार को सुरक्षित फुटपाथ सुनिश्चित करने का निर्देश दिया

Top court asks govt. to ensure safe footpaths

GS II: Polity
The Hindu Bureau
NEW DELHI:

The Supreme Court directed the Union government on Monday to provide pedestrians broad, clearly marked footpaths exclusively for their use.

A Bench headed by Justice P.S. Narasimha said the right to a clean and broad footpath was a fundamental right the state could afford to everyone without any big investment. "Wherever there is a road, there should be space for walkers. Make sure these spaces are not encroached upon," Justice Narasimha addressed Additional Solicitor-General K.M. Nataraj before posting the case after a fortnight.

On June 19, the apex court had declared the right to walk on demarcated and well-maintained footpaths a fundamental right.

04A8. Top Court Asks Govt. to Ensure Safe Footpaths सर्वोच्च न्यायालय ने सरकार को सुरक्षित फुटपाथ सुनिश्चित करने का निर्देश दिया

• The **Supreme Court** directed the **Union government** on Monday to provide **pedestrians** broad, clearly marked **footpaths** exclusively for their use. **सर्वोच्च न्यायालय** ने सोमवार को **केंद्र सरकार** को निर्देश दिया कि वह **पैदल यात्रियों** के लिए विशेष रूप से उनके उपयोग हेतु चौड़े तथा स्पष्ट रूप से चिह्नित **फुटपाथ** उपलब्ध कराए।

• A **Bench** headed by **Justice P.S. Narasimha** said the **right to a clean and broad footpath** was a **fundamental right** the **State** could afford to everyone without any big investment.

न्यायमूर्ति पी.एस. नरसिम्हा की अध्यक्षता वाली **पीठ** ने कहा कि स्वच्छ और चौड़े **फुटपाथ** का अधिकार एक **मौलिक अधिकार** है, जिसे **राज्य** बिना किसी बड़े निवेश के प्रत्येक नागरिक को उपलब्ध करा सकता है।

GS Paper II: Governance		04 August 2026
TOPICS COVERED		
04A8	The dilemma over PM SHRI in Kerala केरल में PM SHRI योजना को लेकर दुविधा	



The dilemma over PM SHRI in Kerala

The UDF is caught between the need for central funds and maintaining its integrity

STATE OF PLAY

GS II: Governance
Roshni R.K.

The much discussed PM SHRI (PM Schools for Rising India) scheme has the recently elected Congress-led United Democratic Front (UDF) government in Kerala in hot soup.

Events over the past few days seem to indicate that similar to the Pinarayi Vijayan-led Left Democratic Front (LDF) government that burnt its fingers after signing an MoU for implementing the centrally sponsored PM SHRI scheme in October last year, the UDF government too could be in for possible backlash if it decides to go ahead with it. It is deja vu all over again. The same issue. The same actors. Only the roles have reversed.

The UDF government led by Chief Minister V.D. Satheesan argued that it was forced to continue with the PM SHRI as the previous LDF government had already entered into an agreement with the Union government. The State badly needs the ₹1,158.13 crore in education funds being held up by the Centre. The volte-face could not have been more glaring, since Mr. Satheesan had earlier said that Mr. Vijayan, by inking the deal, had betrayed the national cause against the National Education Policy (NEP), 2020.

Wavering stance

A little over a month after forming the UDF government, Mr. Satheesan said that only the Union government had the right to withdraw from the MoU. Kerala became a party to it the moment the agreement was signed, an argument that the current Opposition vehemently denies.

In yet another U-turn, the



Chief Minister later denied that the government had said that it would implement the PM SHRI; UDF convener Adoor Prakash had said that the government would go ahead with the scheme, even as the report of a UDF Cabinet sub-committee on the PM SHRI was awaited. It prompted the Indian Union Muslim League (IUML) leader P.K. Kunhalikutty to assert that a final decision would be taken only after the sub-committee gave its report, exposing the fault lines within the UDF. Other Muslim organisations, such as the Samastha Kerala Jamiyyathul Ulama, have also been vocal about their opposition.

These repeated flip-flops made it evident that the government was in a bind over how to balance fiscal prudence, coalition pressures, and its ideological position on the NEP.

Pros and cons

The Union Minister of State for Education Jayant Chaudhary once replied in the Rajya Sabha, "States that do not sign the MoU or withdraw from the scheme stand to miss out on these benefits of PM SHRI scheme". It has to be remembered that Punjab had opted out of the scheme in 2023, but later went back on its decision after the Union government had frozen the funds.

On the other hand, there are concerns about the curriculum. The PM SHRI Schools

framework states that the curriculum should follow the National Curriculum Framework/State Curriculum Framework developed in accordance with new curricular structure of the NEP. The MoU, for its part, says that States should implement all the provisions of the NEP in its entirety. According to the NEP, States can prepare their own curricula and textbooks, incorporating the State's demands as needed. However, it goes on to say, "while doing so, it must be borne in mind that the NCERT curriculum would be taken as the nationally acceptable criterion." Last year, the former Minister for General Education V. Sivan Kutty had pointed out that the Union government had declared in 2022 that the objective of the Samagra Shiksha scheme was to help implement the NEP.

Even if the Union government does not appear to be intervening in the curriculum of the States at present, there is apprehension that other interventions such as curriculum-based programme implementation or prescription of teaching-learning materials/assessment patterns could well be thrust upon them.

Other than taking the legal route like Tamil Nadu did, the UDF has the option of writing to the Union government insisting on the freedom to decide its own curriculum. This undoubtedly will expose it to harsh criticism of allowing the NEP to be smuggled into the State. However, if it chooses not to implement the PM SHRI, it will lose out on crucial federal funding.

Damned if they do and damned if they don't – that is the UDF's dilemma on the PM SHRI scheme.

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04A8. The dilemma over PM SHRI in Kerala

केरल में PM SHRI योजना को लेकर दुविधा

PM SHRI Scheme

- PM SHRI stands for PM Schools for Rising India.
- It is a Centrally Sponsored Scheme of the Government of India for developing selected existing government schools into high-quality exemplar institutions that demonstrate the implementation of the National Education Policy, 2020.

Announcement and Launch

- The scheme was announced by the Prime Minister on 5 September 2022, on the occasion of Teachers' Day.
- The Union Cabinet approved the scheme on 7 September 2022.
- The scheme is being implemented for a five-year period from 2022–23 to 2026–27.

Responsible Ministry

- The scheme is administered by the Department of School Education and Literacy, under the Ministry of Education, Government of India.
- Implementation is undertaken through the existing administrative structures of Samagra Shiksha, the Kendriya Vidyalaya Sangathan, the Navodaya Vidyalaya Samiti, State and Union Territory governments, and local bodies.



Nature of the Scheme

- The ordinary Centre–State funding ratio is **60:40**.
- The ratio is **90:10** for the North-Eastern and Himalayan States and the Union Territory of Jammu and Kashmir.
- The Central Government bears **100 per cent of the expenditure** for Union Territories without legislatures.

Central Aim

- The central aim is to qualitatively strengthen more than **14,500 existing schools** and develop them as model institutions that embody the principles of the **National Education Policy, 2020**.
- These schools are expected to demonstrate modern infrastructure, inclusive education, innovative teaching, competency-based learning, environmental sustainability and strong community participation.
- They are also expected to mentor neighbouring schools and spread effective practices throughout the local school system.

Eligible Schools

- Only selected **existing schools** are upgraded under the scheme.
- Eligible institutions include schools managed by the Central Government, State Governments, Union Territory administrations and local bodies.
- Kendriya Vidyalayas and Jawahar Navodaya Vidyalayas are also covered.
- Eligible schools must possess a valid **UDISE+ code**.
- Elementary schools covering Classes I–V or I–VIII and secondary or senior-secondary schools covering combinations such as Classes I–X, I–XII, VI–X or VI–XII may be considered.
- For Kendriya Vidyalayas and Jawahar Navodaya Vidyalayas, eligible institutions generally include non-project schools functioning from permanent buildings.

Selection Process

- Schools are selected through a **Challenge Mode**, under which eligible schools compete for inclusion.
- In the first stage, the State or Union Territory signs a Memorandum of Understanding with the Union Government, committing itself to the implementation of the **National Education Policy, 2020**.
- In the second stage, an eligible pool of schools is identified on the basis of minimum benchmarks and UDISE+ data.
- In the third stage, eligible schools apply through the portal and demonstrate fulfilment of prescribed conditions.
- The claims made by schools are verified through physical inspection by State authorities, Kendriya Vidyalaya Sangathan or Navodaya Vidyalaya Samiti.
- Geo-tagging is used for selection and monitoring, with technical support from BISAG-N.



Budget and Financial Outlay

- The approved total project cost is **₹27,360 crore** for the five-year period from 2022–23 to 2026–27.
- The Central Government's share is **₹18,128 crore**.
- The combined State share is estimated at **₹9,232 crore**.
- The financial support is intended to strengthen existing schools rather than create an entirely separate parallel school system.

GS Paper II: International Relations		04 August 2026
TOPICS COVERED		
04A8	FIFA Foul फीफा की चूक	
04A8	Why has PoK erupted in protests? पाकिस्तान अधिकृत कश्मीर (PoK) में विरोध प्रदर्शन क्यों भड़क उठे हैं?	
04A8	Iraqi Kurdish leader calls on Syrian President for talks on integration एकीकरण पर वार्ता के लिए इराकी कुर्द नेता ने सीरियाई राष्ट्रपति से मुलाकात की	



GS II: IR

FIFA foul

Football's governing body must embrace fairness, not chase profit

The collapse of FIFA's controversial plan that would have helped private investors benefit from the World Cup and other flagship competitions represents the latest hit to the global body's reputation. In the aftermath of the 2026 World Cup, FIFA president Gianni Infantino hurriedly put together strategies to form the FIFA Forward Enterprise (FFE) to consolidate all revenue-generating operations, and invite private bodies to hold non-controlling stakes in the body. But this elicited enormous backlash from a number of FIFA's 211 member associations, with European governing body UEFA even declaring that its 55 members would boycott the World Cup. Europe is football's nerve-centre, and with the Asian Football Confederation and players' union FIFPRO also expressing apprehensions, and one of Mr. Infantino's senior advisers quitting in protest, the scheme was a non-starter. The episode has also reduced Mr. Infantino's standing, especially after the controversy-ridden World Cup, where political interference by the U.S. — one of the co-hosts — and rampant commercialisation severely diminished 'the beautiful game'. The now-shelved FFE was to be backed by a venture capitalist with familial ties to U.S. President Donald Trump, making the whole deal all the more suspect. The 2027 FIFA election, where Mr. Infantino was expected to be re-elected for a third full term, is no longer a cake-walk.

The saga has brought back into focus the conflict at the heart of FIFA's functioning and the patronage politics it enables. FIFA is the global regulator of the sport, and ideally, its commercial wing should be kept at an arm's length. However, the organisation's structure is such that the revenue generated is often used as leverage to extract favour. As a non-profit, FIFA is duty-bound to redistribute income amongst its members, but presidents — past and present — have turned it into a vote-catching tool to hold on to power. To approve the FFE project, FIFA had reportedly offered each of its members \$20 million upfront, and a direct beneficiary of this would have been Mr. Infantino at next year's election, for every association has one vote. However, history shows that moves to use legacy tournaments for self-aggrandisement are bound to fail. In 2018, the International Tennis Federation entered into a 25-year, \$3 billion partnership with a private investment firm to re-jig the over-a-century-old Davis Cup, with the promise of extra money for the game's global development. That agreement lasted just five years, with the shift from the traditional home-and-away format deeply unpopular and considered soul-shattering to the sport. It is time FIFA re-inculcates fairness, embraces consensus and shuns its president's unilateralism.

04A8. FIFA Foul

फीफा की चूक

- The collapse of **FIFA's** controversial plan that would have helped **private investors** benefit from the **World Cup** and other **flagship competitions** represents the latest hit to the global body's **reputation**. फीफा की उस विवादास्पद योजना का विफल होना, जो **निजी निवेशकों** को **विश्व कप** तथा अन्य **प्रमुख प्रतियोगिताओं** से लाभान्वित होने में सहायता देती, वैश्विक संस्था की प्रतिष्ठा को लगा नवीनतम आघात है।

- In the aftermath of the **2026 World Cup**, **FIFA president Gianni Infantino** hurriedly put together strategies to form the **FIFA Forward Enterprise (FFE)** to consolidate all **revenue-generating operations**, and invite **private bodies** to hold **non-controlling stakes** in the body.

2026 विश्व कप के बाद, फीफा के अध्यक्ष जियानी इन्फैंटिनो ने सभी राजस्व-सृजन गतिविधियों को एकीकृत करने तथा निजी संस्थाओं को संगठन में गैर-नियंत्रणकारी हिस्सेदारी रखने के लिए फीफा फॉरवर्ड एंटरप्राइज़ (FFE) के गठन की रणनीतियाँ शीघ्रता से तैयार कीं।

- But this elicited enormous **backlash** from a number of **FIFA's 211 member associations**, with European governing body **UEFA** even declaring that its **55 members** would **boycott the World Cup**.

किन्तु इस प्रस्ताव के विरुद्ध फीफा के 211 सदस्य संघों में से अनेक ने तीव्र विरोध व्यक्त किया, यहाँ तक कि यूरोपीय शासी निकाय **यूईएफए (UEFA)** ने घोषणा कर दी कि उसके **55 सदस्य विश्व कप** का बहिष्कार करेंगे।

- Europe** is football's **nerve-centre**, and with the **Asian Football Confederation** and players' union **FIFPRO** also expressing apprehensions, and one of Mr. **Infantino's** senior advisers quitting in protest, the scheme was a **non-starter**.

यूरोप फुटबॉल का केंद्र है, और जब एशियाई फुटबॉल परिसंघ, खिलाड़ियों के संगठन **FIFPRO** ने भी अपनी आशंकाएँ व्यक्त कीं तथा श्री **इन्फैंटिनो** के एक वरिष्ठ सलाहकार ने विरोधस्वरूप इस्तीफा दे दिया, तब यह योजना प्रारम्भ होने से पहले ही असफल हो गई।

- The episode has also reduced Mr. **Infantino's** standing, especially after the controversy-ridden **World Cup**, where **political interference** by the **U.S.** — one of the co-hosts — and rampant **commercialisation** severely diminished 'the beautiful game'.

इस प्रकरण ने श्री **इन्फैंटिनो** की प्रतिष्ठा को भी कम कर दिया, विशेषकर उस विवादग्रस्त विश्व कप के बाद, जहाँ सह-मेज़बानों में से एक **अमेरिका** के राजनीतिक

हस्तक्षेप तथा अत्यधिक व्यावसायीकरण ने 'सुंदर खेल' की गरिमा को गंभीर रूप से कम कर दिया।

- The now-shelved **FFE** was to be backed by a **venture capitalist** with familial ties to **U.S. President Donald Trump**, making the whole deal all the more suspect.

अब स्थगित की जा चुकी **FFE** योजना को ऐसे **वेंचर कैपिटलिस्ट** का समर्थन प्राप्त होना था, जिसके **अमेरिकी राष्ट्रपति डोनाल्ड ट्रम्प** के परिवार से संबंध थे, जिससे पूरा समझौता और अधिक संदेहास्पद बन गया।

- FIFA** is the global **regulator** of the sport, and ideally, its **commercial wing** should be kept at an arm's length.

फीफा इस खेल का वैश्विक **नियामक** है, और आदर्श रूप से उसके **व्यावसायिक प्रभाग** को उसके नियामक कार्यों से अलग रखा जाना चाहिए।

- However, the organisation's structure is such that the **revenue** generated is often used as **leverage** to extract favour.



किन्तु संगठन की संरचना ऐसी है कि अर्जित राजस्व का उपयोग प्रायः प्रभाव डालने और अनुकूलता प्राप्त करने के साधन के रूप में किया जाता है।

- To approve the FFE project, FIFA had reportedly offered each of its members \$20 million upfront, and a direct beneficiary of this would have been Mr. Infantino at next year's election, for every association has one vote.

बताया जाता है कि FFE परियोजना को स्वीकृति दिलाने के लिए फीफा ने अपने प्रत्येक सदस्य को अग्रिम रूप से 2 करोड़ अमेरिकी डॉलर देने का प्रस्ताव रखा था, और इसका प्रत्यक्ष लाभ अगले वर्ष के चुनाव में श्री इन्फैन्टिनो को मिलता, क्योंकि प्रत्येक सदस्य संघ के पास एक मत होता है।

- However, history shows that moves to use legacy tournaments for self-aggrandisement are bound to fail.

हालाँकि, इतिहास यह दर्शाता है कि ऐतिहासिक प्रतियोगिताओं का उपयोग स्व-प्रचार के लिए करने के प्रयास अंततः विफल ही होते हैं।

- In 2018, the International Tennis Federation entered into a 25-year, \$3 billion partnership with a private investment firm to re-jig the over-a-century-old Davis Cup, with the promise of extra money for the game's global development.

2018 में अंतरराष्ट्रीय टेनिस महासंघ ने खेल के वैश्विक विकास के लिए अतिरिक्त धन उपलब्ध कराने के वादे के साथ, सौ वर्ष से अधिक पुराने डेविस कप के पुनर्गठन हेतु एक निजी निवेश कंपनी के साथ 25 वर्ष की 3 अरब अमेरिकी डॉलर की साझेदारी की।

Why has PoK erupted in protests?

How did demands over prices evolve into a movement for greater political representation in PoK? How has Islamabad responded to the protests? What has India said about the unrest? How have international rights groups and overseas Kashmiris reacted to the crackdown?

GS II: IR

EXPLAINER

Kallol Bhattacharjee

The story so far:

Simmering discontent over inflation, lack of accountability and opaque governance in Pakistan-occupied Kashmir (PoK) has escalated into a violent crackdown by Pakistani security forces over the past week, leaving dozens dead and many more injured. Security forces have reportedly used assault weapons and sniper fire against protesters gathered in the main squares of cities such as Rawalakot and Muzaffarabad to oppose the three-phase election currently under way in PoK. The Jammu Kashmir Joint Awami Action Committee (JKJAAC), which has been leading the protests, claims that more than 50 people have been killed over the past week as demonstrations continue against what it alleges is a rigged election process.

Why are protests taking place in PoK?

PoK is caught between an establishment-backed election and a popular political movement opposing the political basis of that election. The JKJAAC has been protesting peacefully in Rawalakot, Muzaffarabad, and other locations in the region seeking to build a more representative political system in PoK. The three-phase elections started on July 27 and will conclude on August 11.

The movement, which emerged after the COVID-19 pandemic to curb the prices of essential items, has evolved over the years into a protest against the lack of political representation for the local population in the PoK legislature. The legislature of PoK has a total of 53 seats, out of which 45 are elected, and eight are nominated. But because of historical reasons, 12 seats out of the 45 are reserved for refugees of Indian Jammu and Kashmir who migrated after 1947. In elections for these 12 seats, refugee voters located outside PoK cast their ballots. Locals claim that the reserved seats



Supporters of the banned Joint Awami Action Committee, an alliance of civil society groups, start a fire to block a road during a protest in Muzaffarabad. REUTERS

reduce representation of communities from the region and allow Islamabad to override local concerns.

As the authorities proceeded with the election process without addressing the demand for removing the reserved seats, the JKJAAC called for a "long march". Though the authorities have responded with a harsh crackdown, the protesters have shown that they are not going away anytime soon as they have managed to sustain the protests for months. The protest received new momentum after a PhD scholar, Osama Jaleel, of Quaid-e-Azam University in Islamabad, was reportedly killed in police firing in Rawalakot. Before his death, Osama Jaleel had been noted on the Internet for his fiery speeches in the protest meetings in Rawalakot. The JKJAAC claims that a total of 86 persons have died in the security crackdown till July 31.

How is the political representation in Islamabad and PoK?

The federal government of Pakistan has had a complicated relationship with the region for years, as mainstream political parties such as the Pakistan Peoples Party and Pakistan Muslim League-Nawaz have not been able to fulfil the developmental aspirations of the people of PoK. In recent days, however, the situation has worsened following comments by leading

figures within the establishment about the protesters. Pakistan Defence Minister Khwaja Asif incensed public sentiments by referring to the protesters as "enemies just like Indians". The main complaint is that the mainstream political parties in Islamabad have not met the region's developmental needs. Locals allege that they have been neglected by Islamabad, echoing many of the same complaints long voiced by residents of Khyber Pakhtunkhwa and Balochistan, where protests and insurgencies have continued for decades. The second phase of polling on August 2 drew allegations of irregularities and rigging.

What has India said about the Rawalakot protests?

Over the past few months, the Ministry of External Affairs has repeatedly condemned the use of harsh methods against protesters in Rawalakot and in other parts of PoK. On July 31, the Ministry of External Affairs blamed the 'Pakistani Establishment' and said: "This crackdown has resulted in the tragic death of over 40 civilians and serious injuries to many. Its absolute disdain for the innocent people of PoK was laid bare when their Defence Minister branded the protesting civilians as enemies." Adding to this, the Special Assistant to Prime Minister on Political Affairs openly

admitted that the very 'mujahideen' that the Pak establishment trained, armed and sent to bleed India have now turned their guns inward, weaponising themselves against the state.

Mirwaiz Dr. Umar Farooq has expressed "deep concern" over the unrest across the LoC and called for dialogue. "We are deeply anguished by the continuing unrest and tragic loss of precious lives during the past month and a half," said Umar Farooq. The JKJAAC has opposed India's remarks, and in a statement on June 24, the group said it "firmly rejects any attempt by India to interpret, appropriate, or project the current situation in Azad Jammu and Kashmir in support of its own claims or geopolitical positions. The present civil rights movement is neither a proxy nor an extension of interstate rivalries. Any such characterisation is both inaccurate and misleading."

Is there a strategic dimension?

The protests have been concentrated in Rawalakot, which lies along the Line of Control, and Pakistan's response so far shows it will not tolerate instability in a region of primary importance to its security.

The strategic dimension of the disturbances can be assessed by the fact that Kotli, Muzaffarabad and Rawalakot – the areas where protests have taken place hosted terror-related targets that India had claimed to have hit in the May 2025 Operation Sindoor.

Apart from India, Amnesty International and influential leaders in the U.K. have also called for restraint from the Pakistani establishment. Responding to the existing communication blackout in PoK, Amnesty has said: "We urge the Pakistani authorities to restore all communications access and allow media and independent observers into the area." Non-resident Mirpurī Kashmiris, who have a strong community-level presence in the U.K., have started an online campaign to restrain Pakistan's security establishment from continuing with the repressive measures.

THE GIST

A movement that began over rising prices has evolved into a campaign against the PoK election process, with the JKJAAC demanding the removal of 12 reserved seats that it says undermine local representation.

Protests have intensified amid allegations of election rigging and a deadly security crackdown; Pakistan's response has drawn criticism from India, Amnesty International and U.K.-based Kashmiri groups.

04A8. Why has PoK erupted in protests?

पाकिस्तान अधिकृत कश्मीर (PoK) में विरोध प्रदर्शन क्यों भड़क उठे हैं?

- Simmering discontent over **inflation**, lack of **accountability** and **opaque governance** in **Pakistan-occupied Kashmir (PoK)** has escalated into a violent crackdown by **Pakistani security forces** over the past week, leaving dozens dead and many more injured.
पाकिस्तान अधिकृत कश्मीर (PoK) में महँगाई, जवाबदेही की कमी तथा अपारदर्शी शासन व्यवस्था को लेकर लंबे समय से पनप रहा असंतोष पिछले सप्ताह पाकिस्तानी सुरक्षा बलों की हिंसक कार्रवाई में बदल गया, जिसमें अनेक लोगों की मृत्यु हुई तथा कई अन्य घायल हुए।
- Security forces have reportedly used **assault weapons** and **sniper fire** against protesters gathered in the main squares of cities such as **Rawalakot** and **Muzaffarabad** to oppose the **three-phase election** currently under way in **PoK**.
रिपोर्टों के अनुसार, रावलकोट और मुज़फ़्फ़राबाद जैसे शहरों के मुख्य चौकों में तीन-चरणीय चुनाव के विरोध में एकत्रित प्रदर्शनकारियों पर सुरक्षा बलों ने असॉल्ट हथियारों और स्नाइपर गोलीबारी का उपयोग किया।
- The **Jammu Kashmir Joint Awami Action Committee (JKJAAC)**, which has been leading the protests, claims that more than **50 people** have been killed over the past week as demonstrations continue against what it alleges is a **rigged election process**.
प्रदर्शनों का नेतृत्व कर रही जम्मू-कश्मीर जॉइंट अवामी एक्शन कमेटी (JKJAAC) का दावा है कि पिछले सप्ताह **50 से अधिक लोगों** की मृत्यु हो चुकी है, क्योंकि संगठन के अनुसार **धांधलीपूर्ण चुनाव प्रक्रिया** के विरुद्ध प्रदर्शन जारी हैं।

Why are protests taking place in PoK?

PoK में विरोध प्रदर्शन क्यों हो रहे हैं?

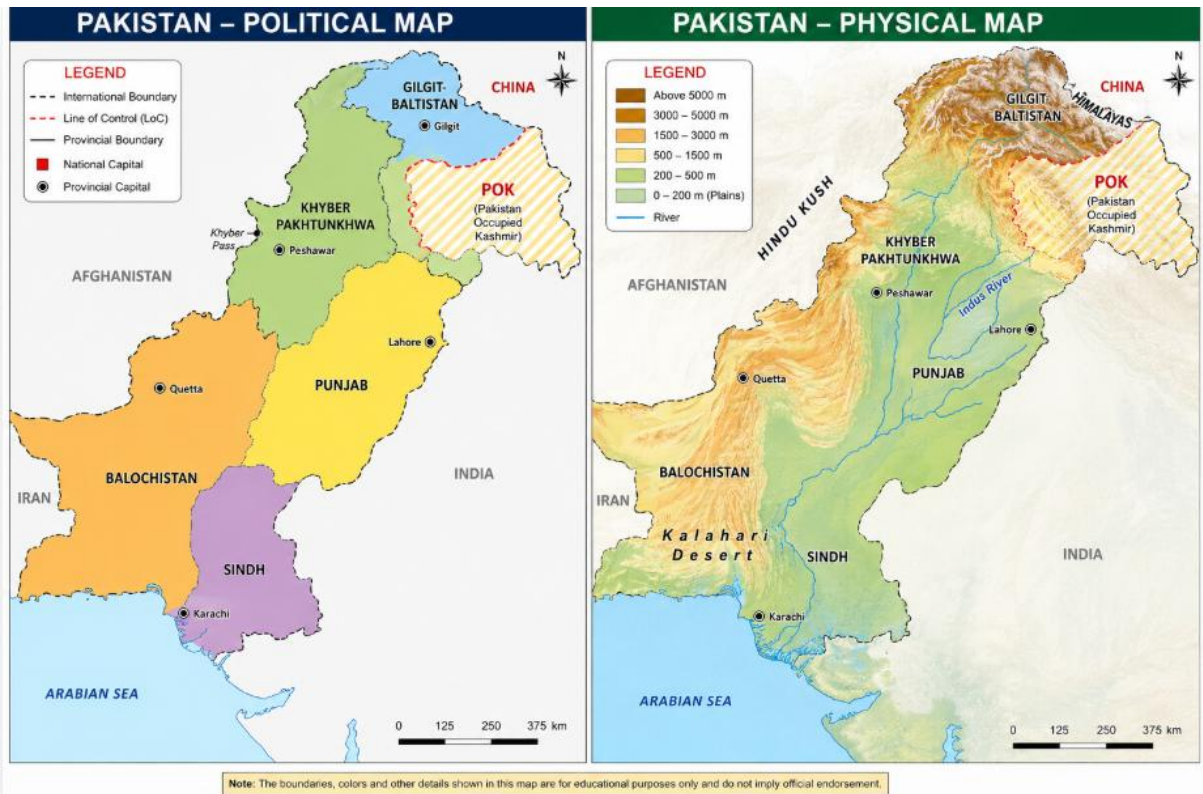
- **PoK is caught between an establishment-backed election and a popular political movement opposing the political basis of that election.**
पाकिस्तान अधिकृत कश्मीर (PoK) एक ओर सत्ता प्रतिष्ठान समर्थित चुनाव और दूसरी ओर उस चुनाव के राजनीतिक आधार का विरोध करने वाले जन-आंदोलन के बीच फँसा हुआ है।
- The **JKJAAC** has been protesting peacefully in **Rawalakot**, **Muzaffarabad**, and other locations in the region seeking to build a more representative political system in **PoK**.
JKJAAC रावलकोट, मुज़फ़्फ़राबाद तथा अन्य क्षेत्रों में शांतिपूर्ण प्रदर्शन कर रहा है और **PoK** में अधिक प्रतिनिधित्व वाली राजनीतिक व्यवस्था की माँग कर रहा है।
- The **three-phase elections** started on **July 27** and will conclude on **August 11**.
तीन-चरणीय चुनाव 27 जुलाई से प्रारम्भ हुए और **11 अगस्त** को समाप्त होंगे।
- The **movement, which emerged after the COVID-19 pandemic to curb the prices of essential items**, has evolved over the years into a protest against the lack of **political representation for the local population in the PoK legislature**.
यह आंदोलन, जो **कोविड-19 महामारी** के बाद **आवश्यक वस्तुओं** की कीमतों को नियंत्रित करने की माँग के साथ शुरू हुआ था, समय के साथ **PoK विधानसभा** में स्थानीय लोगों के **राजनीतिक प्रतिनिधित्व** की कमी के विरुद्ध आंदोलन में बदल गया।
- The **legislature of PoK has a total of 53 seats, out of which 45 are elected, and eight are nominated**.
PoK की विधानसभा में कुल **53 सीटें** हैं, जिनमें से **45 निर्वाचित** तथा **आठ मनोनीत** हैं।
- **But because of historical reasons, 12 seats out of the 45 are reserved for refugees of Indian Jammu and Kashmir who migrated after 1947.**
किन्तु ऐतिहासिक कारणों से **45 सीटों** में से **12 सीटें भारतीय जम्मू-कश्मीर** से **1947 के बाद विस्थापित शरणार्थियों** के लिए आरक्षित हैं।
- **In elections for these 12 seats, refugee voters located outside PoK cast their ballots.**
इन **12 सीटों** के चुनाव में **PoK** के बाहर रहने वाले शरणार्थी मतदाता मतदान करते हैं।

- Locals claim that the **reserved seats** reduce representation of communities from the region and allow **Islamabad** to override local concerns.
स्थानीय लोगों का दावा है कि **आरक्षित सीटें** क्षेत्रीय समुदायों के प्रतिनिधित्व को कम करती हैं तथा **इस्लामाबाद** को स्थानीय चिंताओं पर हावी होने का अवसर देती हैं।
- As the authorities proceeded with the election process without addressing the demand for removing the **reserved seats**, the **JKJAAC** called for a **"long march"**.
जब अधिकारियों ने **आरक्षित सीटों** को समाप्त करने की माँग पर विचार किए बिना चुनाव प्रक्रिया आगे बढ़ाई, तब **JKJAAC** ने **"लॉन्ग मार्च"** का आह्वान किया।
- Though the authorities have responded with a harsh **crackdown**, the protesters have shown that they are not going away anytime soon as they have managed to sustain the protests for months.
यद्यपि अधिकारियों ने कठोर **दमनात्मक कार्रवाई** की है, फिर भी प्रदर्शनकारियों ने यह दिखाया है कि वे शीघ्र पीछे हटने वाले नहीं हैं और वे कई महीनों से आंदोलन जारी रखने में सफल रहे हैं।
- The protest received new momentum after a **PhD scholar, Osama Jaleel**, of **Quaid-e-Azam University** in **Islamabad**, was reportedly killed in **police firing** in **Rawalakot**.
इस्लामाबाद स्थित **क़ायद-ए-आज़म विश्वविद्यालय** के पीएचडी शोधार्थी **ओसामा जलील** की **रावलाकोट** में कथित **पुलिस गोलीबारी** में मृत्यु के बाद आंदोलन को नया बल मिला।
- Before his death, **Osama Jaleel** had been noted on the Internet for his fiery speeches in the protest meetings in **Rawalakot**.
मृत्यु से पहले **ओसामा जलील रावलाकोट** की विरोध सभाओं में अपने जोशीले भाषणों के कारण इंटरनेट पर चर्चित थे।
- The **JKJAAC** claims that a total of **86 persons** have died in the security crackdown till **July 31**.
JKJAAC का दावा है कि **31 जुलाई** तक सुरक्षा बलों की कार्रवाई में कुल **86 लोगों** की मृत्यु हो चुकी है।

How is the political relation between Islamabad and PoK?

इस्लामाबाद और PoK के बीच राजनीतिक संबंध कैसे हैं?

- The **federal government of Pakistan** has had a complicated relationship with the region for years, as mainstream political parties such as the **Pakistan Peoples Party (PPP)** and **Pakistan Muslim League-Nawaz (PML-N)** have not been able to fulfil the **developmental aspirations** of the people of **PoK**.
पाकिस्तान की संघीय सरकार का इस क्षेत्र के साथ वर्षों से जटिल संबंध रहा है, क्योंकि **पाकिस्तान पीपुल्स पार्टी (PPP)** और **पाकिस्तान मुस्लिम लीग-नवाज़ (PML-N)** जैसी मुख्यधारा की राजनीतिक पार्टियाँ **PoK** के लोगों की **विकास संबंधी आकांक्षाओं** को पूरा करने में सफल नहीं रही हैं।
- In recent days, however, the situation has worsened following comments by leading figures within the establishment about the protesters.
हाल के दिनों में सत्ता प्रतिष्ठान के प्रमुख नेताओं द्वारा प्रदर्शनकारियों पर की गई टिप्पणियों के बाद स्थिति और अधिक गंभीर हो गई है।
- Pakistan Defence Minister Khawaja Asif** incensed public sentiments by referring to the protesters as **"enemies just like Indians"**.
पाकिस्तान के रक्षा मंत्री खवाजा आसिफ ने प्रदर्शनकारियों को **"भारतीयों की तरह दुश्मन"** बताकर जनभावनाओं को और भड़का दिया।
- The main complaint is that the mainstream political parties in **Islamabad** have not met the region's **developmental needs**.
मुख्य शिकायत यह है कि **इस्लामाबाद** की मुख्यधारा की राजनीतिक पार्टियाँ क्षेत्र की **विकास संबंधी आवश्यकताओं** को पूरा करने में विफल रही हैं।
- Locals allege that they have been neglected by **Islamabad**, echoing many of the same complaints long voiced by residents of **Khyber Pakhtunkhwa and Balochistan**, where protests and insurgencies have continued for decades.



स्थानीय लोगों का आरोप है कि इस्लामाबाद ने उनकी उपेक्षा की है, जो खैबर पख्तूनख्वा और बलूचिस्तान के निवासियों द्वारा लंबे समय से उठाई जा रही समान शिकायतों की पुनरावृत्ति है, जहाँ दशकों से विरोध प्रदर्शन और विद्रोह जारी हैं।

- The **second phase of polling** on **August 2** drew allegations of **irregularities** and **rigging**. 2 अगस्त को हुए मतदान के दूसरे चरण में अनियमितताओं तथा धांधली के आरोप लगाए गए।

What Has India Said About the Rawalakot Protests?

रावलाकोट विरोध प्रदर्शनों पर भारत ने क्या कहा है?

- Over the past few months, the **Ministry of External Affairs** has repeatedly condemned the use of harsh methods against **protesters** in **Rawalakot** and in other parts of **PoK**. पिछले कुछ महीनों में विदेश मंत्रालय ने रावलाकोट तथा पाकिस्तान अधिकृत कश्मीर (PoK) के अन्य भागों में प्रदर्शनकारियों के विरुद्ध कठोर तरीकों के प्रयोग की बार-बार निंदा की है।
- On **July 31**, the **Ministry of External Affairs** blamed the '**Pakistani Establishment**' and said: "This crackdown has resulted in the tragic death of over **40 civilians** and serious injuries to many. Its absolute disdain for the innocent people of **PoJK** was laid bare when their **Defence Minister** branded the protesting civilians as enemies." 31 जुलाई को विदेश मंत्रालय ने 'पाकिस्तानी सत्ता प्रतिष्ठान' को दोषी ठहराते हुए कहा, "इस दमनात्मक कार्रवाई के परिणामस्वरूप 40 से अधिक नागरिकों की दुखद मृत्यु हुई है तथा अनेक लोग गंभीर रूप से घायल हुए हैं। पाकिस्तान अधिकृत जम्मू-कश्मीर (PoJK) के निर्दोष लोगों के प्रति उसका पूर्ण तिरस्कार तब स्पष्ट हो गया जब उसके रक्षा मंत्री ने प्रदर्शनकारी नागरिकों को शत्रु करार दिया।"
- Adding to this, the **Special Assistant to Prime Minister on Political Affairs** openly admitted that the very '**mujahideen**' that the **Pak establishment** trained, armed and sent to bleed **India** have now turned their guns inward, weaponising themselves against the state. इसके अतिरिक्त, राजनीतिक मामलों पर प्रधानमंत्री के विशेष सहायक ने सार्वजनिक रूप से स्वीकार किया कि

जिन 'मुजाहिदीन' को पाकिस्तानी सत्ता प्रतिष्ठान ने प्रशिक्षित किया, हथियार दिए और भारत के विरुद्ध भेजा था, वे अब अपने ही राज्य के विरुद्ध हथियार उठाकर उसी के खिलाफ लड़ रहे हैं।

- **Mirwaiz Dr. Umar Farooq** has expressed "deep concern" over the unrest across the LoC and called for **dialogue**.

मीरवाइज डॉ. उमर फारूक ने नियंत्रण रेखा (LoC) के पार जारी अशांति पर "गहरी चिंता" व्यक्त करते हुए संवाद का आह्वान किया है।

- "We are deeply anguished by the continuing unrest and tragic loss of precious lives during the past month and a half," said **Umar Farooq**.

उमर फारूक ने कहा, "पिछले डेढ़ महीने से जारी अशांति और बहुमूल्य मानव जीवन की दुखद क्षति से हम अत्यंत व्यथित हैं।"

- The **JKJAAC** has opposed **India's** remarks, and in a statement on **June 24**, the group said it "firmly rejects any attempt by **India** to interpret, appropriate, or project the current situation in **Azad Jammu and Kashmir** in support of its own claims or geopolitical positions. The present **civil rights movement** is neither a proxy nor an extension of interstate rivalries. Any such characterisation is both inaccurate and misleading."

जेकेजेएएससी (JKJAAC) ने भारत की टिप्पणियों का विरोध किया है और **24 जून** को जारी एक बयान में कहा कि वह "भारत द्वारा **आज़ाद जम्मू-कश्मीर** की वर्तमान स्थिति की ऐसी किसी भी व्याख्या, प्रस्तुति या उपयोग को दृढ़ता से अस्वीकार करता है, जिसका उद्देश्य अपने दावों या भू-राजनीतिक दृष्टिकोण का समर्थन करना हो। वर्तमान **नागरिक अधिकार आंदोलन** न तो किसी का प्रतिनिधि आंदोलन है और न ही अंतर-राज्यीय प्रतिद्वंद्विता का विस्तार। ऐसा कोई भी चित्रण तथ्यहीन और भ्रामक है।"

Is There a Strategic Dimension?

क्या इसका कोई रणनीतिक आयाम है?

- The **protests** have been concentrated in **Rawalakot**, which lies along the **Line of Control**, and **Pakistan's** response so far shows it will not tolerate instability in a region of primary importance to its **security**.

विरोध प्रदर्शन मुख्यतः **रावलाकोट** में केंद्रित रहे हैं, जो **नियंत्रण रेखा (Line of Control)** के निकट स्थित है, और अब तक **पाकिस्तान** की प्रतिक्रिया यह दर्शाती है कि वह अपनी **सुरक्षा** के लिए अत्यंत महत्वपूर्ण इस क्षेत्र में अस्थिरता को स्वीकार नहीं करेगा।

- The **strategic dimension** of the disturbances can be assessed by the fact that **Kotli, Muzaffarabad** and **Rawalakot** — the areas where protests have taken place — hosted **terror-related targets** that **India** had claimed to have hit in the **May 2025 Operation Sindoor**.

इन अशांत घटनाओं के **रणनीतिक आयाम** का आकलन इस तथ्य से किया जा सकता है कि **कोटली, मुज़फ़्फ़राबाद और रावलाकोट**—जहाँ ये प्रदर्शन हुए—वे वही क्षेत्र हैं जहाँ स्थित **आतंकवाद-संबंधी ठिकानों** पर **भारत ने मई 2025 के ऑपरेशन सिंदूर** के दौरान कार्रवाई करने का दावा किया था।

- Apart from **India**, **Amnesty International** and influential leaders in the **U.K.** have also called for **restraint** from the **Pakistani establishment**.

भारत के अतिरिक्त, **एमनेस्टी इंटरनेशनल** तथा **यूनाइटेड किंगडम (यू.के.)** के प्रभावशाली नेताओं ने भी **पाकिस्तानी सत्ता प्रतिष्ठान** से **संयम** बरतने का आग्रह किया है।

- Responding to the existing **communication blackout** in **PoK**, **Amnesty** has said: "We urge the **Pakistani authorities** to restore all communications access and allow **media** and **independent observers** into the area."

पाकिस्तान अधिकृत कश्मीर (PoK) में जारी **संचार अवरोध** पर प्रतिक्रिया व्यक्त करते हुए **एमनेस्टी** ने कहा, "हम **पाकिस्तानी अधिकारियों** से आग्रह करते हैं कि वे सभी संचार सेवाएँ पुनः बहाल करें तथा **मीडिया और स्वतंत्र पर्यवेक्षकों** को इस क्षेत्र में प्रवेश की अनुमति दें।"

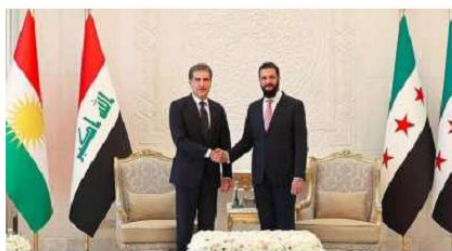


- **Non-resident Mirpuri Kashmiris**, who have a strong community-level presence in the **U.K.**, have started an online campaign to restrain **Pakistan's security establishment** from continuing with the **repressive measures**.

प्रवासी मीरपुरी कश्मीरी, जिनकी यूनाइटेड किंगडम (यू.के.) में मजबूत सामुदायिक उपस्थिति है, उन्होंने पाकिस्तान के सुरक्षा प्रतिष्ठान को दमनात्मक उपायों को जारी रखने से रोकने के लिए एक ऑनलाइन अभियान प्रारम्भ किया है।

Feature	Pakistan's Four Provinces	Gilgit-Baltistan (GB)	Pakistan-occupied Kashmir (AJK/PoK)
Constitutional Province	Yes	No (not formally a province)	No
Own Provincial Assembly	Yes	Yes	Yes
Separate Constitution	No	No	Yes (AJK Interim Constitution, 1974)
Representation in Pakistan's National Assembly	Yes	No	No
Representation in Pakistan's Senate	Yes	No	No
Official Position of Pakistan	Integral provinces	Separate administrative territory	Self-governing territory pending Kashmir settlement

Iraqi Kurdish leader calls on Syrian President for talks on integration



GS II: IR AFP
Syrian President Ahmed al-Sharaa met Nechirvan Barzani, leader of Iraq's Kurdistan region, on Monday, according to official sources on the issue of advancing an integration deal between Damascus and Syria's Kurds. It is the first visit by the Kurdish leader to the capital since the ouster of long-time ruler Bashar al-Assad in 2024. AFP

04A8. Iraqi Kurdish leader calls on Syrian President for talks on integration

एकीकरण पर वार्ता के लिए इराकी कुर्द नेता ने सीरियाई राष्ट्रपति से मुलाकात की

Region/Country	Kurdish Population Distribution
Turkey	Largest Kurdish population, concentrated in southeastern Turkey
Iran	Western provinces, especially Kordestan, Kermanshah and West Azerbaijan
Iraq	Northern Iraq (Kurdistan Region: Erbil, Sulaymaniyah, Duhok, Halabja)
Syria	Northern and northeastern Syria along the Turkish border

Region/Country	Kurdish Population Distribution
Pakistan	No traditional Kurdish homeland; only a very small expatriate/refugee community , mainly in large cities such as Islamabad, Karachi, and Lahore , with no concentrated settlement. Estimates suggest only a few hundred individuals.

GS Paper III: Economy		04 August 2026
TOPICS COVERED		
04A8	Critical minerals, the foundation of strategic power महत्वपूर्ण खनिज, सामरिक शक्ति की आधारशिला	
04A8	The problem with India's free trade agreement strategy भारत की मुक्त व्यापार समझौता (FTA) रणनीति की समस्या	
04A8	India may extend tax breaks for contract manufacturing भारत अनुबंध विनिर्माण (Contract Manufacturing) के लिए कर छूट बढ़ा सकता है	
04A8	ONGC to Reserve Half of Mangaluru Facility for Strategic Reserves ओएनजीसी मंगलूर सुविधा का आधा हिस्सा रणनीतिक भंडार के लिए सुरक्षित रखेगी	

Critical minerals, the foundation of strategic power

GS III: Economy

Critical minerals have moved from the margins of resource policy to the centre of industrial strategy and security. Lithium, cobalt, nickel, graphite, copper and rare earth elements are foundational to electric vehicles, storage, renewable power, semiconductors, defence and advanced manufacturing. As decarbonisation and digitalisation accelerate, mineral security is becoming as important as oil once was. The global supply picture is concentrated. For copper, lithium, nickel, cobalt, graphite and rare earth elements, the average market share of the top three refining countries rose to 86% in 2024, from around 82% in 2020. Incremental supply is tied to a few nodes: Indonesia for nickel, and China for cobalt, graphite and rare earths. China is the leading refiner in 19 out of 20 strategic minerals with an average market share of about 70%, making minerals geopolitical, not merely commercial.

Geopolitical risk as a factor

Clean energy transitions will require minerals far beyond today's production systems. The current copper project pipeline points to a potential 30% supply shortfall by 2035. Lithium appears better supplied in the near term but rising demand is expected to drive the market into deficit by the 2030s. Rare earth demand will rise sharply as wind power, electronics and magnets expand. Geopolitical risk is compounding these pressures. China's rare earth export controls announced in 2025 created concerns across energy, automotive, defence, aerospace, Artificial Intelligence (AI) and semiconductors. Major economies are responding quickly. The European Union (EU) Critical Raw Materials Act sets 2030 benchmarks of 10% domestic extraction, 40% processing and 25% recycling, with no more than 65% from a single country. The United States is diversifying supply chains through partnerships. India's clean energy and manufacturing ambitions are mineral intensive. Under a net zero scenario, cumulative demand for critical energy



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transition minerals could reach roughly 169 million tonnes by 2070, about 51% higher than under a current policy pathway. Copper demand will rise with power systems; rare earth demand will grow with wind energy and advanced manufacturing.

India has domestic potential, including reserves of cobalt (44.9 million tonnes), copper (163.9 million tonnes), graphite (211.6 million tonnes) and nickel (189 million tonnes), along with monazite deposits containing rare earth oxides. Recycling could eventually meet up to a quarter of copper and graphite demand by mid-century. Yet, reserves have not ensured supply security. India remains import dependent for lithium, cobalt and nickel, while graphite and China-dominated processing expose it to disruption as demand scales. The critical gap is processing and refining. India's position differs from the EU, the U.S. and Australia, which are building integrated supply chains through mandates, partnerships and processing investments. India is still developing foundational capability. While several minerals are processed domestically, capacity and high-purity production remain constrained. It has bulk-mineral experience but still relies on imports for high-purity critical mineral products.

This is where much value and vulnerability sit. In 2024, China accounted for over 90% of rare earths and graphite processing, nearly 75% of cobalt and 70% of lithium chemicals. India must build midstream capacity to participate meaningfully in supply chain realignment.

Structural constraints

Several constraints slow progress. Exploration remains relatively shallow, regulatory clearances can be time-consuming, private participation is limited and remote-region project economics are challenging. Processing is a larger bottleneck: India lacks some high-purity input facilities, while copper and graphite face smelting, purification and scale constraints. Recycling will play a role

but cannot substitute for primary supply in the near term because feedstock, collection and technology remain limited.

India's policy response since 2023 marks a shift. The government has identified 30 critical minerals, strengthened regulatory frameworks, and launched the National Critical Mineral Mission to support the value chain. The mission targets 1,200 domestic exploration projects by 2030-31, production of at least 15 critical minerals, and acquisition of 50 overseas mining assets by Indian companies. The Khanij Bidesh India Limited (KABIL) has secured 15,703 hectares in Argentina's Catamarca province for lithium exploration, while the 2026-27 Budget proposed rare earth corridors in Odisha, Kerala, Andhra Pradesh, and Tamil Nadu. The India-U.S. critical minerals and rare earths framework signed in May 2026 provides an additional diplomatic lever.

Mission to execution

The next phase is execution. Processing and refining must become a national industrial priority, backed by infrastructure and targeted incentives. Private capital needs better geological data, predictable approvals and risk sharing. India should also operationalise strategic stockpiles for critical minerals, accelerate applied research and development through industry partnerships, scale domestic capabilities and diversify overseas supply through trusted partners and platforms.

India energy transition, electronics, semiconductor, defence manufacturing, and advanced industrialisation all depend on secure mineral supplies. While individual policy measures are necessary, they are insufficient. A comprehensive strategy should establish mineral-specific risk thresholds, integrate recycling into supply planning, set measurable milestones, and create a coordinated institutional framework. The priority now is to convert potential into capability and reduce strategic vulnerability through sustained execution.

04A8. Critical minerals, the foundation of strategic power

महत्वपूर्ण खनिज, सामरिक शक्ति की आधारशिला

- **Critical minerals** have moved from the margins of resource policy to the centre of **industrial strategy** and **security**.



महत्वपूर्ण खनिज (Critical Minerals) संसाधन नीति के सीमांत से निकलकर औद्योगिक रणनीति और सुरक्षा के केंद्र में आ गए हैं।

- **Lithium, cobalt, nickel, graphite, copper and rare earth elements** are foundational to electric vehicles, energy storage, renewable power, semiconductors, defence and advanced manufacturing.
- **लिथियम, कोबाल्ट, निकेल, ग्रेफाइट, ताँबा (कॉपर) तथा दुर्लभ मृदा तत्व (Rare Earth Elements)** इलेक्ट्रिक वाहनों, ऊर्जा भंडारण, नवीकरणीय ऊर्जा, अर्धचालकों (सेमीकंडक्टर), रक्षा तथा उन्नत विनिर्माण की आधारशिला हैं।
- As **decarbonisation** and **digitalisation** accelerate, **mineral security** is becoming as important as oil once was.
- जैसे-जैसे **कार्बन-मुक्ति (Decarbonisation)** और **डिजिटलीकरण (Digitalisation)** तेज़ हो रहे हैं, **खनिज सुरक्षा** उतनी ही महत्वपूर्ण होती जा रही है जितनी कभी तेल हुआ करता था।
- The global supply picture is concentrated.
- वैश्विक आपूर्ति व्यवस्था कुछ सीमित देशों में केंद्रित है।
- For **copper, lithium, nickel, cobalt, graphite and rare earth elements**, the average market share of the top three **refining countries** rose to **86% in 2024**, from around **82% in 2020**.
- **ताँबा, लिथियम, निकेल, कोबाल्ट, ग्रेफाइट तथा दुर्लभ मृदा तत्वों के लिए शीर्ष तीन परिष्करण (Refining) देशों की औसत बाज़ार हिस्सेदारी 2020 के लगभग 82% से बढ़कर 2024 में 86% हो गई।**
- Incremental supply is tied to a few nodes: **Indonesia** for **nickel**, and **China** for **cobalt, graphite and rare earths**.
- अतिरिक्त आपूर्ति कुछ सीमित केंद्रों पर निर्भर है—**निकेल के लिए इंडोनेशिया, तथा कोबाल्ट, ग्रेफाइट और दुर्लभ मृदा तत्वों के लिए चीन।**
- **China** is the leading **refiner** in **19 out of 20 strategic minerals** with an average market share of about **70%**, making minerals **geopolitical**, not merely commercial.
- **चीन 20 में से 19 रणनीतिक खनिजों का प्रमुख परिष्करणकर्ता (Refiner) है, जिसकी औसत बाज़ार हिस्सेदारी लगभग 70% है, जिससे खनिज केवल वाणिज्यिक नहीं बल्कि भू-राजनीतिक विषय भी बन गए हैं।**

Geopolitical risk as a factor

एक कारक के रूप में भू-राजनीतिक जोखिम

- **Clean energy transitions** will require minerals far beyond today's production systems.
- **स्वच्छ ऊर्जा संक्रमण** के लिए वर्तमान उत्पादन प्रणालियों की तुलना में कहीं अधिक खनिजों की आवश्यकता होगी।
- The current **copper project pipeline** points to a potential **30% supply shortfall** by **2035**.
- वर्तमान **ताँबा परियोजना पाइपलाइन 2035 तक संभावित 30% आपूर्ति कमी** की ओर संकेत करती है।
- **Lithium** appears better supplied in the near term but rising demand is expected to drive the market into **deficit** by the **2030s**.
- निकट अवधि में **लिथियम** की आपूर्ति अपेक्षाकृत बेहतर दिखाई देती है, किन्तु बढ़ती मांग के कारण **2030 के दशक तक बाज़ार में घाटा उत्पन्न होने की संभावना है।**
- **Rare earth demand** will rise sharply as **wind power, electronics and magnets** expand.
- **पवन ऊर्जा, इलेक्ट्रॉनिक्स तथा चुंबकों के विस्तार के साथ दुर्लभ मृदा तत्वों की मांग तीव्र गति से बढ़ेगी।**
- **Geopolitical risk** is compounding these pressures.
- **भू-राजनीतिक जोखिम इन दबावों को और अधिक बढ़ा रहा है।**
- **China's rare earth export controls** announced in **2025** created concerns across **energy, automotive, defence, aerospace, Artificial Intelligence (AI) and semiconductors**.
- **2025 में घोषित चीन के दुर्लभ मृदा निर्यात नियंत्रणों ने ऊर्जा, ऑटोमोबाइल, रक्षा, एयरोस्पेस, कृत्रिम बुद्धिमत्ता (AI) तथा सेमीकंडक्टर क्षेत्रों में चिंता उत्पन्न कर दी।**

- Major economies are responding quickly.
प्रमुख अर्थव्यवस्थाएँ इस पर तीव्र गति से प्रतिक्रिया दे रही हैं।
- The **European Union (EU) Critical Raw Materials Act** sets **2030** benchmarks of **10% domestic extraction, 40% processing and 25% recycling**, and no more than **65%** from a single country.
यूरोपीय संघ (EU) के क्रिटिकल रॉ मैटेरियल्स अधिनियम ने 2030 तक 10% घरेलू खनन, 40% प्रसंस्करण, 25% पुनर्चक्रण तथा किसी एक देश पर 65% से अधिक निर्भरता न रखने का लक्ष्य निर्धारित किया है।
- The **United States** is diversifying **supply chains** through partnerships.
संयुक्त राज्य अमेरिका साझेदारियों के माध्यम से अपनी आपूर्ति श्रृंखलाओं का विविधीकरण कर रहा है।
- India's clean energy and manufacturing ambitions** are **mineral intensive**.
भारत की स्वच्छ ऊर्जा तथा विनिर्माण संबंधी महत्वाकांक्षाएँ अत्यधिक खनिज-आधारित हैं।
- Under a **net zero** scenario, cumulative demand for **critical energy transition minerals** could reach roughly **169 million tonnes** by **2070**, about **51%** higher than under a current policy pathway.
नेट जीरो परिदृश्य के अंतर्गत ऊर्जा संक्रमण के महत्वपूर्ण खनिजों की संचयी मांग 2070 तक लगभग 169 मिलियन टन तक पहुँच सकती है, जो वर्तमान नीतिगत मार्ग की तुलना में लगभग 51% अधिक होगी।
- Copper demand** will rise with **power systems**; **rare earth demand** will grow with **wind energy and advanced manufacturing**.
विद्युत प्रणालियों के विस्तार के साथ ताँबे की मांग बढ़ेगी, जबकि पवन ऊर्जा और उन्नत विनिर्माण के विस्तार के साथ दुर्लभ मृदा तत्वों की मांग में वृद्धि होगी।
- India** has domestic potential, including reserves of **cobalt (44.9 million tonnes)**, **copper (163.9 million tonnes)**, **graphite (211.6 million tonnes)** and **nickel (189 million tonnes)**, along with **monazite** deposits containing **rare earth oxides**.
भारत के पास घरेलू स्तर पर कोबाल्ट (44.9 मिलियन टन), ताँबा (163.9 मिलियन टन), ग्रेफाइट (211.6 मिलियन टन) तथा निकेल (189 मिलियन टन) के भंडार उपलब्ध हैं, साथ ही मोनाज़ाइट के ऐसे भंडार भी हैं जिनमें दुर्लभ मृदा ऑक्साइड पाए जाते हैं।
- Recycling** could eventually meet up to **one-quarter** of **copper** and **graphite** demand by **mid-century**.
पुनर्चक्रण (Recycling) के माध्यम से इस शताब्दी के मध्य तक ताँबे और ग्रेफाइट की मांग का लगभग एक-चौथाई भाग पूरा किया जा सकता है।
- Yet, reserves have not ensured **supply security**.
फिर भी, केवल भंडारों की उपलब्धता ने आपूर्ति सुरक्षा सुनिश्चित नहीं की है।
- India** remains **import dependent** for **lithium, cobalt and nickel**, while **graphite and China-dominated processing** expose it to disruption as demand scales.
भारत अभी भी लिथियम, कोबाल्ट तथा निकेल के लिए आयात पर निर्भर है, जबकि ग्रेफाइट और चीन-प्रधान प्रसंस्करण प्रणाली बढ़ती मांग के साथ उसे आपूर्ति व्यवधान के जोखिम के प्रति संवेदनशील बनाते हैं।
- The critical gap is **processing and refining**.
सबसे बड़ी कमी प्रसंस्करण और परिष्करण क्षमता में है।
- India's** position differs from the **EU**, the **U.S.** and **Australia**, which are building integrated **supply chains** through mandates, partnerships and processing investments.
भारत की स्थिति यूरोपीय संघ, संयुक्त राज्य अमेरिका तथा ऑस्ट्रेलिया से भिन्न है, जो नीतिगत प्रावधानों, साझेदारियों तथा प्रसंस्करण निवेश के माध्यम से एकीकृत आपूर्ति श्रृंखलाएँ विकसित कर रहे हैं।
- India** is still developing foundational capability.
भारत अभी भी बुनियादी क्षमताओं के विकास की प्रक्रिया में है।
- While several minerals are processed domestically, capacity and **high-purity production** remain constrained.
यद्यपि कई खनिजों का घरेलू स्तर पर प्रसंस्करण किया जाता है, फिर भी क्षमता तथा उच्च-शुद्धता उत्पादन अभी भी सीमित है।

- It has **bulk-mineral** experience but still relies on imports for **high-purity critical mineral products**.
भारत को थोक खनिजों के प्रसंस्करण का अनुभव है, किन्तु उच्च-शुद्धता वाले महत्वपूर्ण खनिज उत्पादों के लिए वह अभी भी आयात पर निर्भर है।
- This is where much value and vulnerability sit.
यही वह क्षेत्र है जहाँ सबसे अधिक मूल्य संवर्धन और सबसे अधिक संवेदनशीलता निहित है।
- In **2024, China** accounted for over **90%** of **rare earths** and **graphite processing**, nearly **75%** of **cobalt** and **70%** of **lithium chemicals**.
2024 में चीन का दुर्लभ मृदा तत्वों और ग्रेफाइट प्रसंस्करण में 90% से अधिक, कोबाल्ट प्रसंस्करण में लगभग 75%, तथा लिथियम रसायनों में लगभग 70% हिस्सा था।
- India** must build **midstream capacity** to participate meaningfully in **supply chain realignment**.
भारत को आपूर्ति श्रृंखला के पुनर्संरेखन (Supply Chain Realignment) में सार्थक भागीदारी सुनिश्चित करने के लिए मध्यवर्ती प्रसंस्करण क्षमता (Midstream Capacity) का विकास करना होगा।

Structural Constraints संरचनात्मक बाधाएँ

- Several **constraints** slow progress.
कई बाधाएँ प्रगति की गति को धीमा करती हैं।
- Exploration** remains relatively shallow, **regulatory clearances** can be time-consuming, **private participation** is limited and **remote-region project economics** are challenging.
खनिज अन्वेषण अभी भी अपेक्षाकृत सीमित है, नियामकीय स्वीकृतियाँ प्राप्त करने में अधिक समय लग सकता है, निजी क्षेत्र की भागीदारी सीमित है तथा दूरस्थ क्षेत्रों की परियोजनाओं की आर्थिक व्यवहार्यता चुनौतीपूर्ण है।
- Processing** is a larger bottleneck: **India** lacks some **high-purity input facilities**, while **copper** and **graphite** face **smelting, purification** and **scale constraints**.
प्रसंस्करण एक बड़ी बाधा है। भारत में कुछ उच्च-शुद्धता इनपुट सुविधाओं का अभाव है, जबकि ताँबा और ग्रेफाइट के क्षेत्र में गलन, शुद्धिकरण तथा विस्तार क्षमता संबंधी बाधाएँ मौजूद हैं।
- Recycling** will play a role but cannot substitute for **primary supply** in the near term because **feedstock, collection** and **technology** remain limited.
पुनर्चक्रण महत्वपूर्ण भूमिका निभाएगा, किन्तु निकट भविष्य में यह प्राथमिक आपूर्ति का विकल्प नहीं बन सकता, क्योंकि कच्चे माल, संग्रहण व्यवस्था तथा प्रौद्योगिकी की उपलब्धता अभी भी सीमित है।
- India's** policy response since **2023** marks a shift.
2023 के बाद से भारत की नीतिगत प्रतिक्रिया एक महत्वपूर्ण परिवर्तन को दर्शाती है।
- The **government** has identified **30 critical minerals**, strengthened **regulatory frameworks**, and launched the **National Critical Mineral Mission** to support the **value chain**.
सरकार ने 30 महत्वपूर्ण खनिजों की पहचान की है, नियामकीय ढाँचे को सुदृढ़ किया है तथा मूल्य श्रृंखला को समर्थन देने के लिए राष्ट्रीय महत्वपूर्ण खनिज मिशन प्रारम्भ किया है।
- The **mission** targets **1,200 domestic exploration projects** by **2030-31**, production of at least **15 critical minerals**, and acquisition of **50 overseas mining assets** by Indian companies.
इस मिशन का लक्ष्य 2030-31 तक 1,200 घरेलू अन्वेषण परियोजनाएँ, कम-से-कम 15 महत्वपूर्ण खनिजों का उत्पादन तथा भारतीय कंपनियों द्वारा 50 विदेशी खनन परिसंपत्तियों का अधिग्रहण है।
- The **Khanij Bidesh India Limited (KABIL)** has secured **15,703 hectares** in **Argentina's Catamarca province** for **lithium exploration**, while the **2026-27 Budget** proposed **rare earth corridors** in **Odisha, Kerala, Andhra Pradesh, and Tamil Nadu**.
खनिज विदेश इंडिया लिमिटेड (KABIL) ने लिथियम अन्वेषण के लिए अर्जेंटीना के कैटामार्का प्रांत में 15,703

हेक्टेयर क्षेत्र सुरक्षित किया है, जबकि 2026-27 के बजट में ओडिशा, केरल, आंध्र प्रदेश तथा तमिलनाडु में दुर्लभ मृदा गलियारों (रेयर अर्थ कॉरिडोर) का प्रस्ताव किया गया है।

- The India-U.S. critical minerals and rare earths framework signed in May 2026 provides an additional diplomatic lever.

मई 2026 में हस्ताक्षरित भारत-अमेरिका महत्वपूर्ण खनिज एवं दुर्लभ मृदा रूपरेखा एक अतिरिक्त कूटनीतिक साधन प्रदान करती है।

Mission to Execution

मिशन से क्रियान्वयन तक

- The next phase is **execution**.
अगला चरण क्रियान्वयन का है।
- **Processing** and **refining** must become a national **industrial priority**, backed by **infrastructure** and **targeted incentives**.
प्रसंस्करण और परिशोधन को अवसंरचना तथा लक्षित प्रोत्साहनों के समर्थन के साथ राष्ट्रीय औद्योगिक प्राथमिकता बनाया जाना चाहिए।
- **Private capital** needs better **geological data**, predictable **approvals** and **risk sharing**.
निजी पूँजी को बेहतर भूवैज्ञानिक आँकड़ों, पूर्वानुमेय स्वीकृतियों तथा जोखिम-साझेदारी की आवश्यकता है।
- **India** should also operationalise **strategic stockpiles** for **critical minerals**, accelerate **applied research and development** through **industry partnerships**, scale **domestic capabilities** and diversify **overseas supply** through **trusted partners** and platforms.
भारत को महत्वपूर्ण खनिजों के लिए रणनीतिक भंडार स्थापित करने, उद्योग साझेदारियों के माध्यम से अनुप्रयुक्त अनुसंधान एवं विकास को गति देने, घरेलू क्षमताओं का विस्तार करने तथा विश्वसनीय साझेदारों एवं मंचों के माध्यम से विदेशी आपूर्ति स्रोतों का विविधीकरण करने की दिशा में कार्य करना चाहिए।
- **India's energy transition, electronics, semiconductor, defence manufacturing, and advanced industrialisation** all depend on secure **mineral supplies**.
भारत का ऊर्जा संक्रमण, इलेक्ट्रॉनिक्स, अर्धचालक (सेमीकंडक्टर), रक्षा विनिर्माण तथा उन्नत औद्योगीकरण सभी सुरक्षित खनिज आपूर्ति पर निर्भर हैं।
- While individual **policy measures** are necessary, they are insufficient.
यद्यपि अलग-अलग नीतिगत उपाय आवश्यक हैं, फिर भी वे पर्याप्त नहीं हैं।
- A comprehensive **strategy** should establish **mineral-specific risk thresholds**, integrate **recycling** into **supply planning**, set measurable **milestones**, and create a coordinated **institutional framework**.
एक व्यापक रणनीति में खनिज-विशिष्ट जोखिम सीमाएँ निर्धारित की जानी चाहिए, पुनर्चक्रण को आपूर्ति योजना में एकीकृत किया जाना चाहिए, मापनीय लक्ष्य निर्धारित किए जाने चाहिए तथा एक समन्वित संस्थागत ढाँचा विकसित किया जाना चाहिए।
- The priority now is to convert **potential** into **capability** and reduce **strategic vulnerability** through sustained **execution**.
अब प्राथमिकता संभावना को क्षमता में परिवर्तित करने तथा निरंतर क्रियान्वयन के माध्यम से रणनीतिक संवेदनशीलता को कम करने की होनी चाहिए।

The problem with India's free trade agreement strategy

India's trade with key FTA partners such as the ASEAN countries has become increasingly import-driven, resulting in widening trade deficits

GS III: Economy

DATA POINT

Surendar Singh

Over the past few years, India has shown great interest in trade diplomacy to promote its economic and strategic interests. India's new founded enthusiasm in external engagement has culminated in Free Trade Agreements (FTAs) with the UAE, Australia, Oman, the U.K., the European Union, and most recently, New Zealand. Its imperative to enhance market access continues to extend the reach of its trade architecture through ongoing trade talks with the U.S., Gulf countries and Canada, highlighting a decisive shift towards bilateralism as a vehicle of market access, value chain integration and economic dynamism. There is an emerging view among policymakers, trade diplomats, and geopolitical analysts that FTAs are indispensable instruments of economic statecraft. However, the enthusiasm on enhanced market access through trade agreements and Global Value Chain (GVC) integration is founded on a set of implicit assumptions and dominant narratives that continue to maintain a striking analytical silence. The argument that FTAs stimulate export growth and GVC integration warrants a far more nuanced view.

Widening trade deficit

India's FTA experience with Asian economies has not been favourable. India's trade with key FTA partners such as the Association of Southeast Asian Nations (ASEAN), South Korea, Japan and Singapore has become increasingly import-driven, resulting in widening trade deficits. Data shows that India's trade deficit with ASEAN increased sharply from \$10.4 billion in 2012 to \$51.2 billion in 2025, driven by rapidly rising imports. In the same manner, imports increased at a much faster pace than exports in the case of Japan and South Korea.

India's trade surplus has turned into a trade deficit in the case of Singapore after signing the trade agreement, exhibiting weakening export competitiveness.

India's export performance across its major Asian FTA partners such as ASEAN, Japan, South Korea and Singapore reveals an intriguing picture – its underperformance. India's share of the import basket among FTA partners has either stagnated or gradually eroded between 2012 to 2025, indicating a weakening in its export competitiveness post-FTAs. The most striking decline is in the case of ASEAN countries where India's share of ASEAN's import basket dropped from 3.42% to 1.71% while in the case of Singapore, the import share declined from 2.27% to 1.71%. Similarly, India's share in South Korea's import basket has declined from 1.33% to 1.02% while its share in Japan's import basket shows mixed trends.

Collectively, these trends indicate that instead of leveraging trade agreements to integrate into regional production networks, India is stuck on the margins of manufacturing-led trade integration. The inability to capitalise on tariff preferences under the FTAs demonstrates that market access based on tariff elimination alone cannot compensate for weak domestic industrial capabilities, logistical inefficiencies, and infrastructure and operational constraints. India's trade challenge is not fundamentally about negotiating more FTAs but about strengthening domestic productive capabilities and associated impediments. Without adequate industrial transformation, FTAs risk becoming instruments that increase import penetration faster than export competitiveness, thereby widening asymmetrical trade outcomes and structural vulnerabilities.

Moreover, FTAs are often presented as GVC drivers, eliminating barriers to the development of shared production arrangements and industrial upgrading. It is in-

teresting to note that India's GVC integration related to trade as a percentage of gross trade declined from 37.13% to 34.38%, indicating that India's integration in GVC networks has actually weakened. India's GVC trade as a share of gross trade with its FTA partners has declined in the case of South Korea, Japan, Indonesia, Thailand, Vietnam, and Cambodia. Only in the case of Malaysia, Singapore and Philippines, has it increased.

These trends demonstrate that India's FTAs have not translated into broad-based GVC integration. This evidence challenges the conventional assumption that FTAs automatically foster GVC integration through trade liberalisation. Moreover, it raises questions about the proposition that deeper commitments to market access and regulatory harmonisation are, in themselves, sufficient to promote GVC participation. The contemporary policy narrative surrounding India's new FTAs and their ability to integrate into GVCs raises some critical questions.

An assessment

The declining export shares and weakening GVC integration in the case of India's key FTA partners clearly highlight the limitations of considering FTAs primarily as instruments of market access. It is understandable that FTAs may enhance market access in certain product categories, but their abilities to foster productive capabilities is still contested. This essentially means that India's FTA strategy needs to move beyond the standard argument of market access. It should focus on greater interaction with the broader industrial policy framework that emphasises technological upgrading, strategic investment, supply chain realignment, domestic value addition and domestic reforms. Without such policies, FTAs are likely to remain instruments of trade liberalisation that constrain policy flexibilities rather than drivers of industrial transformation.

Are the FTAs working?

The data for the charts were sourced from the International Trade Centre - Trade Map



Piyush Goyal, S. Jaishankar, European Council President António Costa, and other officials at the India-EU FTA meeting in Brussels on July 15

CHART 1: India's percentage share in the import basket of ASEAN, Japan, South Korea, and Singapore

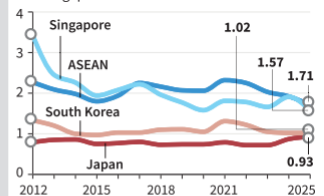


TABLE 1: India's trade with key FTA partners (in \$ billions)

Partner	Indicator	2012	2015	2018	2021	2024	2025
ASEAN	Export	32.3	26.35	36.25	40.68	42.71	35.96
	Import	42.74	41.47	57.51	64.84	81.87	87.19
	Trade balance	-10.44	-15.12	-21.26	-24.16	-39.16	-51.23
Japan	Export	6.4	4.5	4.8	6.1	5.8	6.1
	Import	12.4	9.6	12.6	14.4	18.9	20.9
	Trade balance	-5.95	-5.17	-7.83	-8.34	-13.06	-14.77
South Korea	Export	4.1	3.6	4.8	7.1	6	6
	Import	13.7	13.1	16.4	17.1	20.9	21.1
	Trade balance	-9.6	-9.48	-11.62	-9.97	-14.98	-15.12
Singapore	Export	13.6	7.8	10.5	10.7	15.7	10.7
	Import	7.8	7.4	14.5	18.2	20.5	23.7
	Trade balance	5.76	0.4	-3.99	-7.55	-4.87	-12.97

TABLE 2: India's global value chain-related trade as a share of gross trade with Asian FTA partners

	2012	2020	GVC integration (Increase/Decrease)
Indonesia	41.77	30.1	-11.67
Japan	41.07	28.44	-12.63
Malaysia	49.92	50.26	0.34
South Korea	63.18	41.58	-21.6
Thailand	48.32	47.65	-0.67
Singapore	66.87	69.54	2.67
Philippines	30.47	33.9	3.43
Vietnam	56.89	54.57	-2.32
Cambodia	47.43	44.34	-3.09

The declining share of GVC-related trade in total trade with several major FTA partners shows that preferential market access has been inadequate to bolster India's participation in global production networks. This evidence challenges the conventional assumption that FTAs automatically foster GVC integration through trade liberalisation.

The author is an Associate Professor at Jindal School of Liberal Arts and Humanities, O.P. Jindal Global University, Sonapat. Views are personal

04A8. The problem with India's free trade agreement strategy

भारत की मुक्त व्यापार समझौता (FTA) रणनीति की समस्या

- Over the past few years, India has shown great interest in trade diplomacy to promote its economic and strategic interests.

पिछले कुछ वर्षों में भारत ने अपने आर्थिक तथा सामरिक हितों को बढ़ावा देने के लिए व्यापार कूटनीति में विशेष रुचि दिखाई है।

- India's newfound enthusiasm in external engagement has culminated in Free Trade Agreements (FTAs) with the UAE, Australia, Oman, the U.K., the European Union, and most recently, New Zealand.

बाहरी आर्थिक सहभागिता के प्रति भारत का नया उत्साह संयुक्त अरब अमीरात (UAE), ऑस्ट्रेलिया, ओमान, यूनाइटेड किंगडम (U.K.), यूरोपीय संघ (European Union) तथा हाल ही में न्यूजीलैंड के साथ मुक्त व्यापार समझौतों (Free Trade Agreements - FTAs) के रूप में सामने आया है।

- Its imperative to enhance **market access** continues to extend the reach of its **trade architecture** through ongoing trade talks with the **U.S., Gulf countries** and **Canada**, highlighting a decisive shift towards **bilateralism** as a vehicle of market access, **value chain integration** and economic dynamism.
बाज़ार तक पहुँच (Market Access) बढ़ाने की आवश्यकता के कारण भारत **संयुक्त राज्य अमेरिका (U.S.)**, **खाड़ी देशों** तथा **कनाडा** के साथ चल रही व्यापार वार्ताओं के माध्यम से अपने **व्यापार ढाँचे (Trade Architecture)** का विस्तार कर रहा है, जो **द्विपक्षीयता (Bilateralism)** को बाज़ार पहुँच, **मूल्य श्रृंखला एकीकरण (Value Chain Integration)** तथा आर्थिक गतिशीलता के प्रमुख साधन के रूप में स्थापित करता है।
- There is an emerging view among **policymakers, trade diplomats, and geopolitical analysts** that **FTAs** are indispensable instruments of **economic statecraft**.
नीति-निर्माताओं, व्यापार कूटनीतिज्ञों तथा भू-राजनीतिक विश्लेषकों के बीच यह धारणा उभर रही है कि **मुक्त व्यापार समझौते (FTAs)** आर्थिक राज्यकला (**Economic Statecraft**) के अपरिहार्य साधन हैं।
- However, the enthusiasm on enhanced **market access** through trade agreements and **Global Value Chain (GVC)** integration is founded on a set of implicit assumptions and dominant narratives that continue to maintain a striking analytical silence.
किन्तु व्यापार समझौतों तथा **वैश्विक मूल्य श्रृंखला (Global Value Chain - GVC)** के एकीकरण के माध्यम से बढ़ी हुई **बाज़ार पहुँच** को लेकर जो उत्साह है, वह कुछ अंतर्निहित मान्यताओं और प्रमुख विमर्शों पर आधारित है, जिनकी विश्लेषणात्मक समीक्षा अपेक्षाकृत कम हुई है।
- The argument that **FTAs** stimulate **export growth** and **GVC integration** warrants a far more nuanced view.
यह तर्क कि **मुक्त व्यापार समझौते (FTAs)** निर्यात वृद्धि और **वैश्विक मूल्य श्रृंखला एकीकरण** को प्रोत्साहित करते हैं, अधिक संतुलित और गहन विश्लेषण की अपेक्षा करता है।

Widening trade deficit

बढ़ता हुआ व्यापार घाटा

- India's **FTA experience with Asian economies** has not been favourable.
एशियाई अर्थव्यवस्थाओं के साथ भारत का **मुक्त व्यापार समझौतों (FTA)** का अनुभव अनुकूल नहीं रहा है।
- India's trade with key **FTA partners** such as the **Association of Southeast Asian Nations (ASEAN)**, **South Korea**, **Japan** and **Singapore** has become increasingly **import-driven**, resulting in widening **trade deficits**.
आसियान (Association of Southeast Asian Nations - ASEAN), **दक्षिण कोरिया**, **जापान** तथा **सिंगापुर** जैसे प्रमुख **एफटीए साझेदारों** के साथ भारत का व्यापार लगातार अधिक **आयात-प्रधान** होता गया है, जिसके परिणामस्वरूप **व्यापार घाटा** बढ़ा है।
- Data shows that India's **trade deficit with ASEAN** increased sharply from **\$10.4 billion** in **2012** to **\$51.2 billion** in **2025**, driven by rapidly rising imports.
आँकड़ों के अनुसार, **आसियान** के साथ भारत का **व्यापार घाटा 2012 में 10.4 अरब डॉलर** से बढ़कर **2025 में 51.2 अरब डॉलर** हो गया, जिसका मुख्य कारण आयात में तीव्र वृद्धि रही।
- In the same manner, imports increased at a much faster pace than exports in the case of **Japan** and **South Korea**.
इसी प्रकार **जापान** और **दक्षिण कोरिया** के मामले में भी आयात की वृद्धि निर्यात की तुलना में कहीं अधिक तेज़ रही।
- India's **trade surplus** has turned into a **trade deficit** in the case of **Singapore** after signing the trade agreement, exhibiting weakening **export competitiveness**.
व्यापार समझौते पर हस्ताक्षर के बाद **सिंगापुर** के साथ भारत का **व्यापार अधिशेष व्यापार घाटे** में बदल गया, जो **निर्यात प्रतिस्पर्धात्मकता** में कमजोरी को दर्शाता है।
- India's **export performance** across its major Asian **FTA partners** such as **ASEAN**, **Japan**, **South Korea** and **Singapore** reveals an intriguing picture — its underperformance.

आसियान, जापान, दक्षिण कोरिया तथा सिंगापुर जैसे प्रमुख एशियाई एफटीए साझेदारों के साथ भारत का निर्यात प्रदर्शन एक उल्लेखनीय तथ्य प्रस्तुत करता है—अपेक्षाकृत कमजोर प्रदर्शन।

- India's share of the **import basket** among **FTA partners** has either stagnated or gradually eroded between **2012 to 2025**, indicating a weakening in its **export competitiveness** post-FTAs.
2012 से 2025 के बीच एफटीए साझेदारों के आयात बास्केट में भारत की हिस्सेदारी या तो स्थिर रही है अथवा धीरे-धीरे घटती गई है, जो एफटीए के बाद भारत की निर्यात प्रतिस्पर्धात्मकता में कमी का संकेत देती है।
- The most striking decline is in the case of **ASEAN countries** where India's share of **ASEAN's import basket** dropped from **3.42% to 1.71%** while in the case of **Singapore**, the import share declined from **2.27% to 1.71%**.
सबसे उल्लेखनीय गिरावट आसियान देशों के मामले में देखी गई, जहाँ आसियान के आयात बास्केट में भारत की हिस्सेदारी 3.42% से घटकर 1.71% रह गई, जबकि सिंगापुर के मामले में यह हिस्सेदारी 2.27% से घटकर 1.71% हो गई।
- Similarly, India's share in **South Korea's import basket** has declined from **1.33% to 1.02%** while its share in **Japan's import basket** shows mixed trends.
इसी प्रकार दक्षिण कोरिया के आयात बास्केट में भारत की हिस्सेदारी 1.33% से घटकर 1.02% हो गई है, जबकि जापान के आयात बास्केट में भारत की हिस्सेदारी मिश्रित रुझान प्रदर्शित करती है।
- Collectively, these **trends** indicate that instead of leveraging **trade agreements** to integrate into **regional production networks**, **India** is stuck on the margins of **manufacturing-led trade integration**.
सामूहिक रूप से, ये प्रवृत्तियाँ संकेत देती हैं कि भारत, व्यापार समझौतों का उपयोग क्षेत्रीय उत्पादन नेटवर्कों में एकीकृत होने के बजाय, विनिर्माण-आधारित व्यापार एकीकरण के हाशिए पर ही बना हुआ है।
- The inability to capitalise on **tariff preferences** under the **FTAs** demonstrates that **market access** based on **tariff elimination** alone cannot compensate for weak **domestic industrial capabilities**, **logistical inefficiencies**, and **infrastructure** and **operational constraints**.
मुक्त व्यापार समझौतों (FTAs) के अंतर्गत उपलब्ध टैरिफ रियायतों का लाभ उठाने में असमर्थता यह दर्शाती है कि केवल टैरिफ समाप्ति पर आधारित बाज़ार पहुँच, कमजोर घरेलू औद्योगिक क्षमताओं, लॉजिस्टिक अक्षमताओं, तथा अवसंरचनात्मक एवं संचालनगत बाधाओं की भरपाई नहीं कर सकती।
- India's trade challenge** is not fundamentally about negotiating more **FTAs** but about strengthening **domestic productive capabilities** and addressing associated impediments.
भारत की व्यापारिक चुनौती का मूल प्रश्न अधिक मुक्त व्यापार समझौतों (FTAs) पर वार्ता करना नहीं, बल्कि घरेलू उत्पादक क्षमताओं को सुदृढ़ करना तथा उनसे संबंधित बाधाओं का समाधान करना है।
- Without adequate **industrial transformation**, **FTAs** risk becoming instruments that increase **import penetration** faster than **export competitiveness**, thereby widening **asymmetrical trade outcomes** and **structural vulnerabilities**.
पर्याप्त औद्योगिक परिवर्तन के अभाव में, मुक्त व्यापार समझौते (FTAs) ऐसे साधन बन सकते हैं जो निर्यात प्रतिस्पर्धात्मकता की तुलना में आयात की पैठ को अधिक तेज़ी से बढ़ाएँ, जिससे असमान व्यापारिक परिणाम और संरचनात्मक कमजोरियाँ बढ़ें।
- Moreover, **FTAs** are often presented as **GVC** drivers, eliminating barriers to the development of shared **production arrangements** and **industrial upgrading**.
इसके अतिरिक्त, मुक्त व्यापार समझौतों (FTAs) को प्रायः वैश्विक मूल्य शृंखलाओं (GVCs) के प्रेरक के रूप में प्रस्तुत किया जाता है, जो साझा उत्पादन व्यवस्थाओं और औद्योगिक उन्नयन के विकास में आने वाली बाधाओं को दूर करते हैं।
- It is interesting to note that **India's GVC integration** related to trade as a percentage of **gross trade** declined from **37.13% to 34.38%**, indicating that **India's** integration in **GVC networks** has actually weakened.
यह उल्लेखनीय है कि सकल व्यापार के प्रतिशत के रूप में भारत का वैश्विक मूल्य शृंखला (GVC) एकीकरण



37.13% से घटकर 34.38% रह गया है, जो यह दर्शाता है कि भारत का वैश्विक मूल्य शृंखला नेटवर्क में एकीकरण वास्तव में कमजोर हुआ है।

- **India's GVC trade** as a share of **gross trade** with its **FTA partners** has declined in the case of **South Korea, Japan, Indonesia, Thailand, Vietnam, and Cambodia**.
अपने मुक्त व्यापार समझौता (FTA) साझेदारों के साथ सकल व्यापार में भारत के GVC व्यापार का हिस्सा दक्षिण कोरिया, जापान, इंडोनेशिया, थाईलैंड, वियतनाम और कंबोडिया के मामले में घटा है।
- Only in the case of **Malaysia, Singapore and Philippines**, has it increased.
केवल मलेशिया, सिंगापुर और फिलीपींस के मामले में इसमें वृद्धि हुई है।
- These **trends** demonstrate that **India's FTAs** have not translated into broad-based **GVC integration**.
ये प्रवृत्तियाँ दर्शाती हैं कि भारत के मुक्त व्यापार समझौते (FTAs) व्यापक वैश्विक मूल्य शृंखला (GVC) एकीकरण में परिवर्तित नहीं हो पाए हैं।
- This evidence challenges the conventional assumption that **FTAs** automatically foster **GVC integration** through **trade liberalisation**.
यह प्रमाण इस पारंपरिक धारणा को चुनौती देता है कि मुक्त व्यापार समझौते (FTAs) व्यापार उदारीकरण के माध्यम से स्वतः वैश्विक मूल्य शृंखला (GVC) एकीकरण को बढ़ावा देते हैं।
- Moreover, it raises questions about the proposition that **deeper commitments to market access** and **regulatory harmonisation** are, in themselves, sufficient to promote **GVC participation**.
इसके अतिरिक्त, यह इस धारणा पर भी प्रश्न उठाता है कि बाज़ार पहुँच और नियामकीय सामंजस्य के प्रति अधिक गहन प्रतिबद्धताएँ अपने आप में वैश्विक मूल्य शृंखला (GVC) सहभागिता को बढ़ावा देने के लिए पर्याप्त हैं।
- The contemporary **policy narrative** surrounding **India's** new **FTAs** and their ability to integrate into **GVCs** raises some critical questions.
भारत के नए मुक्त व्यापार समझौतों (FTAs) तथा उनके वैश्विक मूल्य शृंखलाओं (GVCs) में एकीकरण की क्षमता से जुड़ी समकालीन नीतिगत चर्चा कई महत्वपूर्ण प्रश्न उठाती है।

An Assessment

एक मूल्यांकन

- The declining **export shares** and weakening **GVC integration** in the case of **India's** key **FTA partners** clearly highlight the limitations of considering **FTAs** primarily as instruments of **market access**.
भारत के प्रमुख मुक्त व्यापार समझौता (FTA) साझेदारों के साथ घटते निर्यात हिस्से और कमजोर होती वैश्विक मूल्य शृंखला (GVC) एकीकरण की स्थिति स्पष्ट रूप से यह दर्शाती है कि मुक्त व्यापार समझौतों (FTAs) को केवल बाज़ार पहुँच का साधन मानने की अपनी सीमाएँ हैं।
- It is understandable that **FTAs** may enhance **market access** in certain **product categories**, but their abilities to foster **productive capabilities** is still contested.
यह स्वीकार्य है कि मुक्त व्यापार समझौते (FTAs) कुछ उत्पाद श्रेणियों में बाज़ार पहुँच बढ़ा सकते हैं, किन्तु उत्पादक क्षमताओं के विकास में उनकी भूमिका अब भी विवाद का विषय है।
- This essentially means that **India's FTA strategy** needs to move beyond the standard argument of **market access**.
इसका मूल अर्थ यह है कि भारत की मुक्त व्यापार समझौता (FTA) रणनीति को केवल बाज़ार पहुँच के पारंपरिक तर्क से आगे बढ़ना होगा।
- It should focus on greater interaction with the broader **industrial policy framework** that emphasises **technological upgrading, strategic investment, supply chain realignment, domestic value addition** and **domestic reforms**.



इसे व्यापक औद्योगिक नीति ढाँचे के साथ अधिक समन्वय पर ध्यान देना चाहिए, जो प्रौद्योगिकीय उन्नयन, रणनीतिक निवेश, आपूर्ति शृंखला के पुनर्संरक्षण, घरेलू मूल्य संवर्धन तथा घरेलू सुधारों पर बल देता है।

- Without such policies, FTAs are likely to remain instruments of trade liberalisation that constrain policy flexibilities rather than driving industrial transformation.

ऐसी नीतियों के अभाव में, मुक्त व्यापार समझौते (FTAs) व्यापार उदारीकरण के ऐसे साधन बनकर रह जाएँगे जो नीतिगत लचीलेपन को सीमित करेंगे, न कि औद्योगिक परिवर्तन को गति देंगे।

India may extend tax breaks for contract manufacturing

The extension up to March 31, 2041 is 'to provide (tax) certainty', according to a draft of the proposed tax amendments; move a major win for Apple which had lobbied for such changes

GS III: Economy

Reuters

NEW DELHI

India has proposed extending tax exemptions until 2041 for foreign companies that provide machinery to contract manufacturers, handing a major win to Apple which had lobbied for such changes, and is fast expanding in the market.

India has been a key market for Apple as it diversifies iPhone manufacturing beyond China, and the South Asian nation is set to make 26% of the world's iPhones in 2026, up from 6% four years ago, according to Counterpoint Research. According to a draft of the proposed tax amendments seen by Reuters, "to provide (tax) certainty" the government has extended tax breaks



Apple lobbied to ensure it is not taxed for ownership of the high-end iPhone machinery it provides to its contract manufacturers. AP

until March 31, 2041 to foreign companies that provide equipment to their contract manufacturers in India. India introduced the tax exemption for foreign companies in February, valid only until 2031, after Apple lobbied the Indian government to modify its income tax laws to ensure the company is not taxed

for ownership of the high-end iPhone machinery it provides to its contract manufacturers.

Apple had feared that, unlike in China, tax laws in India could treat ownership of machinery supplied to its contract manufacturers as "business connection", exposing its iPhone profits to tax.

The extended tax exemption will apply to manufacturers of mobile phones, tablets, laptops, hearing and wearable electronic devices, as per the draft bill that will have to be passed by both houses of Parliament.

Storing components

India has exempted from tax foreign firms' income from storing and providing parts used to manufacture such electronics components to contract manufacturers until 2041.

The rule will apply to factories and warehouses in customs-bonded areas, which are technically considered being outside India's customs border.

If devices are sold within India from such factories, they will attract import taxes.

04A8. India may extend tax breaks for contract manufacturing

भारत अनुबंध विनिर्माण (Contract Manufacturing) के लिए कर छूट बढ़ा सकता है

- India has proposed extending tax exemptions until 2041 for foreign companies that provide machinery to contract manufacturers, handing a major win to Apple, which had lobbied for such changes and is fast expanding in the market.

भारत ने अनुबंध विनिर्माताओं (Contract Manufacturers) को मशीनरी उपलब्ध कराने वाली विदेशी



कंपनियों के लिए 2041 तक कर छूट (Tax Exemptions) बढ़ाने का प्रस्ताव दिया है। इससे एप्पल (Apple) को बड़ी राहत मिलेगी, जिसने इस प्रकार के बदलाव के लिए पैरवी की थी और जो भारतीय बाज़ार में तेज़ी से विस्तार कर रही है।

- India has been a key market for **Apple** as it diversifies **iPhone manufacturing** beyond **China**, and the South Asian nation is set to make **26%** of the world's **iPhones** in **2026**, up from **6%** four years ago, according to **Counterpoint Research**.
चीन से बाहर आईफोन विनिर्माण का विस्तार करने की रणनीति के तहत भारत, एप्पल के लिए एक प्रमुख बाज़ार बन गया है। काउंटरपॉइंट रिसर्च (Counterpoint Research) के अनुसार, 2026 में विश्व के 26% आईफोन भारत में निर्मित होंगे, जबकि चार वर्ष पहले यह आँकड़ा केवल 6% था।
- According to a draft of the proposed **tax amendments** seen by Reuters, "to provide **tax certainty**" the government has extended **tax breaks** until **March 31, 2041** to **foreign companies** that provide equipment to their **contract manufacturers** in India.
रॉयटर्स द्वारा देखे गए प्रस्तावित कर संशोधन के मसौदे के अनुसार, "कर संबंधी निश्चितता (Tax Certainty)" प्रदान करने के उद्देश्य से सरकार ने भारत में अपने अनुबंध विनिर्माताओं को उपकरण उपलब्ध कराने वाली विदेशी कंपनियों के लिए 31 मार्च 2041 तक कर छूट बढ़ा दी है।
- India introduced the **tax exemption** for **foreign companies** in **February**, valid only until **2031**, after **Apple** lobbied the Indian government to modify its **income tax laws** to ensure the company is not taxed for ownership of the high-end **iPhone machinery** it provides to its **contract manufacturers**.
भारत ने फरवरी में विदेशी कंपनियों के लिए यह कर छूट लागू की थी, जिसकी वैधता केवल 2031 तक थी। यह निर्णय एप्पल द्वारा आयकर कानूनों में संशोधन की मांग के बाद लिया गया, ताकि अपने अनुबंध विनिर्माताओं को उपलब्ध कराई गई उच्च-स्तरीय आईफोन मशीनरी के स्वामित्व के कारण कंपनी पर कर न लगाया जाए।
- **Apple** had feared that, unlike in **China**, tax laws in **India** could treat ownership of machinery supplied to its **contract manufacturers** as "**business connection**", exposing its **iPhone profits** to tax.
एप्पल को आशंका थी कि चीन के विपरीत भारत के कर कानून उसके अनुबंध विनिर्माताओं को उपलब्ध कराई गई मशीनरी के स्वामित्व को "व्यावसायिक संबंध (Business Connection)" मान सकते हैं, जिससे उसके आईफोन से होने वाले लाभ पर कर लगाया जा सकता है।
- The extended **tax exemption** will apply to manufacturers of **mobile phones, tablets, laptops, hearing devices** and **wearable electronic devices**, as per the draft bill that will have to be passed by both Houses of **Parliament**.
प्रस्तावित विधेयक के अनुसार, जिसे संसद के दोनों सदनों से पारित होना होगा, विस्तारित कर छूट मोबाइल फोन, टैबलेट, लैपटॉप, श्रवण उपकरण (Hearing Devices) तथा पहनने योग्य इलेक्ट्रॉनिक उपकरणों (Wearable Electronic Devices) के निर्माताओं पर लागू होगी।

Storing components

घटकों का भंडारण

- India has exempted from tax **foreign firms' income** from storing and providing **parts** used to manufacture such **electronic components** to **contract manufacturers** until **2041**.
भारत ने 2041 तक विदेशी कंपनियों की उस आय को कर से मुक्त कर दिया है, जो ऐसे इलेक्ट्रॉनिक घटकों के निर्माण में प्रयुक्त पुर्जों (Parts) के भंडारण तथा उन्हें अनुबंध विनिर्माताओं को उपलब्ध कराने से प्राप्त होती है।
- The rule will apply to **factories** and **warehouses** in **customs-bonded areas**, which are technically considered being outside **India's customs border**.
यह प्रावधान सीमा-शुल्क बंधित क्षेत्रों (Customs-Bonded Areas) में स्थित कारखानों और गोदामों पर लागू होगा, जिन्हें तकनीकी रूप से भारत की सीमा-शुल्क सीमा के बाहर माना जाता है।



- If devices are sold within **India** from such factories, they will attract **import taxes**.
यदि ऐसे कारखानों से उपकरणों की बिक्री **भारत** के भीतर की जाती है, तो उन पर **आयात शुल्क (Import Taxes)** लगाया जाएगा।

ONGC to reserve half of Mangaluru facility for strategic reserves

GS III: Economy
The Hindu Bureau
NEW DELHI

State-owned Oil and Natural Gas Corporation (ONGC) will reserve half of its 1.75 million metric tonne (MMT) oil storage facility in Mangaluru as a strategic storage, Suresh Gopi, Minister of State (MoS) for Petroleum and Natural Gas, told the Rajya Sabha on Monday.

Mr. Gopi also informed that the rest of the capacity would be available for commercial use.

"ONGC is developing a strategic petroleum reserve facility of 1.75 MMT capacity at Mangaluru. 50% of this storage will be reserved as strategic storage and rest of the capacity will be available to ONGC for commercial operations," he told Parliament.

The project would be entirely funded by it.

Mr. Gopi also told the



A view of ONGC's advanced drilling rig. File @LG_LADAKH X/ANI

House that India's current storage capacity for crude oil and petroleum products could meet 74 days of its net crude import requirements.

He said the government had chalked out plans to build a storage capacity of 6.5 MMT, including the 4 MMT capacity in Odisha's Chandikhol and Karnataka's Padur.

On Chandikhol, he said "the estimated project cost is about ₹9,000 crores."

04A8. ONGC to Reserve Half of Mangaluru Facility for Strategic Reserves

ओएनजीसी मंगलूर सुविधा का आधा हिस्सा रणनीतिक भंडार के लिए सुरक्षित रखेगी

• State-owned Oil and Natural Gas Corporation (ONGC) will reserve half of its 1.75 million metric tonne (MMT) oil storage facility in Mangaluru as a strategic storage, Suresh Gopi, Minister of State (MoS) for Petroleum and Natural Gas, told the Rajya Sabha on Monday.

सरकारी स्वामित्व वाली ऑयल एंड नेचुरल गैस कॉर्पोरेशन (ONGC) अपनी 1.75 मिलियन मीट्रिक टन (MMT) क्षमता वाली मंगलूर तेल भंडारण सुविधा का आधा हिस्सा रणनीतिक भंडारण के लिए सुरक्षित रखेगी। यह जानकारी पेट्रोलियम एवं प्राकृतिक गैस राज्य मंत्री सुरेश गोपी ने सोमवार को राज्यसभा में दी।

• Mr. Gopi also informed that the rest of the capacity would be available for commercial use.

श्री गोपी ने यह भी बताया कि शेष क्षमता वाणिज्यिक उपयोग के लिए उपलब्ध रहेगी।

• "ONGC is developing a strategic petroleum reserve facility of 1.75 MMT capacity at Mangaluru. 50% of this storage will be reserved as strategic storage and the rest of the capacity will be available to ONGC for commercial operations," he told Parliament.

उन्होंने संसद को बताया, "ओएनजीसी मंगलूर में 1.75 MMT क्षमता की रणनीतिक पेट्रोलियम भंडार सुविधा विकसित कर रही है। इस भंडारण क्षमता का 50% हिस्सा रणनीतिक भंडारण के लिए सुरक्षित रहेगा और शेष क्षमता ओएनजीसी को वाणिज्यिक संचालन के लिए उपलब्ध होगी।"

- The project would be entirely funded by ONGC.
इस परियोजना का पूरा वित्तपोषण ओएनजीसी द्वारा किया जाएगा।
- Mr. Gopi also told the House that India's current storage capacity for crude oil and petroleum products could meet 74 days of its net crude import requirements.
श्री गोपी ने सदन को यह भी बताया कि भारत की वर्तमान कच्चे तेल और पेट्रोलियम उत्पादों की भंडारण क्षमता उसकी शुद्ध कच्चे तेल के आयात की आवश्यकता के लगभग 74 दिनों की पूर्ति कर सकती है।
- He said the government had chalked out plans to build a storage capacity of 6.5 MMT, including the 4 MMT capacity in Odisha's Chandikhol and Karnataka's Padur.
उन्होंने कहा कि सरकार ने 6.5 MMT की अतिरिक्त भंडारण क्षमता विकसित करने की योजना बनाई है, जिसमें ओडिशा के चांदीखोल तथा कर्नाटक के पादुर में 4 MMT क्षमता का विकास भी शामिल है।
- On Chandikhol, he said, "the estimated project cost is about ₹9,000 crore."
चांदीखोल परियोजना के संबंध में उन्होंने कहा, "इस परियोजना की अनुमानित लागत लगभग ₹9,000 करोड़ है।"

GS Paper III: Science and Technology		04 August 2026
TOPICS COVERED		
04A8	You get better care when you stop nodding and start asking why. जब आप केवल सहमति में सिर हिलाना बंद करके "क्यों" पूछना प्रारम्भ करते हैं, तब आपको बेहतर चिकित्सा देखभाल प्राप्त होती है।	
04A8	Water-bombing aircraft helps Greece battle wildfires जल-बमवर्षक विमान ग्रीस को जंगल की आग (वनाग्नि) से लड़ने में सहायता कर रहे हैं।	
04A8	QUIZ	
04A8	Why lab-grown diamonds are a sustainable alternative to mined stones प्रयोगशाला में विकसित हीरे (Lab-grown Diamonds) खनन किए गए हीरों का टिकाऊ विकल्प क्यों हैं?	

You get better care when you stop nodding and start asking why

Medical schools teach budding doctors to prevent disease, minimise risk, and, when in doubt, to investigate — whereas what you want out of treatment may be vastly different; when this is not discussed, a mismatch in expectations can develop, resulting in a trust deficit and disappointment

GS III: S&T
Narayana Subramaniam

Priya walks into an orthopaedician's clinic with knee pain that she says she has had for three months. The doctor spends eight minutes with her, prescribes an MRI, and asks her to come back with the images.

MRI shows signs of early osteoarthritis. The doctor lists three options: injections, physiotherapy or wait and watch. Priya nods, does not ask why she needed an MRI when the doctor could have examined her knee, and does not ask what 'early osteoarthritis' actually means or what happens if she does nothing. She opts for injections because of how she thought the doctor said it — some infection and tone.

Six months and four injections later, she has spent ₹15,000 but her pain is back. She is wondering if she got scammed, and if injections were ever the right call.

Priya was probably not scammed — but she made a decision about her body without understanding it. She did not know that she could have asked questions and she did not know that the doctor was not sure either.

Medicine is not certainty

You are taught that doctors discover diagnoses, that there is always a right answer, and that diagnoses are always objective. They are not. When the orthopaedician looked at Priya's knee, he was thinking that the probability of osteoarthritis was 40%, a meniscal tear 30%, a muscle strain 20% and in fact a 10% chance it was something else. He did not know for certain; his estimates were based on knowledge and experience, and probably what his last 10 patients had.

The MRI showed signs of arthritis — but arthritis on imaging does not always mean it is also the cause of pain. Plenty of people have degenerative changes and feel nothing while an equal number have almost no changes and have terrible pain. Instead, the orthopaedician interpreted the image, made an educated guess, and advised treatment.

Another doctor might have looked at the same image and said, "Wait. Let us see if physiotherapy helps first." A third doctor might have said, "This is asymptomatic degeneration. Leave it alone."

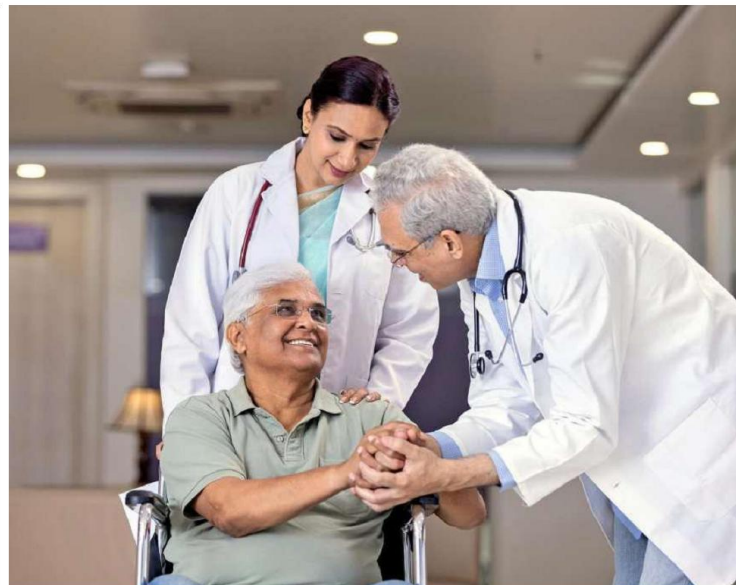
None of them would be objectively wrong. They are all interpreting the same evidence differently based on their experience, training, risk tolerance, and — honestly — how busy their practice is and what procedures they are equipped to do.

This is clinical medicine. It is not a process of discovery. It is almost always going to be a series of educated guesses filtered through a doctor's particular worldview.

And once you understand this, you realise something: if there is no objective right answer, you need to have a say in the decision. Your life is not the doctor's life. Your pain tolerance is not theirs. Your willingness to spend ₹15,000 on injections is not theirs.

On different tracks

Doctors are trained to approach illness in a particular way — whereas what you want out of treatment may be vastly different. When this is not discussed, a



You are taught that doctors discover diagnoses, that there is always a right answer, and that diagnoses are always objective. They are not. ISTOCKPHOTO

large mismatch in expectations can develop, resulting in a trust deficit and ultimately disappointment.

Medical schools teach budding doctors to prevent disease, minimise risk, and, when in doubt, to investigate. This makes sense if you have seen someone die of a missed diagnosis. The goal becomes to not miss anything, ever.

The orthopaedician was thinking: arthritis found, need to prevent progression, imaging confirms it, treat aggressively. Priya was thinking: my knee hurts, what is the quickest solution? One of them is inevitably frustrated and dissatisfied.

This happens every day in Indian hospitals. A doctor sees borderline blood pressure and recommends medication. Patient thinks: I feel fine, I do not need this. Both are right. Both are wrong. That is because they are having two separate conversations.

Crucially, the system does not teach doctors to fix this. As a patient, you can respond by asking questions.

A good patient

To be a good patient:

First, demand clarity on usefulness. Ask "what will this tell us that changes my treatment?", "what happens if it is normal?", "what happens if it is abnormal?", "how will you use this information?", and "what are the guidelines to treat this?"

Why? A doctor who can answer gets to keep your trust. But if the doctor dodges or gets irritated, you now know something important about how they practice.

Second, insist on options. Even

You know your body and yourself. The doctor knows medicine. Both of you are necessary to make a good decision. Making an informed choice is always better than a compliant one

osteoarthritis does not have just one treatment. The options include observation, physiotherapy, medications, injections, and surgery.

Why? A doctor operating in good faith might say, "We could try A, which works for some people but has risks, or B, which is safer but might not work. What matters more to you?"

Third, interrupt when you are confused. Do not nod and leave confused. Say "I did not follow that. Please explain it differently."

Why? Doctors do not mind. They would rather know and try again than have you leave thinking you understood.

One important question

Before any major treatment, ask: "What would you do if this was your mother?"

The answer is often different from what the doctors are recommending for you. This does not mean they are being unethical, it often means something else. Maybe they do not know your full picture: your job, your life, your ability to cope with side effects. With their mother, they know all of it. Or maybe they are being more cautious with their mother not because it is better medicine but because emotion changes judgment. Or maybe, they realise there are actually multiple

valid approaches and they have been presenting one option like it is the easiest one.

Your doctor knows there are choices — and they may have recommended one for reasons they have not explained. So Priya could have asked, "If this was your mother's knee, would you do four injections over six months?" The likely reply: "No. I would try physiotherapy first, and injections if that does not work."

When you are still suffering

You followed the plan. You are compliant, you are taking your medicines, doing your exercises, and generally doing what you were told. Nothing is working. In these circumstances, you should have a different conversation, e.g.: "I am following your plan but not getting better. What does that mean?"

Do not think you are accusing the doctor; you are simply investigating. Maybe the diagnosis was wrong, you need to wait longer, you need surgery or something else. You and your doctor need to figure that out together.

Stop thinking your job is to obey. You know your body and yourself. The doctor knows medicine. Both of you are necessary to make a good decision. Making an informed choice is always better than a compliant one. It will also improve doctor-patient relations. As much as you deserve a good doctor, doctors also deserve good patients.

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04A8. You get better care when you stop nodding and start asking why.

जब आप केवल सहमति में सिर हिलाना बंद करके "क्यों" पूछना प्रारम्भ करते हैं, तब आपको बेहतर चिकित्सा देखभाल प्राप्त होती है।

- The doctor spends eight minutes with her, prescribes an **MRI**, and asks her to come back with the images.
चिकित्सक उसके साथ आठ मिनट बिताते हैं, **एमआरआई (MRI)** कराने की सलाह देते हैं और उसे रिपोर्ट एवं चित्रों के साथ पुनः आने के लिए कहते हैं।
- MRI** shows signs of **early osteoarthritis**.
एमआरआई (MRI) में प्रारम्भिक ऑस्टियोआर्थराइटिस के संकेत दिखाई देते हैं।
- The doctor lists three options: **injections**, **physiotherapy** or **wait and watch**.
चिकित्सक तीन विकल्प बताते हैं: **इंजेक्शन**, **फिजियोथेरेपी**, अथवा **प्रतीक्षा कर निगरानी करना**।
- Priya nods, does not ask why she needed an **MRI** when the doctor could have examined her knee, and does not ask **what 'early osteoarthritis' actually means or what happens if she does nothing**.
प्रिया सहमति में सिर हिलाती है, यह नहीं पूछती कि जब चिकित्सक उसके घुटने की जाँच कर सकते थे तो **एमआरआई (MRI)** की आवश्यकता क्यों पड़ी, और यह भी नहीं पूछती कि **'प्रारम्भिक ऑस्टियोआर्थराइटिस'** का वास्तव में क्या अर्थ है या यदि वह कुछ न करे तो क्या होगा।
- Six months and four injections** later, she has spent **₹15,000** but her pain is back.
छह महीने और चार **इंजेक्शन** बाद, वह **₹15,000** खर्च कर चुकी है, लेकिन उसका दर्द फिर लौट आया है।
- When the **orthopaedician** looked at Priya's knee, he was thinking that the probability of **osteoarthritis** was **40%**, a **meniscal tear** **30%**, a **muscle strain** **20%** and in fact a **10%** chance it was something else.
जब **अस्थि रोग विशेषज्ञ** ने प्रिया के घुटने को देखा, तो उनके मन में यह अनुमान था कि **ऑस्टियोआर्थराइटिस** की संभावना **40%**, **मेनिस्कस फटने** की **30%**, **मांसपेशियों में खिंचाव** की **20%**, तथा **10%** संभावना किसी अन्य कारण की हो सकती है।
- The **MRI** showed signs of **arthritis** — but arthritis on imaging does not always mean it is also the cause of pain.
एमआरआई (MRI) में **आर्थराइटिस** के संकेत दिखाई दिए, किन्तु जाँच में **आर्थराइटिस** दिखना हमेशा यह सिद्ध नहीं करता कि वही दर्द का कारण भी है।
- Another doctor might have looked at the same image and said, "**Wait. Let us see if physiotherapy helps first.**"
कोई अन्य चिकित्सक उसी चित्र को देखकर कह सकता था, "रुकिए, पहले देखते हैं कि **फिजियोथेरेपी** से लाभ होता है या नहीं।"
- A third doctor might have said, "**This is asymptomatic degeneration. Leave it alone.**"
कोई तीसरा चिकित्सक कह सकता था, "यह **लक्षण-रहित अपक्षयी परिवर्तन (Asymptomatic Degeneration)** है। इसे ऐसे ही रहने दीजिए।"
- Medical schools** teach budding doctors to prevent disease, minimise risk, and, when in doubt, to investigate.
चिकित्सा महाविद्यालय (Medical Schools) भावी चिकित्सकों को रोग की रोकथाम, जोखिम को न्यूनतम करने तथा संदेह होने पर जाँच करने का प्रशिक्षण देते हैं।
- This makes sense if you have seen someone die of a missed diagnosis.**
यदि आपने किसी व्यक्ति को गलत या छूटे हुए निदान के कारण मरते देखा हो, तो यह दृष्टिकोण उचित प्रतीत होता है।
- The orthopedician was thinking: **arthritis** found, need to prevent progression, imaging confirms it, treat aggressively.

अस्थि रोग विशेषज्ञ सोच रहे थे: आर्थराइटिस मिल गया है, इसकी प्रगति रोकनी है, जाँच से इसकी पुष्टि हो गई है, इसलिए आक्रामक उपचार करना चाहिए।

- A doctor sees **borderline blood pressure** and recommends medication.
एक चिकित्सक सीमावर्ती उच्च रक्तचाप (Borderline Blood Pressure) देखकर दवा लेने की सलाह देता है।
- Patient thinks: I feel fine, I do not need this.
रोगी सोचता है: मैं तो बिल्कुल ठीक महसूस कर रहा हूँ, मुझे इसकी आवश्यकता नहीं है।
- First, demand **clarity on usefulness**.
सबसे पहले, उपयोगिता के संबंध में स्पष्टता की मांग करें।
- Ask "what will this tell us that changes my **treatment**?", "what happens if it is **normal**?", "what happens if it is **abnormal**?", "how will you use this **information**?", and "what are the **guidelines** to treat this?".
पूछें, "यह हमें ऐसा क्या बताएगा जिससे मेरे उपचार में परिवर्तन होगा?", "यदि यह सामान्य निकला तो क्या होगा?", "यदि यह असामान्य निकला तो क्या होगा?", "आप इस जानकारी का उपयोग कैसे करेंगे?", और "इसके उपचार के लिए दिशा-निर्देश क्या हैं?"
- Why? A **doctor** who can answer gets to keep your **trust**. But if the **doctor** dodges or gets irritated, you now know something important about how they practice.
क्यों? जो चिकित्सक इन प्रश्नों का उत्तर दे सकता है, वह आपका विश्वास बनाए रखता है। लेकिन यदि चिकित्सक उत्तर देने से बचता है या चिढ़ जाता है, तो आपको उसके कार्य करने के तरीके के बारे में एक महत्वपूर्ण बात पता चल जाती है।
- Second, insist on **options**. Even **osteoarthritis** does not have just one **treatment**. The **options** include **observation, physiotherapy, medications, injections, and surgery**.
दूसरे, विकल्पों पर जोर दें। ऑस्टियोआर्थराइटिस के लिए भी केवल एक ही उपचार नहीं होता। विकल्पों में निगरानी, फिजियोथेरेपी, दवाएँ, इंजेक्शन, और शल्यचिकित्सा शामिल हैं।
- Why? A **doctor** operating in good faith might say, "We could try A, which works for some people but has **risks**, or B, which is safer but might not work. What matters more to you?"
क्यों? सद्भावना से कार्य करने वाला चिकित्सक कह सकता है, "हम A का प्रयास कर सकते हैं, जो कुछ लोगों पर प्रभावी होता है, लेकिन इसमें जोखिम है, या B का, जो अधिक सुरक्षित है, परंतु संभव है कि वह प्रभावी न हो। आपके लिए अधिक महत्वपूर्ण क्या है?"
- Third, interrupt when you are **confused**. Do not nod and leave confused. Say "I did not follow that. Please explain it differently."
तीसरे, जब आप भ्रमित हों तो बीच में प्रश्न पूछें। केवल सिर हिलाकर भ्रम की स्थिति में वहाँ से न जाएँ। कहें, "मैं इसे समझ नहीं पाया। कृपया इसे किसी दूसरे तरीके से समझाइए।"
- Why? **Doctors** do not mind. They would rather know and try again than have you leave thinking you understood.
क्यों? चिकित्सकों को इससे कोई आपत्ति नहीं होती। वे यह जानना पसंद करेंगे कि आप नहीं समझे, ताकि वे दोबारा समझा सकें, बजाय इसके कि आप यह सोचकर चले जाएँ कि आपने समझ लिया।

One Important Question

एक महत्वपूर्ण प्रश्न

- Before any major **treatment**, ask: "What would you do if this was your **mother**?"
किसी भी बड़े उपचार से पहले पूछें: "यदि यह आपकी माता होती, तो आप क्या करते?"
- Do not think you are accusing the **doctor**; you are simply investigating.
यह न सोचें कि आप चिकित्सक पर आरोप लगा रहे हैं; आप केवल स्थिति को समझने का प्रयास कर रहे हैं।
- You know your **body** and yourself. The **doctor** knows **medicine**. Both of you are necessary to make a good **decision**.

आप अपने शरीर और स्वयं को जानते हैं। चिकित्सक चिकित्सा-विज्ञान को जानता है। एक अच्छा निर्णय लेने के लिए आप दोनों की आवश्यकता होती है।

- **Making an informed choice is always better than a compliant one.**
सूचित निर्णय लेना हमेशा केवल निर्देशों का पालन करने से बेहतर होता है।

Why lab-grown diamonds are sustainable alternative to mined stones

Natural diamond mining is facing dwindling supplies while remaining associated with environmental damage, forced labour, conflict and pollution; lab-grown diamonds offer a more affordable, traceable and sustainable alternative, with India investing in indigenous production and research

GS III: S&T

Anupama Janakiraman
U. Vishnuja
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For centuries, diamonds have been regarded as symbols of eternal love, characterised by their rarity, scintillation and lustre. But behind the glamour of these stones lies a cold, hard truth: an industry plagued by forced labour, civil violence, and pollution.

Some of the world's largest diamond mines, such as the Argyle mine in Australia and the Diavik mine in Canada, have reached a point of exhaustion in recent years. This depletion has worsened year by year, and production is now at a multi-decade low. After all, natural diamond mines are only a finite source. It is estimated that the 40 diamond mines accounting for 90% of global production spread throughout Botswana, Russia and other countries have a lifespan of no more than 50 years.

The hidden cost

However, the problems associated with natural diamonds extend beyond dwindling supplies. Diamond mining requires large amounts of water and energy and causes considerable damage to the surrounding ecosystems. It is often associated with deforestation, displacement, soil erosion and water pollution. Massive open-pit excavations can also trigger landslides and mudslides.

Moreover, labourers suffer from a plethora of diseases as a result of working in diamond mines. A study by Gill Nelson et al. in 2011 found that workers are at risk of asbestos exposure and may develop asbestos-related diseases, including asbestosis, pleural plaques, and mesothelioma.

Then come the blood diamonds, which are mined diamonds involved in illicit sales and used to fund military action. It is

geographic origin. Although the Kimberley Process was introduced to verify that diamonds are conflict-free, regulatory gaps continue to allow blood diamonds to be smuggled across borders. As a result, these diamonds contribute to political and civil conflict.

These concerns raise an important question: can the beauty and durability of diamonds be preserved without the social and environmental costs of mining? In recent years, the answer appears to be yes, through the use of lab-grown diamonds.

A sustainable alternative emerges

The first proven synthetic diamonds were made by GE (General Electric) in 1954, under a project codenamed "Project Superpressure." They utilised the HPHT (High Pressure, High Temperature) process, which mimics the conditions under which natural diamonds form in the Earth's mantle.

In 1962, another method known as CVD (Chemical Vapour Deposition) was first used. This process involves depositing diamond material onto diamond seeds through chemical reactions involving carbon-rich gases.

Lab-grown diamonds are chemically, physically and optically identical to their natural counterparts. Until 2018, they were sold at a modest discount to mined diamonds. Due to improvements in the efficiency of laboratory equipment, the price of lab-grown diamonds has continued to decline over the years. Now more affordable and traceable, lab-grown diamonds preserve the qualities that have made diamonds desirable since time immemorial while avoiding much of the damage linked to conventional production.

India's push for lab-grown diamonds

India has also begun to recognise the potential of lab-grown diamonds as a sustainable and economically viable

Table 1: presents a comparison of natural and lab-grown diamonds, drawing on findings from the Natural Diamond Council's 2025 report and a 2021 study by Vladislav Zhdanov et al

Criterion	Natural diamonds	Lab-grown diamonds
Cost per carat in India	₹1.5-7 lakhs	₹80,000
Water consumption	0.077 m ³ /ct	0-0.002 m ³ /ct
Energy consumption	150 kWh/ct (DeBeers)	36 kWh/ct (HPHT) 214.7 kWh/ct (MP-CVD)
CO2 emissions	160 kg/ct	17-260 kg/ct

Diamond prices vary based on the 4Cs — carat, cut, colour and clarity. The values shown are representative market ranges.

alternative to mined stones. In the Union Budget 2023-24, the Government of India announced measures to encourage indigenous production of lab-grown diamonds, including support for research into HPHT and CVD technologies.

As part of this initiative, in 2023, the Indian Institute of Technology Madras (IIT Madras) was awarded a five-year grant of approximately ₹243 crore by the Ministry of Commerce and Industry to establish the India Centre for Lab-Grown Diamond (InCent-LGD).

The centre aims to develop domestic expertise in diamond seeds, machinery, and manufacturing processes.

To put things into perspective, Table 1 consolidates the results of the 2025 Natural Diamond Council report and a 2021 study by Vladislav Zhdanov et al. to compare attributes of natural and lab-grown diamonds.

The staggering variation in carbon emissions for lab-grown diamonds can be attributed to the energy source used for production. Diamonds created using coal-heavy power grids have higher carbon emissions, while those manufactured using renewable energy sources have a much lower carbon footprint.

The latter aligns with the United

Nations Sustainable Development Goals (SDGs), which emphasise the transition to cleaner energy systems and more sustainable manufacturing practices. Furthermore, the use of renewable energy in diamond production reflects the principles of a circular economy, where resources are utilised more efficiently and environmental impacts are minimised throughout a product's life cycle.

Although lab-grown diamonds are not entirely free from environmental concerns, the next generation of consumers is increasingly drawn to them as a more sustainable alternative to mined diamonds. This shift in public perception reflects a growing emphasis on ethical sourcing, environmental responsibility, and product traceability.

Their advantages become even more significant when one considers the wide range of applications diamonds have in modern society. They are used in heavy-duty industrial processes, including cutting and drilling, as well as in quantum computing, protective coatings that extend equipment lifespan, semiconductor manufacturing and several other fields.

For a material so deeply woven into both industry and culture, selecting the more economical and sustainable option becomes no longer a choice — it is a responsibility.

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04A8. Why lab-grown diamonds are a sustainable alternative to mined stones

प्रयोगशाला में विकसित हीरे (Lab-grown Diamonds) खनन किए गए हीरों का टिकाऊ विकल्प क्यों हैं?

- For centuries, **diamonds** have been regarded as symbols of **eternal love**, characterised by their **rarity**, **scintillation** and **lustre**. सदियों से हीरों को शाश्वत प्रेम का प्रतीक माना जाता रहा है, जो अपनी दुर्लभता, चमक (Scintillation) तथा आभा (Lustre) के लिए प्रसिद्ध हैं।

- But behind the glamour of these stones lies a cold, hard truth: an industry plagued by **forced labour**, **civil violence**, and **pollution**.
किन्तु इन हीरों की चमक-दमक के पीछे एक कठोर वास्तविकता छिपी है—एक ऐसा उद्योग जो **बलात् श्रम**, **नागरिक हिंसा** तथा **प्रदूषण** जैसी समस्याओं से ग्रस्त है।
- Some of the world's largest **diamond mines**, such as the **Argyle Mine** in **Australia** and the **Diavik Mine** in **Canada**, have reached a point of exhaustion in recent years.
विश्व की कुछ सबसे बड़ी **हीरा खदानें**, जैसे **ऑस्ट्रेलिया** की **आर्गाइल खदान** तथा **कनाडा** की **डायविक खदान**, हाल के वर्षों में अपने संसाधनों की समाप्ति के चरण में पहुँच गई हैं।
- This depletion has worsened year by year, and production is now at a **multi-decade low**.
यह कमी वर्ष-दर-वर्ष बढ़ती गई है और अब उत्पादन **कई दशकों के न्यूनतम स्तर** पर पहुँच गया है।
- After all, natural **diamond mines** are only a finite source.
आखिरकार, प्राकृतिक **हीरा खदानें** एक सीमित संसाधन ही हैं।
- It is estimated that the **40 diamond mines** accounting for **90% of global production** spread throughout **Botswana**, **Russia** and other countries have a lifespan of no more than **50 years**.
अनुमान है कि **वैश्विक उत्पादन का 90%** देने वाली **40 हीरा खदानें**, जो **बोत्सवाना**, **रूस** तथा अन्य देशों में स्थित हैं, उनकी शेष आयु **50 वर्ष** से अधिक नहीं है।

The hidden cost

छिपी हुई कीमत

- However, the problems associated with **natural diamonds** extend beyond dwindling supplies.
किन्तु **प्राकृतिक हीरों** से जुड़ी समस्याएँ केवल घटती आपूर्ति तक सीमित नहीं हैं।
- **Diamond mining** requires large amounts of **water** and **energy** and causes considerable damage to the surrounding **ecosystems**.
हीरा खनन में अत्यधिक मात्रा में **जल** और **ऊर्जा** की आवश्यकता होती है तथा इससे आसपास के **पारिस्थितिक तंत्र** को गंभीर क्षति पहुँचती है।
- It is often associated with **deforestation**, **displacement**, **soil erosion** and **water pollution**.
यह प्रायः **वनों की कटाई**, **विस्थापन**, **मृदा अपरदन** तथा **जल प्रदूषण** से जुड़ा होता है।
- Massive **open-pit excavations** can also trigger **landslides** and **mudslides**.
विशाल खुली खदानों की खुदाई (Open-pit Excavations) से **भूस्खलन** तथा **कीचड़ धंसाव (Mudslides)** भी हो सकते हैं।
- Moreover, labourers suffer from a plethora of diseases as a result of working in **diamond mines**.
इसके अतिरिक्त, **हीरा खदानों** में कार्य करने वाले श्रमिक अनेक प्रकार की बीमारियों से प्रभावित होते हैं।
- A study by **Gill Nelson et al.** in **2011** found that workers are at risk of **asbestos exposure** and may develop **asbestos-related diseases**, including **asbestosis**, **pleural plaques**, and **mesothelioma**.
2011 में **गिल नेल्सन एवं सहयोगियों** के अध्ययन में पाया गया कि श्रमिकों को **एस्बेस्टस के संपर्क** का जोखिम रहता है, जिससे **एस्बेस्टस-संबंधी रोग**, जैसे **एस्बेस्टोसिस**, **प्लूरल प्लाक्स** तथा **मेसोथेलियोमा** विकसित हो सकते हैं।
- Then come the **blood diamonds**, which are mined diamonds involved in illicit sales and used to fund **military action**.
इसके बाद **ब्लड डायमंड्स (Blood Diamonds)** का प्रश्न आता है, जो अवैध रूप से बेचे जाते हैं और **सैन्य गतिविधियों** के वित्तपोषण के लिए उपयोग किए जाते हैं।
- It is nearly impossible to deduce a diamond's **geographic origin**.
किसी हीरे की **भौगोलिक उत्पत्ति** का पता लगाना लगभग असंभव होता है।
- Although the **Kimberley Process** was introduced to verify that diamonds are **conflict-free**, regulatory gaps continue to allow **blood diamonds** to be smuggled across borders.

यद्यपि किम्बरली प्रक्रिया (Kimberley Process) हीरों को संघर्ष-मुक्त (Conflict-free) प्रमाणित करने के लिए प्रारम्भ की गई थी, फिर भी नियामकीय कमियों के कारण ब्लड डायमंड्स की सीमा पार तस्करी अब भी जारी है।

- As a result, these diamonds contribute to **political** and **civil conflict**.
परिणामस्वरूप, ये हीरे राजनीतिक तथा आंतरिक संघर्षों को बढ़ावा देते हैं।
- These concerns raise an important question: can the beauty and durability of **diamonds** be preserved without the social and environmental costs of mining?
ये चिंताएँ एक महत्वपूर्ण प्रश्न उठाती हैं—क्या हीरों की सुंदरता और टिकाऊपन को खनन से जुड़े सामाजिक एवं पर्यावरणीय दुष्प्रभावों के बिना बनाए रखा जा सकता है?
- In recent years, the answer appears to be yes, through the use of **lab-grown diamonds**.
हाल के वर्षों में इसका उत्तर हाँ के रूप में सामने आया है, अर्थात् प्रयोगशाला में विकसित हीरों (Lab-grown Diamonds) के माध्यम से।

A sustainable alternative emerges

एक टिकाऊ विकल्प का उदय

- The first proven **synthetic diamonds** were made by GE (General Electric) in 1954, under a project codenamed “**Project Superpressure**.”
प्रथम प्रमाणित कृत्रिम हीरे (Synthetic Diamonds) GE (जनरल इलेक्ट्रिक) द्वारा 1954 में “प्रोजेक्ट सुपरप्रेसर” नामक परियोजना के अंतर्गत बनाए गए थे।
- They utilised the **HPHT (High Pressure, High Temperature)** process, which mimics the conditions under which natural diamonds form in the **Earth’s mantle**.
इनके निर्माण में **HPHT (High Pressure, High Temperature)** प्रक्रिया का उपयोग किया गया, जो पृथ्वी के मेंटल में प्राकृतिक हीरों के बनने जैसी परिस्थितियों की नकल करती है।
- In 1962, another method known as **CVD (Chemical Vapour Deposition)** was first used.
1962 में सीवीडी (Chemical Vapour Deposition - CVD) नामक एक अन्य विधि का पहली बार उपयोग किया गया।
- This process involves depositing **diamond material** onto **diamond seeds** through chemical reactions involving **carbon-rich gases**.
इस प्रक्रिया में कार्बन-समृद्ध गैसों की रासायनिक अभिक्रियाओं के माध्यम से डायमंड सीड्स पर हीरे की परत जमा की जाती है।
- Lab-grown diamonds** are chemically, physically and optically identical to their natural counterparts.
प्रयोगशाला में विकसित हीरे रासायनिक, भौतिक तथा प्रकाशीय गुणों की दृष्टि से प्राकृतिक हीरों के समान होते हैं।
- Until 2018, they were sold at a modest discount to mined diamonds.
2018 तक इन्हें प्राकृतिक खनन किए गए हीरों की तुलना में कुछ कम कीमत पर बेचा जाता था।
- Due to improvements in the efficiency of **laboratory equipment**, the price of **lab-grown diamonds** has continued to decline over the years.
प्रयोगशाला उपकरणों की दक्षता में सुधार के कारण प्रयोगशाला में विकसित हीरों की कीमत समय के साथ लगातार कम होती गई है।
- Now more **affordable** and **traceable**, **lab-grown diamonds** preserve the qualities that have made diamonds desirable since time immemorial while avoiding much of the damage linked to conventional production.
अब अधिक किफायती और अनुसरण योग्य (Traceable) बन चुके प्रयोगशाला में विकसित हीरे, उन सभी गुणों को बनाए रखते हैं जिन्होंने प्राचीन काल से ही हीरों को आकर्षक बनाया है, साथ ही पारंपरिक खनन से जुड़े अधिकांश सामाजिक एवं पर्यावरणीय नुकसान से भी बचाते हैं।

India's Push for Lab-Grown Diamonds

प्रयोगशाला में निर्मित हीरों को बढ़ावा देने की भारत की पहल

- India has also begun to recognise the potential of **lab-grown diamonds** as a sustainable and economically viable alternative to **mined diamonds**.
भारत ने भी प्रयोगशाला में निर्मित हीरों (Lab-Grown Diamonds) की क्षमता को खनन से प्राप्त हीरों के एक टिकाऊ और आर्थिक रूप से व्यवहार्य विकल्प के रूप में स्वीकार करना प्रारम्भ कर दिया है।
- In the **Union Budget 2023-24**, the **Government of India** announced measures to encourage indigenous production of **lab-grown diamonds**, including support for research into **HPHT** and **CVD technologies**.
केंद्रीय बजट 2023-24 में भारत सरकार ने प्रयोगशाला में निर्मित हीरों के स्वदेशी उत्पादन को प्रोत्साहित करने के लिए कई उपायों की घोषणा की, जिनमें **HPHT** तथा **CVD प्रौद्योगिकियों** पर अनुसंधान के लिए समर्थन भी शामिल था।
- As part of this initiative, in **2023**, the **Indian Institute of Technology Madras (IIT Madras)** was awarded a **five-year grant** of approximately **₹243 crore** by the **Ministry of Commerce and Industry** to establish the **India Centre for Lab-Grown Diamond (InCent-LGD)**.
इस पहल के अंतर्गत, **2023** में भारतीय प्रौद्योगिकी संस्थान मद्रास (IIT Madras) को वाणिज्य एवं उद्योग मंत्रालय द्वारा **इंडिया सेंटर फॉर लैब-ग्रोन डायमंड (InCent-LGD)** की स्थापना हेतु लगभग **₹243 करोड़** का पाँच वर्षीय अनुदान प्रदान किया गया।
- The **centre** aims to develop domestic expertise in **diamond seeds, machinery, and manufacturing processes**.
इस केंद्र का उद्देश्य डायमंड सीड, मशीनरी तथा विनिर्माण प्रक्रियाओं में घरेलू विशेषज्ञता विकसित करना है।
- To put things into perspective, **Table 1** consolidates the results of the **2025 Natural Diamond Council report** and a **2021 study** by **Vladislav Zhdanov et al.** to compare attributes of **natural diamonds** and **lab-grown diamonds**.
स्थिति को स्पष्ट करने के लिए, तालिका 1 में **2025 की नेचुरल डायमंड काउंसिल रिपोर्ट** तथा **व्लादिस्लाव झदानोव एवं सह-लेखकों के 2021 के अध्ययन** के निष्कर्षों को संकलित किया गया है, ताकि प्राकृतिक हीरों और प्रयोगशाला में निर्मित हीरों की विशेषताओं की तुलना की जा सके।
- The staggering variation in **carbon emissions** for **lab-grown diamonds** can be attributed to the **energy source** used for production.
प्रयोगशाला में निर्मित हीरों के कार्बन उत्सर्जन में अत्यधिक अंतर का मुख्य कारण उनके उत्पादन में प्रयुक्त ऊर्जा स्रोत है।
- Diamonds created using **coal-heavy power grids** have higher **carbon emissions**, while those manufactured using **renewable energy sources** have a much lower **carbon footprint**.
कोयला-आधारित विद्युत ग्रिडों का उपयोग करके बनाए गए हीरों में कार्बन उत्सर्जन अधिक होता है, जबकि नवीकरणीय ऊर्जा स्रोतों से निर्मित हीरों का कार्बन पदचिह्न बहुत कम होता है।
- The latter aligns with the **United Nations Sustainable Development Goals (SDGs)**, which emphasise the transition to **cleaner energy systems** and more **sustainable manufacturing practices**.
दूसरा विकल्प संयुक्त राष्ट्र के सतत विकास लक्ष्यों (SDGs) के अनुरूप है, जो स्वच्छ ऊर्जा प्रणालियों तथा अधिक सतत विनिर्माण प्रक्रियाओं की ओर संक्रमण पर बल देते हैं।
- Furthermore, the use of **renewable energy** in diamond production reflects the principles of a **circular economy**, where resources are utilised more efficiently and **environmental impacts** are minimised throughout a product's **life cycle**.
इसके अतिरिक्त, हीरों के उत्पादन में नवीकरणीय ऊर्जा का उपयोग परिपत्र अर्थव्यवस्था (Circular Economy) के सिद्धांतों को प्रतिबिंबित करता है, जिसमें संसाधनों का अधिक कुशल उपयोग किया जाता है तथा किसी उत्पाद के जीवन-चक्र के दौरान पर्यावरणीय प्रभावों को न्यूनतम रखा जाता है।
- Although **lab-grown diamonds** are not entirely free from **environmental concerns**, the next generation of consumers is increasingly drawn to them as a more sustainable alternative to



mined diamonds.

यद्यपि प्रयोगशाला में निर्मित हीरे पूरी तरह पर्यावरणीय चिंताओं से मुक्त नहीं हैं, फिर भी नई पीढ़ी के उपभोक्ता उन्हें खनन से प्राप्त हीरों की तुलना में अधिक टिकाऊ विकल्प के रूप में तेजी से स्वीकार कर रहे हैं।

- This shift in **public perception** reflects a growing emphasis on **ethical sourcing**, **environmental responsibility**, and **product traceability**.
जनधारणा में यह परिवर्तन नैतिक स्रोत-प्राप्ति, पर्यावरणीय उत्तरदायित्व तथा उत्पाद अनुरेखण (ट्रेसबिलिटी) पर बढ़ते हुए बल को दर्शाता है।
- Their advantages become even more significant when one considers the wide range of **applications** diamonds have in modern society.
जब आधुनिक समाज में हीरों के व्यापक अनुप्रयोगों पर विचार किया जाता है, तब इनके लाभ और भी अधिक महत्वपूर्ण हो जाते हैं।
- They are used in **heavy-duty industrial processes**, including **cutting** and **drilling**, as well as in **quantum computing**, **protective coatings** that extend equipment lifespan, **semiconductor manufacturing** and several other fields.
इनका उपयोग भारी औद्योगिक प्रक्रियाओं, जैसे कटाई और ड्रिलिंग, के अतिरिक्त क्वांटम कंप्यूटिंग, उपकरणों का जीवनकाल बढ़ाने वाली सुरक्षात्मक परतों, अर्धचालक (सेमीकंडक्टर) विनिर्माण तथा अनेक अन्य क्षेत्रों में किया जाता है।
- For a material so deeply woven into both **industry** and **culture**, selecting the more **economical** and **sustainable** option becomes no longer a choice — it is a **responsibility**.
ऐसी सामग्री, जो उद्योग और संस्कृति दोनों से गहराई से जुड़ी हुई है, उसके लिए अधिक किफायती और सतत विकल्प का चयन अब केवल एक विकल्प नहीं, बल्कि एक उत्तरदायित्व बन जाता है।

GS Paper III: Internal Security	04 August 2026
TOPICS COVERED	
04A8	Why has West Bengal cleared land for the BSF now? पश्चिम बंगाल ने अब BSF के लिए भूमि क्यों हस्तांतरित की है?

Why has West Bengal cleared land for the BSF now?

Why is West Bengal central to India's border fencing project? What are the policy challenges?

GS III: Internal Security

Saeed Pande

The story so far:

The West Bengal Cabinet has approved the permanent transfer of 31,905 acres at nine locations to the Border Security Force (BSF) for border fencing and related security infrastructure, along with 1.53 acres for three new Border Outposts in Malda, Nadia and Cooch Behar. The decision removes a major State-level bottleneck in a long-delayed border infrastructure project affected by land acquisition disputes, difficult terrain, and legal and political complications. The move also follows the Calcutta High Court's order of January 2026, directing the State government to hand over acquired land in nine border districts to the BSF by March 31, 2026.

Why is Bengal central to the project?
West Bengal shares the longest international border with Bangladesh among Indian States. According to the

Ministry of Home Affairs, India's 4,096.70-km border with Bangladesh includes 2,216.7 km in West Bengal, which is approximately 54% of the entire frontier. As of August 2025, 1,647.696 km had been fenced, while 569.004 km remained to be covered by fencing or other border infrastructure. Of this, 112.780 km was classified as non-feasible for conventional fencing, while 456.224 km remained technically feasible but pending completion.

Why has the project been delayed?
The delays reflect a combination of geographical, administrative and legal constraints. Nationally, the MHA reported that 3,232.218 km of the India-Bangladesh border had been fenced by August 2025, leaving 864.482 km unfenced across West Bengal (2,216.7 km), Tripura (856 km), Meghalaya (443 km), Mizoram (318 km) and Assam (263 km). Of the remaining unfenced stretch, 174.514 km has been categorised as non-feasible for conventional fencing

because of riverine channels, marshlands, floodplains, shifting river courses, densely inhabited settlements and the ecologically sensitive Sundarbans, where fencing is technically difficult and seasonally constrained. Other pending stretches require land acquisition, compensation, environmental clearances and completion of bilateral border management procedures.

What governs India-Bangladesh border fencing?

According to the Ministry of External Affairs, India undertakes border fencing and related security measures in accordance with bilateral agreements and operational protocols between the BSF and the Border Guard Bangladesh (BGB). The border is governed by the 1975 Joint India-Bangladesh Guidelines for Border Authorities, the Coordinated Border Management Plan (CBMP), 2011, and the 2015 Land Boundary Agreement (LBA), which implemented the 1974 Land Boundary Agreement and its 2011

Protocol, resolved enclave and adverse-possession disputes, and enabled the exchange of 162 enclaves, 111 Indian enclaves in Bangladesh and 51 Bangladeshi enclaves in India. India has also reiterated its expectation that these understandings will continue to support cooperation against cross-border crimes, including smuggling, human trafficking, illegal migration, arms trafficking and counterfeit currency networks.

What are the policy challenges?

This is a challenge of balancing national security with the livelihoods of communities living along the border. In districts such as Malda and Nadia, agriculture, informal trade and long-standing social ties extend across the frontier, meaning that fencing can improve surveillance while also affecting access to farmland, mobility and local commerce. As the largest unfinished segment of the India-Bangladesh border lies in West Bengal, progress and development in the State remain central to the completion of the national fencing programme. In many sectors, particularly riverine terrain, the future of border management is likely to depend on an integrated combination of physical barriers, Border Outposts, surveillance technology and coordinated action between the Union and State governments.

(Saeed Pande is a freelance writer with a focus on current affairs, international relations and geopolitics)

THE GIST

The West Bengal Cabinet has approved the transfer of over 33 acres of land to the BSF for border fencing and Border Outposts, removing a long-pending bottleneck in completing security infrastructure along the India-Bangladesh border.

Although more than three-fourths of the border has been fenced, progress continues to be delayed by land acquisition disputes, difficult riverine terrain, environmental constraints and legal issues, requiring a mix of fencing, surveillance technology and coordinated Union-State action.



04A8. Why has West Bengal cleared land for the BSF now?

पश्चिम बंगाल ने अब BSF के लिए भूमि क्यों हस्तांतरित की है?

- The **West Bengal Cabinet** has approved the permanent transfer of **31.905 acres** at **nine locations** to the **Border Security Force (BSF)** for **border fencing** and related **security infrastructure**, along with **1.53 acres** for **three new Border Outposts** in **Malda, Nadia and Cooch Behar**.
पश्चिम बंगाल मंत्रिमंडल ने सीमा सुरक्षा बल (BSF) को सीमा बाड़बंदी (Border Fencing) तथा संबंधित सुरक्षा अवसंरचना के लिए नौ स्थानों पर 31.905 एकड़ भूमि के स्थायी हस्तांतरण को स्वीकृति दी है। इसके अतिरिक्त मालदा, नदिया तथा कूचबिहार में तीन नए सीमा चौकियों (Border Outposts) के लिए 1.53 एकड़ भूमि भी स्वीकृत की गई है।
- The decision removes a major **State-level bottleneck** in a long-delayed **border infrastructure project** affected by **land acquisition disputes**, difficult terrain, and legal and political complications.
यह निर्णय लंबे समय से लंबित सीमा अवसंरचना परियोजना में मौजूद एक प्रमुख राज्य-स्तरीय बाधा को दूर करता है, जो भूमि अधिग्रहण विवादों, कठिन भौगोलिक परिस्थितियों तथा कानूनी एवं राजनीतिक जटिलताओं से प्रभावित रही है।
- The move also follows the **Calcutta High Court's** order of **January 2026**, directing the State government to hand over acquired land in **nine border districts** to the **BSF** by **March 31, 2026**.
यह कदम जनवरी 2026 में कलकत्ता उच्च न्यायालय द्वारा दिए गए उस आदेश के बाद उठाया गया है, जिसमें राज्य सरकार को 31 मार्च 2026 तक नौ सीमावर्ती जिलों में अधिग्रहित भूमि BSF को सौंपने का निर्देश दिया गया था।

Why is Bengal central to the project?

इस परियोजना में पश्चिम बंगाल की भूमिका केंद्रीय क्यों है?

- West Bengal** shares the longest international border with **Bangladesh** among Indian States.
भारतीय राज्यों में पश्चिम बंगाल की बांग्लादेश के साथ सबसे लंबी अंतरराष्ट्रीय सीमा है।
- According to the **Ministry of Home Affairs (MHA)**, India's **4,096.70-km border** with **Bangladesh** includes **2,216.7 km** in **West Bengal**, which is approximately **54%** of the entire frontier.
गृह मंत्रालय (MHA) के अनुसार, बांग्लादेश के साथ भारत की 4,096.70 किलोमीटर लंबी सीमा में से 2,216.7 किलोमीटर पश्चिम बंगाल में स्थित है, जो कुल सीमा का लगभग 54% है।
- As of **August 2025**, **1,647.696 km** had been fenced, while **569.004 km** remained to be covered by fencing or other **border infrastructure**.
अगस्त 2025 तक 1,647.696 किलोमीटर सीमा पर बाड़ लगाई जा चुकी थी, जबकि 569.004 किलोमीटर सीमा पर अभी भी बाड़बंदी या अन्य सीमा अवसंरचना का कार्य शेष था।
- Of this, **112.780 km** was classified as **non-feasible** for conventional fencing, while **456.224 km** remained technically feasible but pending completion.
इसमें से 112.780 किलोमीटर क्षेत्र को पारंपरिक बाड़बंदी के लिए अव्यवहार्य (Non-feasible) माना गया, जबकि 456.224 किलोमीटर क्षेत्र तकनीकी रूप से संभव होने के बावजूद अभी अधूरा था।

Why has the project been delayed?

यह परियोजना विलंबित क्यों हुई है?

- The delays reflect a combination of **geographical, administrative and legal constraints**.
इस परियोजना में हुई देरी भौगोलिक, प्रशासनिक तथा कानूनी बाधाओं के संयुक्त प्रभाव का परिणाम है।

- Nationally, the MHA reported that 3,232.218 km of the India–Bangladesh border had been fenced by August 2025, leaving 864.482 km unfenced across West Bengal (2,216.7 km), Tripura (856 km), Meghalaya (443 km), Mizoram (318 km) and Assam (263 km).
राष्ट्रीय स्तर पर गृह मंत्रालय (MHA) के अनुसार अगस्त 2025 तक भारत–बांग्लादेश सीमा के 3,232.218 किलोमीटर भाग पर बाड़ लगाई जा चुकी थी, जबकि 864.482 किलोमीटर सीमा अभी भी बिना बाड़ के थी। यह सीमा पश्चिम बंगाल (2,216.7 किमी), त्रिपुरा (856 किमी), मेघालय (443 किमी), मिजोरम (318 किमी) तथा असम (263 किमी) से होकर गुजरती है।
- Of the remaining unfenced stretch, 174.514 km has been categorised as non-feasible for conventional fencing because of riverine channels, marshlands, floodplains, shifting river courses, densely inhabited settlements and the ecologically sensitive Sundarbans, where fencing is technically difficult and seasonally constrained.
शेष बिना बाड़ वाले क्षेत्र में से 174.514 किलोमीटर को पारंपरिक बाड़बंदी के लिए अव्यवहार्य माना गया है, क्योंकि वहाँ नदी चैनल, दलदली क्षेत्र, बाढ़ के मैदान, नदी की बदलती धाराएँ, घनी आबादी वाली बस्तियाँ तथा पारिस्थितिक दृष्टि से संवेदनशील सुंदरबन स्थित हैं, जहाँ तकनीकी और मौसमी कारणों से बाड़बंदी करना अत्यंत कठिन है।
- Other pending stretches require land acquisition, compensation, environmental clearances and completion of bilateral border management procedures.
शेष लंबित क्षेत्रों में भूमि अधिग्रहण, मुआवज़ा, पर्यावरणीय स्वीकृतियाँ तथा द्विपक्षीय सीमा प्रबंधन प्रक्रियाओं को पूरा किया जाना आवश्यक है।

What Governs India-Bangladesh Border Fencing?

भारत-बांग्लादेश सीमा पर बाड़बंदी का संचालन किसके द्वारा किया जाता है?

- According to the Ministry of External Affairs, India undertakes border fencing and related security measures in accordance with bilateral agreements and operational protocols between the Border Security Force (BSF) and the Border Guard Bangladesh (BGB).
विदेश मंत्रालय के अनुसार, भारत सीमा पर बाड़बंदी तथा उससे संबंधित सुरक्षा उपायों को सीमा सुरक्षा बल (BSF) और बॉर्डर गार्ड बांग्लादेश (BGB) के बीच हुए द्विपक्षीय समझौतों तथा संचालन प्रोटोकॉल के अनुरूप लागू करता है।
- The border is governed by the 1975 Joint India-Bangladesh Guidelines for Border Authorities, the Coordinated Border Management Plan (CBMP), 2011, and the 2015 Land Boundary Agreement (LBA), which implemented the 1974 Land Boundary Agreement and its 2011 Protocol, resolved enclave and adverse-possession disputes, and enabled the exchange of 162 enclaves, 111 Indian enclaves in Bangladesh and 51 Bangladeshi enclaves in India.
इस सीमा का संचालन 1975 के भारत-बांग्लादेश संयुक्त सीमा प्राधिकरण दिशा-निर्देशों, समन्वित सीमा प्रबंधन योजना (CBMP), 2011, तथा 2015 के भूमि सीमा समझौते (LBA) के अंतर्गत होता है। इस समझौते ने 1974 के भूमि सीमा समझौते और उसके 2011 प्रोटोकॉल को लागू किया, एन्क्लेव तथा प्रतिकूल कब्जे (Adverse Possession) से जुड़े विवादों का समाधान किया और 162 एन्क्लेवों के आदान-प्रदान को संभव बनाया, जिनमें बांग्लादेश में स्थित 111 भारतीय एन्क्लेव तथा भारत में स्थित 51 बांग्लादेशी एन्क्लेव शामिल थे।
- India has also reiterated its expectation that these understandings will continue to support cooperation against cross-border crimes, including smuggling, human trafficking, illegal migration, arms trafficking and counterfeit currency networks.
भारत ने यह भी दोहराया है कि ये व्यवस्थाएँ सीमा-पार अपराधों, जैसे तस्करी, मानव तस्करी, अवैध प्रवासन, हथियारों की तस्करी तथा जाली मुद्रा नेटवर्क के विरुद्ध सहयोग को आगे भी सुदृढ़ करती रहेंगी।

What Are the Policy Challenges?

नीतिगत चुनौतियाँ क्या हैं?

- This is a challenge of balancing **national security** with the **livelihoods** of communities living along the border.
यह राष्ट्रीय सुरक्षा और सीमा के निकट रहने वाले समुदायों की **आजीविका** के बीच संतुलन स्थापित करने की चुनौती है।
- In districts such as **Malda** and **Nadia**, **agriculture**, **informal trade** and long-standing **social ties** extend across the frontier, meaning that fencing can improve **surveillance** while also affecting access to **farmland**, **mobility** and **local commerce**.
मालदा और नदिया जैसे जिलों में **कृषि**, **अनौपचारिक व्यापार** तथा लंबे समय से चले आ रहे **सामाजिक संबंध** सीमा के दोनों ओर फैले हुए हैं। इसलिए **बाड़बंदी** एक ओर **निगरानी** को बेहतर बना सकती है, वहीं दूसरी ओर **कृषि भूमि** तक पहुँच, **आवागमन** तथा **स्थानीय व्यापार** को भी प्रभावित कर सकती है।
- As the largest **unfinished segment** of the **India-Bangladesh border** lies in **West Bengal**, progress and development in the State remain central to the completion of the national **border fencing programme**.
चूँकि **भारत-बांग्लादेश सीमा** का सबसे बड़ा **अपूर्ण खंड पश्चिम बंगाल** में स्थित है, इसलिए राज्य में प्रगति और विकास राष्ट्रीय **सीमा बाड़बंदी कार्यक्रम** को पूरा करने के लिए अत्यंत महत्वपूर्ण बने हुए हैं।
- In many sectors, particularly **riverine terrain**, the future of **border management** is likely to depend on an integrated combination of **physical barriers**, **Border Outposts**, **surveillance technology** and coordinated action between the **Union** and **State governments**.
अनेक क्षेत्रों में, विशेषकर **नदीय भू-भाग** में, भविष्य का **सीमा प्रबंधन भौतिक अवरोधों, सीमा चौकियों (Border Outposts), निगरानी प्रौद्योगिकी तथा केंद्र और राज्य सरकारों के बीच समन्वित कार्रवाई के** एकीकृत संयोजन पर निर्भर रहने की संभावना है।